

Quo Vadis America

An Exploratory Report
by
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Well focused and low key but persistent probing of critical weakness will serve as evidence of deep concern.

The Past: Economists have been saying for a long time that good education is an important economic asset. The fact that good education is vital to national security is brought out dramatically only at the time of crisis. The famous address of Admiral Nimitz who was sharply critical of our Nation and of the professions for neglecting the quality of education in mathematics and science points this up. Admiral Rickover's concern for the discovery and development of young talent was sharpened by the need for disciplined talent in his work directing the national atomic energy effort (Cf Chapter V attached).

As we were drawn into the Second World War we embarked upon an intensive program of mobilization of our scientific and technical talent. We were saved from the unhappy consequences of our neglect in nurturing our Nation's talent by the dramatic influx of scientific and technical people escaping the tragic environment of Europe. Staff composition of the quickly organized Radiation Laboratory at MIT, our national center of defense research, illustrates the importance to us of this influx of talent.

As peace returned, the public sense of urgency dissipated and we became complacent again. We were shocked out of this complacency by the appearance of Sputnik. Our technological superiority was questioned and, with the cold war at its very intensive stage, we felt threatened. The public press laid the blame upon school teachers, accusing them of incompetence. Great material resources were made available for programs designed to upgrade the competence of mathematics and science teachers. The National Science Foundation (NSF) helped to organize many Summer Teacher Institutes as well as Academic Year Institutes to achieve these aims.

Shortly afterwards the NSF began to sponsor Summer Science Training Programs (SSTP) for gifted secondary school youngsters. They introduced over 200 such programs over 20 of which were devoted exclusively to mathematics. The sole concern throughout was the high quality of content.

The Present: Since those days much has happened which has been exciting in science and technology. Our social problems have not been simple. Our economic well being still depends upon the quality of our education. The world economists are convinced of this. Here, it is important to upgrade the competence of our overall work force and also to nurture our Nation's youthful talent in order to maintain our cadres of innovators.

We have discovered that the post-cold-war world is not a safe place for any nation. Economic competition is keen, sometimes even

bitter. Competence of our overall work force and the capacity of our talented elite to innovate both contribute to our competitiveness. However we are sadly deficient in bringing about the needed work force competence. We are also deficient in introducing our talented youth to a life of exploration. To bring about the critically needed improvements does not call for spending much more money. It does require using the available resources more intelligently.

We may profitably look to our past for lessons we can use.

It is critically important to improve our mathematics and science education. Dr. Bruce Alberts, the president of the National Academy of Sciences, pointed out that we do not have an adequate number of master teachers to bring about the needed improvement. Unless we have an adequate number of schools with master teachers, allowing parents to choose a school will not be meaningful.

We do have master teachers. In mathematics a group of very able teachers banded together as the American Regions Mathematics League (ARML) to introduce extracurricular seminars in their schools and then sponsor an interesting annual national competition for their pupils. What they do, does help to discover and develop natural talent.

There is a tiny number of talent search summer programs on university campuses. Some are survivals of the Sputnik era and some are the offshoots of these. All of these are considered to be "elitist" by bureaucrats and are not encouraged.

It is readily admitted that the work of talent search and development gives one much pleasure. It is much more difficult to convince most people that such work has an important direct bearing on competitiveness of an industrial concern. Let me give but one recent thought provoking example.

"It is for good reason that Schlumberger Ltd., the blue chip oil services company, finds itself a perennial on lists of the world's best-managed companies. Schlumberger's leader Euan Baird nevertheless keeps an eye on his strong competitors like Western Atlas, etc. Baird makes a point of singling out the unique talents of Schlumberger employees. These top geologists, physicists and mathematicians recruited from 70 (seventy) nations, move from one remote outpost to another, assuming huge responsibilities in an organization with unusually lean management. In exchange, they are free to push the limits of their creativity. These are the kinds of resources, Baird suggests, the vagaries of the oil market can't touch." (From U.S. News, 7, 10, 95, Copy attached)

Suggested low-key but well focused and persistent probing will point up the deep concern over the quality of education. But more than that. In two years it may induce changes which could make the planned overall reform more successful and better appreciated.

To ask Dr. Neal Lane, the director of the NSF if anything comparable to the Sputnik era effort is being done to decrease the current shortfall of master teachers. It should be arranged as a series of low key well focused inquiries spaced in time.

Another series of well formed questions for Dr. Neal Lane.