Learning and Talent

In Search of the Elusive

By J.V. NARLIKAR

SOMETIMES during the mid-sixties, while on a visit to India from Cambridge, where I was then based, I recall the enthusiasm with which Vikram Sarabhai informed me of a new scheme to be launched in India which would select school children with special talent for science. The scheme became known as the National Science Talent Search (NSTS) Scheme. It selected students after a rigorous test of mental ability, mathematics and science and they were given scholarship for their college careers.

In this day and age of science and technology, nobody can deny the need to have bright, motivated and original minds opting for a scientific career. Indeed, if the nation is to be at the forefront of scientific developments it cannot afford to be democratic in its choice of scientific humanpower: it must be unashamedly elitist. Part of the trouble in our current scientific establishment comes from not honouring this truism.

Against this background where conformist mediocrity is preferred to innovative excellence, the NSTS Scheme stood out as an exception. Instead of memorising answers for reproduction in the examination, here one was asked to think on the spot. Whatever its defects, the test did pick out a shortlist of students with exceptional ability.

But it was too good to last. Some time during the seventies, the argument was made: Why restrict the scheme to science? Talent exists in the arts and humanities also. Shouldn't the nation aspire to have a Rabindranath Tagore as much as a C.V. Raman?

Looks Good

On paper the argument looks good. Certainly in this hullabaloo about science and technology we should not forget the liberal arts. Scholars are needed in the humanities too and they help enrich our culture and save it from the monotony of mechnisation brought about by single-minded pursuit of science and technology. So the scheme should search for talent, scientific or otherwise. In short, change NSTS to NTS.

But this pious intention appears to have been forgotten in translating the argument from paper to practice. Look at the way the tests for NTS are designed today. Instead of science and maths we now have science, maths and social studies. The respective weightages attached to these subjects are 40, 20 and 40 out of hundred. And with this change, the emphasis has shifted from thinking to memorising.

India boasts of a long oral tradition. By calling our Vedas "apaurusheyas" we take pride in highlighting the fact that the knowledge in the Vedas was never written down but handed down orally from guru to disciple. Thus memorizing was always a major part of our traditional learning.

Nothing emphasises this as early as the episode of the first Sankaracharya searching for the house of Mandan Misra with whom he was to conduct a scholastic argument. Sankara was told by the locals to look for the house where the pet birds are found engaged in philosophical arguments.

Parrots are able to speak what they are made to hear repeatedly. Mandan Misra's classes were obviously going through exercises of repeating verbatim the arguments in the oral texts. So much so that the birds began to repeat them too.

Ideas Blocked

It is this emphasis on word-for-word reproduction of our ancient texts that slowly effaced their conceptual content; and today's researchers are trying to figure out what they really meant. Moreover, this also blocked the entry of new ideas or research.

Ability to memorize certainly helps in having facts at one's disposal whenever needed. But is it talent? Certainly not so for science which sets great store by comprehension, questioning and exploration of the unknown. Neither so in literature where the art of communication, perception of human nature and human societies, depth of abstract thought and observation of nature at work bring out the best creations.

The computers today are efficient storekeepers of information. With their increasingly easy availability and access, many of the items which we humans are used to memorizing are more readily acquired from such stores of information. Indeed, I would argue that talent can be found in the way a person driven by an urge for information searches for it and finally acquires it.

We as a nation are very good at finding loopholes in the laws, rules and procedures set up with the best intentions. The switchover from NSTS to NTS is no exception. Since the introduction of social studies into the test teachers and students have quickly realised that to score marks it is better to memorize known details of history, geography, civics and economics, than to attempt tortuous mathematical problems or answer questions in science which require thinking and comprehension. So coaching classes have sprung up which train students accordingly. Natural talent is thus forced to take a back seat.

Important Part

To clear any misunderstanding, let me hasten to distinguish the important part played by social scientists in addressing social problems from the type of social studies found in the school syllabi. The former requires talent of a high order coupled with experience and maturity. This talent is difficult to spot at the school age and certainly cannot be acquired by mugging up encyclopaedic knowledge of the latter kind that is forgotten soon after the examination. Scoring high marks in social studies at school is no indication that the child will grow up to be a distinguished social scientist.

So, the time has come to re-examine the present method of gauging talent under the NTS scheme. The elimination of questions that stress rote learning is easy. More difficult is to find new ways of gauging the child's power of observation of surroundings animate as well as inanimate, of expressing ideas and feelings, and of searching for and acquiring information. Multiple choice questions may not always achieve this. Here is an example of testing the student's ability to search for information. Give him or her the All-India Railway Time Table to find out a convenient route from Belgaum to Burdwan.

Finally, what do the students themselves feel about the way science is taught in our schools? The following incident is revealing. As part of the National Science Day celebrations at the Inter-University Centre for Astronomy and Astrophysics, school children were asked to write on-the-spot essays on difficulties in learning science. Almost all of them wrote, complaining about the continuing emphasis on rote learning at the cost of increasing comprehension and satisfying curiosity.

Adults, please take note.