A PHILOSOPHY

In establishing a new kind of educational institution which is heavily dependent on public funding, it is incumbent to describe the goals and the means as clearly as possible. We do this here in several steps: We define the general objectives, the specifications and finally, the general philosophy.

1. The objectives are to create a school which will cater to youngsters gifted in mathematical and scientific talents. We want to increase the flow of the extraordinarily talented into the greater society in a manner which will maximize the use of these talents for the benefit of society.

   A subsidiary goal is that IMSA will serve as a laboratory for the testing and dissemination of innovative techniques in math/science education and as a resource for the secondary school science teachers in Illinois.

COMMENT: By selecting science and mathematics, we mean no comment on the relative virtues of gifted-in-science vs gifted-in-arts and humanities. On the contrary, we tend to assume the special schools for the arts are valuable and also needed. Neither do we believe that only the gifted require special attention to the neglect of the other 99% of the school population. Our statement is that in the overall context of education in our society, the IMSA is a valuable and
cost-effective instrument.

2. Our **specifications** are that we will accept qualified students who are normally expected to enter the sophomore year in high school and, in three years of residence, graduate them ordinarily into the sophomore year of university. We will endeavor to identify students in the upper few percent of the student population throughout the state, i.e., those students recognized by specialists in their field as "gifted". Within this category, we will try to approximately replicate the demographic and ethnic population of the State of Illinois.

**COMMENT:** The recognition of giftedness at an early age is not easy. Many criteria will have to be examined since giftedness is not always manifest by grades or examinations. It is well known that even among those officially labelled as gifted, there is an enormous diversity of talents and preparations. Thus we must be flexible in the admission criteria, guided only by whether or not the youngster will be able to cope with the work. The concept of "remedial calculus" may not be too far from describing the burden of coping with the diversity of talents. For the same reason, the course work in the Academy must be rich enough so that the better among the gifted may well qualify for admission to the junior year in the university.

The concept of bridging the last year of high school and the first year of college solves several problems faced by
gifted students. One is known as "senior slump", the other is the premature cultural shock of students arriving too young in the collegiate environment.

3. By philosophy we mean the design of curricula, staff, educational strategy and environment which we believe will create an institution appropriate to the mission. We believe that these designs will be evolutionary and that the purpose of this philosophy is to guide this evolution, which must be carried out by the staff in its own time and out of its own experience. Here we would encourage experimentation and innovation but only where these have educational benefits. The use of seminars, mentors, self-guided study, independent research, novel course hours and schedules, and as yet undreamed-of strategies, may completely replace the standard lecture technique but we do not know this and can only encourage and monitor the imaginative approaches which will be devised in dealing with these students.

A strong component of our philosophical guidance is adherence to the liberal arts tradition. Scientists must function in a complex world and an early appreciation of this will be enormously valuable to our young scholars. Thus we expect to be strong in the language arts, in history, in literature, creative arts and in communication skills. Although the advance of science and mathematics are value-free activities, the applications of these disciplines have vast implications for society. The study of humanities adds wisdom
to knowledge and this blend is sorely needed in modern society. Some exposure to the study of ethics and cultural history are important ingredients in the make-up of an educated scientist or engineer.

In all of this it is our philosophy to seek to blend the humanities and the sciences so as to illuminate the unity of knowledge. This can only happen if members of the teaching staff have the time to communicate with one another. The intellectual growth of the teachers becomes a corollary requirement of IMSA.

There is a special obligation to expose these students to the outside community. Too soon they will be cloistered in academic graduate schools, often too occupied to see more than headlines and the ten o'clock news. Weekend community work of impressive variety can be employed to instill a sense of the "outside world". Following these ideas we believe that our young scholars would benefit from association with students of different cultures. For this reason we will seek heterogenous make-up from within Illinois and reserve about 10% of the admission for students from out-of-state and out-of-nation. We would find it most instructive if our Illinois students can boast of having studied with children from Brazil, France, Nigeria, India and China, for example.

We expect the core teaching staff to be supplemented by teachers on sabbatical from universities, industrial research laboratories or even retired Nobel Laureates. Exposure of our
students to the best minds in the world should be an important aspect of the IMSA experience. For these and many other reasons, we believe in forging cooperative links with all the educational constituencies within reach. At IMSA, the rich collection of research laboratories, colleges, and universities make this emminently practicable.

If we do things right, it is bound to happen that among our graduates there will be numbered scientists, engineers, architects, and even those who go on to earn degrees in law and letters. The majority of these graduates are certain to contribute to the creative spirit in our scientific and technological institutions and industries. There are likely to be those few who create new intellectual worlds, cure some dread human ailment or in some other way to influence every human being on our planet. Our philosophy will be to treat our charges as if each one is capable of this extraordinary achievement. The production of only one such graduate will make the effort and expense of the school for its entire duration, worthwhile.

Leon Lederman
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