

THE PROGRAM TO ASSIST GIFTED STUDENTS IN MATHEMATICS AND SCIENCE IN TAIWAN, ROC

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ABSTRACT

Since 1982, this program was set up by the Ministry of Education. According to this program the qualified students in grade 9 and 12 can enter to the higher level of schools by the screening activities in stead of the entrance examination. The students in grades 8 and 11 can attend the entrance examination one year earlier to their classmates. The limitation for grade 12 students is that they should enter math and natural science departments. There are fellowships available for such students to study in the university.

The follow-up study using questionnaires after these students finished the first year's study in the higher level schools had been done. The findings are: 1. Their academic records are pretty good. 2. They are adjusting very well in the higher level schools. 3. They should be of counseling and tutoring by the higher level schools.

The challenges of the success of this program are: 1. How to select the right persons, who are both worthy of and benefit from the assistance of this program. 2. How to implement the counseling and tutoring system in the higher level schools.

The science-gifted students are the valuable potential man power to the economic development in our country. AS science educators, we are more concern about how science-gifted students be identified and be fostered to develop their potentials.

According to the current school system (Fig 1) in the Republic of China, there is a nationwide university/college entrance examination for senior high school graduates, and the local senior-high entrance examination for junior high school graduates. Sum of the test scores of various subjects in the entrance examination is used to discriminate the passing or failing in the examination. It does not reveal a student's potential for science.

The program to assist gifted students in mathematics and science to attain a higher level of schools was set up in November 1982 by the Ministry of Education. It has been implemented for five academic years.

The program was divided in two categories:

1. The qualified students in grade 9 (the third year of junior high school) and grade 12 (the third year of senior high school) can enter to the higher level of schools by some screening activities instead of the entrance examination.

The students who is in grade 9 or 12 has to be qualified by one of the following three criteria, can be recommended by their schools to this program (Fig 2).

- (1) As his records in mathematics or one of the natural science subjects being in the top 1% in his grade, having above average creativity and IQ, and high motivation to study mathematics and natural science, qualified to be recommended by his teacher.

- (2) He is recommended by the National Science Council, having a good performance in mathematics and science club held in universities which are the Council sponcered.

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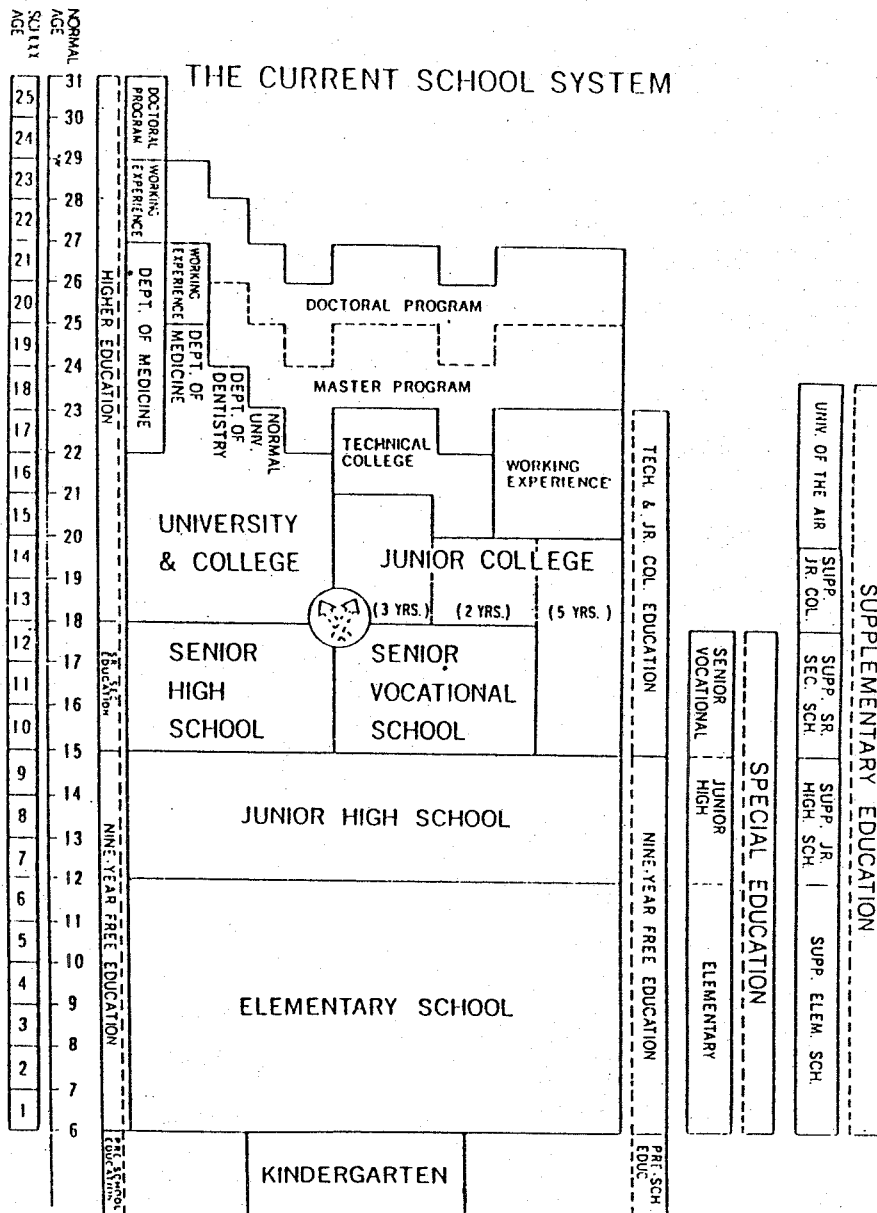


Fig 1

(3) He has excellent record in the competence of mathematics or Science Work Exhibition .

There were a total of 2714 students recommended by their schools in these 5 academic years. The procedures in this program are:

(1) The National IQ test and critical thinking test. The score of both test should be more than 125.

(2) Then students have to attend a one-week Mathematics and Natural Sciences Camp set by Science Education Center, National Taiwan Normal University which sponsored by the Ministry of Education. During the camp, students are working with university professors in the laboratory and evaluated by the same professors.

There were total of 897 students in these 5 years attended the camp, and 656 students pass the screening activity. The records of these student were discussed and evaluated by the Committee which is set by the Ministry of Education. The members of this committee are professors in mathematics and natural sciences, administration officers, and educational psychologists. There were a total of 656 students recommended by this committee to the higher level schools they wish to enter. The limitation for grade 12 students is that they should enter Department of Mathematics or Science. There are fellowships made available by the Ministry of Education for such students to study basic science in the university.

2. The qualified students in grade 8 (the second year of junior-high school) and grade 11 (the second year of senior-high school) can attend the entrance examination of the higher level of schools one year earlier to their classmates. The criteria of qualified students of grade 8 and 11 are same with grade 9 and 12 as it described above, but their records of other subjects should be pretty good too, because they will normally compete with 9th and 12th graders in entrance examination of higher schools.

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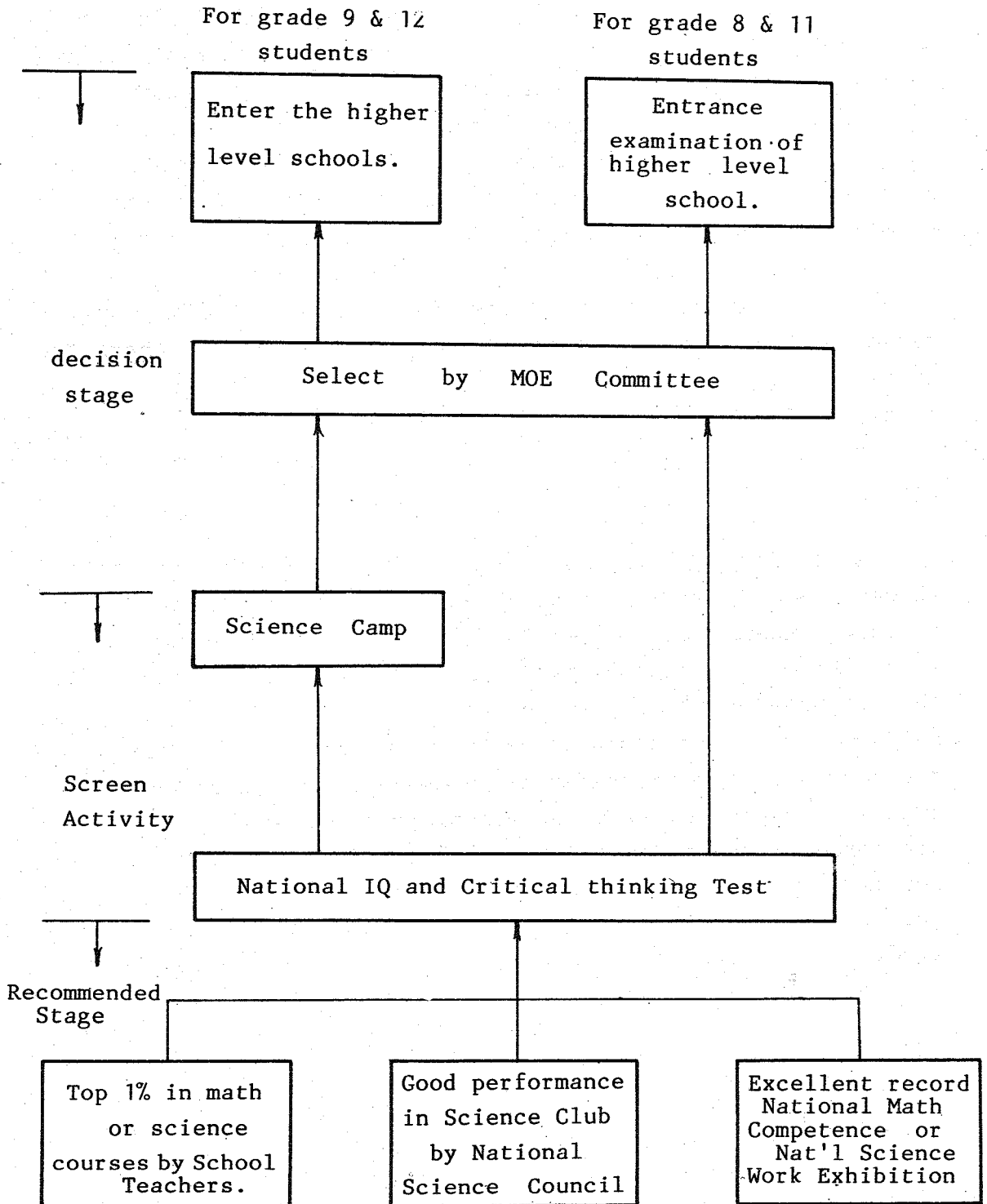


Fig 2

There were a total of 2067 students recommended by their schools within this 5 years. After national IQ and critical thinking tests, 407 students were selected by the committee, who could attend the entrance examination of higher schools. But only two tyird of these students really attended the entrance examination. Most of them could pass the entrance examination and enter a higher level of school to study.

Due to their scores in the entrance examination, only a few could be allocated to the schools they desired. Therefore, there are only a total of 56 students of grade 8 and 11 going to to the higher level schools within recent 4 academic years. The 5th year atudents have not attend the entrance examination yet.

Accordint to our follow-up study, we found that gifted students who entered the present level of school through the entrance examination after finishing grade two studies in a lower level of school had excellent academic achievement. They adjusted very well in the higher level schools. More than half of the students are in the top three in their class. On the other hand, the academic achievement of the students who entered the present level of schooling by screening activities was normal distributed. But, there performance in mathematics and natural sciences were very satisfactorily. The term of "gifted student" was a pressure for some students in their study. Since each student had unique needs, the individualized guidance will be established.