

**BUILDING MATHEMATICAL AND SCIENTIFIC TALENT
IN THE BMENA REGION**

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Presentation by

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I want to thank the organizers for this invitation and for allowing me to talk about the subject of this meeting: the talent search, the talent identification. I am speaking to you as the leader of the Tunisian team that participates in the International Mathematic Olympiad (IMO). The leader is the person who goes to the IMO, together with six students. In my case, I am at the same time the team leader and a trainer. The Tunisian team has only two trainers: experts who are professors of mathematics at University of November 7. The trainers select the students and, of course, train them. The Tunisian Ministry handles the logistics as the organizer of the process, choosing the period for the training camp and the days for the tests to select participants. We do not have any contacts with secondary schools; the only contact is the selection and the training of the students. As noted in another talk, by Professor Jozsef Pelikan, the IMO represents an important effort to identify talented students. We can compare the IMO to the World Cup in football (soccer). It is the place where talented students exhibit their talents—and they enjoy it. When they participate in this event they are enjoying themselves doing mathematics because they love mathematics. And this space allows them to play. Indeed, the IMO is an event where the students find only one thing: mathematics.

Every participating country has to select talented students for this event. I'd say that, in the IMO, almost 70 percent of a team's success is due to talent and the remaining 30 percent is due to training. The most important thing is the students' talents. The problem for all the participating countries, especially emerging countries like mine, is how we can select the best students out of a large number of students. The strategy used in Tunisia is to allow only the first- and the second-ranked students in each 11th-grade classroom to participate in the different selection tests in order to reduce both the number of students and the cost. However, this strategy has been a failure. It was not successful at all. Our country has participated intermittently in the IMO since 1980 until now and has won a total of one gold medal, three silver medals, and seven bronze medals. The gold medal, which is the best, was won by a student who was recommended for the IMO by his mathematics teacher; the student did not participate in the tests for selection. Because of this, since 1992, the team has won some bronze medals, and this year (2010) we had a silver medal winner and an honorable mention. We participated with only two students, because we changed the selection process.

From our experience, we concluded that the probability of finding talented students of the first ranking in each classroom is very low. Another problem that arises for talented students in my country, and perhaps in the entire world, is that they have a lot of problems with some teachers in their classrooms. Some teachers do not accept the fact that students who are supposed to be in the classroom to learn can be faster and better than they are. They view the situation as one in which the authority of the teacher is pitted against the talent of the student.

Let me share with you what I think are the solutions to these problems for my country. Perhaps I can impart some information that will help some other countries. The best thing to do is to look squarely at the problems that arise and to actively try to find solutions in order to progress. Toward that end, first invite all students at different levels and with different interests to participate in the various competitions for selection. This selection test must not have a high level of knowledge—only elementary mathematics. The choice of the problems in these selection tests is a pertinent subject and can be obtained from invited experts who have a lot of experience in this area. I think that we must have a large participation of all schools and not only the leading ones should be encouraged to participate. Rather, it is my opinion, that it is not only in the best schools that you will find good students, but in the other schools.

Invitations can, for example, be posted on a website or in a journal. Students can be invited to have fun doing elementary mathematics and may discover their talent in the subject. Every country may choose its own strategy and may also create mathematics clubs, near the schools, in which students (when they have two hours or three hours between two lessons) can go to participate. That way, with its direct contact, we will be better able to detect talented students.

The last solution that I propose concerns the teachers. I think that we can organize meetings and conferences to deal with the psychology of students and to discuss ways to change the attitudes and minds of some teachers of talented students. We can try to find a solution about how the teachers interact with gifted students. It is a reality that those who are in constant contact with the students are their teachers. I think it is important to have some kind of organization whose objective is to find talented students and provide them with a lot of scientific activities. Such an organization also will be in direct contact with their teachers and help them communicate with talented students.

I hope that I have presented some new ideas and that these ideas will be adopted in my country. I also hope that they will help other countries.