

Building Mathematical and Scientific Talent in the MENA Region Conference
H. E. Senator Leila Abdul Hamid Sharaf

Let me start by telling you what I am not, to put what I am going to say in context. I am not a teacher or a scientist. I do not have or participate in a project that builds mathematical and scientific talents; but I am interested in education as an agent for development, and that is why I am a member of the Royal Commission to Review the Curriculum and Educational Development in Jordan, and have been a member of the Board of Education for two terms.

I want to begin by thanking AAAS and supporting organizations and individuals: the John Templeton Foundation, the Royal Scientific Society, AMIDEAST, and all the scientists, speakers, and commentators who contributed to this challenging, inspiring, and educational gathering.

We have benefited from the rich array of speakers from different countries and the variety of experiences they shared with us. We learned about the different approaches to nurturing the scientific and mathematical talents of our new generations and, perhaps, how to weave those approaches into their thinking, their outlook, and their lives.

Our new generations should be at the cusp of science and mathematics, not only for what they produce in technology and theoretical knowledge, but also for the power that they have to influence objective, scientific processes of thinking for the development plans we have embarked upon, as applied to all their requirements.

We in the Arab world are still in the preparatory stages of a new Renaissance. It does not help us to keep boasting about a glorious past that contributed to the different fields of knowledge, including science and mathematics. It is time to recapture this hold on those fields of knowledge and make them the basis of the new Renaissance we seek.

I believe that you come to Jordan with this conference at the right time, while we are still groping to try to catch the threads of a new beginning to rise again among great competition.

All this is the good news. But I have some worries I would like to share with you. These worries haunt me always as I look at our educational systems in the Arab world. This may be the right forum in which to express them.

Here are my concerns:

Dr. Eleanor Robson, in her most interesting presentation, said (and I paraphrase) that science is a culture. I would like to expand on what she said and say that science and mathematics are a way of thinking, an attitude of the mind.

I may be expressing a simple matter of fact here when I say that I believe that mathematics, pure science, and the social sciences are interactive in the way they influence our mind. The effects of sciences and mathematics can be greatly affected by the way we present and teach the social sciences. The scientific way of thinking that is needed for science can be greatly dampened by dogmatic, unquestioned beliefs with regard to accepting or even understanding scientific issues, scientific phenomena, or philosophical ideas.

I believe that we should start in early childhood, with the toys we give children that help stimulate thinking and creating or building ideas. As we bring up our children, we should not shut them up when they ask difficult or embarrassing questions. We should not give them unexplained orders to carry out or tell them not to do something without telling them why they shouldn't do it. We should tell them why we don't want them to do something, perhaps by experimenting with them (e.g., letting them feel the heat of a fire from a distance when we tell

them that they should not touch fire or play around it). When they are in school, we should encourage discussion and questions even on the most challenging issues. Sometimes teachers feel challenged and react nervously even if not verbally violent. We should allow and even encourage students to be reasonably skeptical in their research and critical thinking aimed at finding the truth.

If the way to knowledge in the social sciences and humanities is presented to our students as absolute truths that should be retained and not questioned, and if the teacher discourages students from questioning and challenging those “absolute truths” then can we really hope that scientific and mathematical analytical thinking will flourish?

This is a question that I believe we should debate among ourselves, within our culture, openly, seriously, and, if I may add, harshly, if the Renaissance we seek is to benefit from the scientific and mathematical objective, critical, and analytical talent we want to develop and that you have brought into focus with this conference.