
Brazil's Most Innovative Physicists Join Colleagues from Around the World in Morocco

Contributed by Isaura Daniel
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The students at Escola Crescimento (Portuguese for Growth School), in the city of São Luís, in the northern Brazilian state of Maranhão, learn physics while practicing sports. In the court, as one teacher shows students how to shoot a free throw in basketball, another explains the physical foundations of that movement.

Correct positioning of the hand, according to physicist and teacher at Escola Crescimento, Antonio Motta Ferro, determines the force with which the ball is propelled in a given direction. This experience by Escola Crescimento and other schools that are innovating the teaching of physics in Brazil will be presented in Morocco late this year.

The Arab country from North Africa will host the International Conference on Physics Education: Building Careers in Physics, which will count on the presence of more than 40 Brazilian physicists. The meeting will be held in Marrakech from November 11th to 16th.

The Brazilians, as well as professionals in the field from approximately 40 other countries, will present their experiences in physics teaching. Ferro is one of them. To earn a spot at the conference, he had to submit, by the middle of this year, a description of the method applied at Escola Crescimento. The announcement of his selection came in the month of July.

The way Ferro teaches physics fits the proposal of the school in which he works. Escola Crescimento is a private school and follows the constructivist model of education. The model gives priority to the way in which a given student learns, and then leads him to build up his knowledge based on his own reality.

In the physics and basketball program, the process begins at the court, but ends in the laboratory. The students learn the rules of the game and the physical foundations at the court. In the classroom, together they build equations based on the movements. In the laboratory, they check if the equations work when applied to the movements.

In addition to the teacher from Maranhão, also to present experiences are Brazilians such as George Hideyuki Hirata, of Colégio I. L. Peretz, from the state of São Paulo, Rosa Katemari, of the Feira de Santana State University, state of Bahia, Mônica Santos Dahmouche, of the Foundation and Center for Sciences and Distance Learning in Higher Education of the State of Rio de Janeiro and Eduardo Campos Valadares, of Escola Estadual Professor Moraes, from the state of Minas Gerais.

Valadares, for example, will talk about the transformation of public school into innovation centers. Hirata will present an interdisciplinary project in the nuclear energy field, and Mônica will discuss distance education.

Guest speakers include Brazilian physicist Maurício Pietrocola Pinto de Oliveira, of the University of São Paulo (USP). Pietrocola will talk about a project that takes to public schools modern, 20th century knowledge of physics, and not just the classic theories of the 18th and 19th centuries.

The project, which started being developed in 2003, is carried out by the School of Education at USP and by municipal schools, with the aid of the State of São Paulo Research Foundation (Fapesp).

From the Arab world, the conference will have participants from Morocco, Tunisia, Oman, Sudan, United Arab Emirates, Saudi Arabia, Egypt, and Algeria. There will also be representatives of countries such as the United States, France, Malaysia, Philippines, India, Pakistan, Japan, Germany, Italy, Belgium and South Africa.

The meeting is held on an annual basis and is promoted by the International Union of Applied Physics. In Morocco, the conference is organized by the Cadi Ayyad University, from Marrakech, along with the Tunisian Optical Society, the Moroccan Association for Applied Physics, and the Semlalia School of Sciences, from Morocco. In Marrakech, the conference will be held at the Palais du Congress Convention Center.

The main objective of the meeting is to promote exchange of ideas and experiences among physicists from all over the world. Conference attendees usually range from physics teachers to researchers.

Last year, the conference took place in Japan. Professor Ferro was there: in the 2006 meeting, he presented a work on physics teaching coupled with geography.

"One of the participants took the project to apply it in schools in England," says Ferro.

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