

## GREETING ADDRESS

Yutaka Tsujinaka

*Vice president of the University of Tsukuba*

Good morning. I'm Tsujinaka from the University of Tsukuba. At the opening of “APEC–Tsukuba International Conference, Innovative Teaching Mathematics Through Lesson Study II: Focusing on Mathematical thinking”, I would like to give you the opening remarks on behalf of the University of Tsukuba, one of the organizers of this conference.

In April 2004 in Chile, there was the third APEC Education Ministers Meeting, entitled the competence required in the ages to come. As the follow-up of the conference, we have organized this conference to contribute to the one of the major, priority areas of this project, the revitalization of education of science and mathematics. We are hoping to contribute our results of your study in mathematics and arithmetic to it. The foundation of this conference is based on APEC Human Resource Development Working Group, Education Network, Collaborative Studies on Innovations for Teaching and Learning Mathematics in Different Cultures. And because of the successful results of the conference with the same title, that was held in January this year, we have been consigned this project by the government of Japan and Thailand together with the Khon Kaen University.

The University of Tsukuba has been based on the philosophy of the internationally opened university since the establishment of it. we have been accepting students and researchers from around the world and providing international exchange activities, engaged in large collaborative studies. Also working with UNESCO and World Bank and other international organizations and we have established APEC research center to contribute to the activities of APEC. Since the establishment of normal school, in 1872, the University of Tsukuba has had a long tradition of training of the teachers for secondary and high education, and we have been achieving outstanding results in educational study. The lesson study that is attracting attention from around the world has actually derived from the education study since the days of normal school. In the field of arithmetic and mathematics, we were engaged in US–Japan collaborative studies on mathematical problem solving, during the 1980s. Since then, we have been acting as a contact organization to facilitate collaborative studies with various organizations around the world. This is the 4th international conference that we organize since the conference of the International Group for the Psychology of

Mathematics Education in 1993. In the field of educational cooperation hosted by JICA, we have helped the University of the Philippines establish NISMED during 1990s and since then we have been promoting projects in arithmetic and mathematics in 6 Latin American countries including Chile.

As an organization to promote international exchange and education research field, we have established CRICED, Center for Research on International Cooperation in Educational Development. This has been in position as a core center for international educational corporation by the MEXT of the Japanese government, CRICED is the one that is actually organizing this conference. Based on the expertise that we have gained in arithmetic and mathematics education, we are hoping to make contribution to Asia pacific region.

I would like to take this opportunity to thank the MEXT who has proposed and organized this project, this conference, the ministry of education of Thailand, the Khon Kaen University and the JICA, Japan International Cooperation Agency, for all the efforts to help organize this conference. I hope that there will be a productive discussion among the representatives from the 17 countries and regions around the world. Thank you for your attention.

## GREETING ADDRESS

Yukitsugu Ono

*Deputy Director for International Affairs Division, Minister's Secretariat, of the Ministry of Education, Culture, Sports, Science and Technology (MEXT)*

Good morning, ladies and gentlemen. I'm Ono from MEXT, Ministry of Education, Culture, Sports Science and Technology. On the opening of the “Innovative Teaching Mathematics Through Lesson Study”, I would like to say a few words on behalf of the ministry.

This is the second time that the symposium is held in Japan after the last one in January this year. This symposium has been organized under the strong partnership between the University of Tsukuba and the Khon Kaen University in Thailand. I understand that the seminars held in Japan and in Thailand have been producing great results. By continuing this seminar, I understand that the network of experts in the APEC regions has been expanding.

Mathematics is the theme of today's symposium. Mathematical thinking is the basis for various types of thinking, and by learning mathematics students can learn the logical and rational mode of thinking. Also mathematics has a very wide range of applications including physics, statistics and economics. And in these various different fields mathematical thinking is employed. Also if you look at the curriculums in various countries, in any country you see, mathematics is taught from very young age. That is because all countries recognize the importance of mathematics. Now, mathematics compared with other subjects like history or national language, is less impacted by the respective countries' cultures or languages and it's relatively easier to have an objective comparison among countries. There is the Mathematics Olympics being held, and the high school students from many countries participate and compete. That is one indication that mathematics is a subject where international comparison is relatively easy. So this is also the area where best practices can be easily shared as well. So I hope that the participants here actively take part in the discussions and take home the outcome of achievement of this symposium and deploy it in the everyday practice.

In the opening or organizing this symposium, I would like to thank all the parties who have cooperated, the Thailand government, the Khon Kaen University, and the JICA who have provided us with the venue, and I'd like to thank the people at the University of Tsukuba for the efforts, and I hope that you would be able to create the fruitful results at this symposium. Thank you very much.

## GREETING ADDRESS

Shinichi Ishihara

*Team Director, Basic Education Team II, Group I (Basic Education), Human Development Department, the Japan International Cooperation Agency (JICA)*

Good morning. It is my great pleasure to be here with you and say few words on behalf of the Japan International Corporation Agency, JICA. Firstly, let me congratulate the University of Tsukuba and organizing committee on having Tsukuba–APEC international conference. It could be said that “Innovative Teaching Mathematics Through Lesson Study” is timely and critical theme in improving the quality of education.

JICA actively supports advocating countries to improve the quality of education. JICA has a priority on improving the quality of teachers especially on mathematics and science by combining various methods including developing teaching guides, involving school management system, curriculums, textbooks and so on. There are three major approaches that JICA has commonly applied to improve the quality of education. The first one is to introduce the learner centered approach that engage learners in practical activities and encourage them to think and solve problems by themselves. The second one is to equip teachers with skills and knowledge of lesson planning. The third one is to introduce lesson study which is widely used in Japan to improve the quality of lesson as the collaborative actions by teachers. I think that the lesson study is one of the major topics in the series of this conference.

The technical cooperation project in mathematics and science education starting in 1994 in the Philippines has dramatically increased numbers, covering 27 countries in the world. We are now reviewing past our activities for the more effective cooperation supported by advisers. Associate professor Masami Isoda is one of the advisers as an expert of mathematics. We expect that universities and research institutions can play a vital role in conducting the research on lesson study as a possible strategy to enhance the quality of education in the world. I believe knowledge in mathematics and science in particular is essential for ensuring tens of millions of children to fulfill their individual potentials. In the sense, we appreciate the efforts and initiatives of the organizing committees' members organizing such a significant conference.

Finally, through this conference I expect you will have a fruitful discussion and strengthen network and friendship among the APEC members economies participant for exciting classroom for all children. Thank you very much.

## GREETING ADDRESS

Shizumi Shimizu

*Vice President of the Japan Society of Mathematics Education*

Good morning, ladies and gentlemen. Thank you for the introduction. I'm Shimizu, Japan Society of Mathematical Education. On behalf of the society, I'd like to congratulate you on holding this symposium. Also I'm in charge of this Tokyo session of the program and I want to thank you for your cooperation.

On behalf of the Japanese Society of Mathematical Education, it was explained earlier that the University of Tsukuba was started in 1872 as a school for teachers. Since then, for about 140 years, they have worked in mathematical education. Our Japan Society of Mathematics Education was established 90 years ago. And it's very delightful that this kind of session about mathematical thinking has been attended by large number of people. About 50 years ago, we have started studying this issue of mathematical thinking and that kind of activity has continued.

Now many of you who are here are from countries where mathematical education has continued even longer than in Japan. With efforts of teachers in Japan, finally we have caught up and were able to show you some achievements in our research. Yesterday we were able to show you the demonstration of classrooms and day after tomorrow we are going to Sapporo and discuss further about these lesson studies. We would be very eager to hear your comments about our mathematical education so that we can work together to enhance the quality of mathematical education in all economies here. We are very pleased as a society to support this project.

As the organizer of this Tokyo session and in starting and managing this project, I'd like to thank the Thailand government and the Khon Kaen University, and the University of Tsukuba for their very strong support. Also MEXT and JICA have also been supporters. With all their supports, we are able to grow this kind of project. Since I'm organizing this event, there might be some errors or insufficiencies but I hope you'll bear with them. Thank you very much for your attention.