

# **APEC - Tsukuba International Conference on Innovative Teaching Mathematics through Lesson Study**

**January 14 – January 20<sup>1</sup>, 2006**

**Tokyo, JAPAN**

**A conference on the APEC project:**

**“A collaborative study on innovations for teaching and learning mathematics in different cultures among the APEC Member Economies”**

## **General Introduction**

At the third APEC Education Ministerial Meeting held on 29-30 April 2004 in Santiago, the ministers defined the four priority areas for future network activities. “Stimulating Learning in Mathematics and Science” is one of the four priority areas. Based on this priority, the APEC project “A Collaborative study on innovations for teaching and learning mathematics in different cultures among the APEC Member Economies” was approved by APEC Member Economies in August 2005. The project is managed by the Center for Research in Mathematics Education (CRME) in Khon Kaen University and the Center for Research on International Cooperation in Educational Development (CRICED) in University of Tsukuba.

The project aims at: 1) to collaboratively develop innovations on teaching and learning mathematics in different cultures of the APEC Member Economies, and 2) to develop collaborative framework involving mathematics education among the APEC Member Economies. For these aims, the project focuses on the good practices in school classroom and ways of professional development such as the Lesson Study in each Member Economies. As the goal of project, we would like to publish the report (or book) with CD-ROMs including good teaching practices of participated economies and models of good practices which enable to use for the innovation of mathematics education in APEC economies and the world.

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<sup>1</sup> January 15: Educational Development Meeting for future planning,  
January 16- January 20: APEC conference.

In order to achieve the goal of the project, we set two meetings within the four phases of the project:

**Phase I**, open symposium and closed workshop among key mathematics educators from the cosponsoring APEC Member Economies hosted by Center for Research on International Cooperation for Educational Development, University of Tsukuba, Japan will be organized in order to develop a research proposal and collaborative framework for the implementation of innovation scheme in teaching and learning mathematics (January 2006).

**Phase II**, each cosponsoring APEC Economy will develop some examples based on the framework (February-March 2006).

**Phase III**, the International Symposium will be organized in order to share and reflect on each Economy's research results and best practice. The Symposium will be hosted by Center for Research in Mathematics Education (CRME), Faculty of Education, Khon Kaen University, Thailand (May 2006).

**Phase IV**, The product for innovation of mathematics education will be developed. (July, 2006)

The project itself is carried out by the people invited in the two meetings at Phase I and Phase III. At the same time, to open the ideas for good practices to everyone in each society, the open symposium will be set in each meeting. We are expecting to invite same people in the both meetings. Depending on the restriction of the grant, we are expecting to invite people from the following countries: USA, Japan, Korea, Australia, Chili, China, Hong Kong, Vietnam, Thailand, Philippines, Indonesia, Malaysia and Singapore. At the same time, we have been making effort to invite more people from other APEC economies. Participating of matheducators who have wishes to come to self fund will be acceptable.

The foci of the two meetings are to share the ideas of good practices from participants and structuring, developing and reviewing the product with VTR for teacher education and reform movement in Mathematics Education.

### **Ways of Publications**

We develop our results through first and second meeting. At first meeting, participants present the discussion paper with some examples. At the end of first meeting, we would like to set editorial board, the clear format and structure of final papers with VTR. At second meeting in Thailand, participants are expecting to present papers with VTR based on the format and structure. After the discussion in Thailand meeting, we need to

revise papers with VTR.

We are planning to report following ways. Contributions in the first meeting of Tokyo will be sited on the conference website and published from the Special Issues of Tsukuba Journal of Educational Study in Mathematics. Contributions in second meeting of Khon Kaen will be sited on the conference website and published from the Special Issues of Journal of Center for Research in Mathematics Education. Finally, we are planning to publish the comprehensive, revised and accepted papers in two meetings as a book with DVD or CD-roms.

### **Tentative Definition of Good Practice in Mathematics**

We use the word of good practice in mathematics classroom as for the reform of each economy's mathematics education. It must not be the same depending on each economy. The ideas of innovation included in good practices might be useful for other economies. Depending on the result of TIMSS video tape study, we knew that there are differences among countries. There are strongly impressed people in the world by distributed VTR tapes. But we know that the study itself did not aim to know what the good practice is and which country should be the model of the mathematics lesson. In each economy there are a lot of researches in classroom and matheducators have been developing the good practices. On the other hands, there are problems that they can not write what, how and why good it is because there are no appropriate scientific ways to illustrate it as understandable among different cultural societies.

This project focus on gathering good practices themselves from participants in each economy and discuss what is good, why it is and how the teacher can develop such a good practice. If we discuss these points, we may know that how each good practice has been done on different cultural setting and through the using these difference as our milers, we revalue our good practice from different perspective and get ideas and models for innovation of our mathematics education and try to use the model to the reform.

Indeed, TIMSS video tape study enables us to know how useful to look at a short part of the lesson and discuss about analyzing of it by each of us such as why it is good and why teacher did such a way. Through the meetings, we would like to talk about each good practice and define how we can express good practice. At the beginning of this project, we tentatively define the good practice in mathematics with following conditions.

- 1) It is visible, recordable in the classroom and can be showed to other people.
- 2) It may be known as a good approach in an economy.

- 3) There is a teacher who is well known by its approach.
- 4) It may be known as useful for the reform of mathematics education.
- 5) Many teachers may have their wish to do the same approach.
- 6) It may be taught in the teacher recurrent education.
- 7) Against its approach, on contrast, there are different/traditional approaches based on different/traditional value.

These conditions are tentative as for imaging what it is. One of the goals of project is to develop visible models of good practices which can be used for teacher educations with DVD or CD-roms in each economies. Thus in the meetings, it is necessary to show and share examples by VTRs.

### **Structure of First Meeting in Tokyo**

The aims of Phase I, first meetings, are constructed with two components to share the ideas for good (or best) practices, know the diversity meanings and approach in different cultures and share the good ideas of ongoing professional development such as the Lesson Study. First component of the meeting is open symposium based on key note lectures and symposium for shearing ideas. Second component is closed workshop to share the good practices in each economy, knowing why it is good and the developing shared frameworks for second meetings in Thailand.

Each participant is expected to present their example of good practice with one hour. Please look at Jan. 17 to 19 in the Schedule.

### **Schedule of APEC - Tsukuba meetings in Tokyo**

Following are schedule of APEC – Tsukuba meetings in Tokyo. Titles of keynote lectures and slots are tentative.

**Jan, 14 SAT.** Arrival

**Jan, 15 SUN.** Open Symposium:

**Improving the Quality of Education for Developing Numeracy on Education for All:  
Planning the International Collaboration for Future**

Keynote lectures:

“Mathematical Literacy for Living from OECD-PISA perspective”

Dr.,Jan de Lange, Director, Freudenthal Institute, Netherlands.

Chair, OECD-PISA technical committee

“Japanese Lesson Study for Developing Best Practice

Professor Akihiko Takahashi, DePaul University,

Professor Shizumi Shimizu, University of Tsukuba

Panel for sharing the ideas of projects: planning international collaboration on Numeracy:

“How have countries adopted the Lesson Study Approach for Educational Development on their JICA Projects ? ”

General view of JICA Projects

Presentation from Countries on JICA Projects in Mathematics

South Africa, Egypt, Bangladesh, Indonesia, & Honduras (tentative)

**Jan, 16 MON.** Open symposium

**“International Symposium on Innovative Teaching Mathematics through Lesson Study”**

The Report from the past APEC Conference

Key note lectures:

“Professional Development through Lesson Study: A Lesson learned from US”

Dr. Catherine C. Lewis, Mills College USA

Lectures:

“Comparative Study of Mathematics Classroom”

Professor Frederick Leung, Hong Kong

“Innovation of mathematics teaching with ICT”

Professor Yasuyuki Iijima, Aichi University of Education, Japan

“Good Practice in Korea”

Professor Kyoungmee Park,

講演 1	「授業の比較研究：その現状と課題」	Frederick Leung 香港
講演 2	「コンピュータを活用した数学授業の革新」	愛知教育大学 飯島康之
講演 3	「韓国におけるよい授業と授業研究」	Park Kyungmee 韓国
講演 4	「オープンエンドアプローチと教員研修」	Maitree Inprasitha タイ
総合討議	「よい授業を作るための研究と方法」	

**Jan. 17 TUE.** Second day of APEC conference:

*From Jan 17 to Jan 20. APEC workshop within invited participants*

**“International workshop on Innovative Teaching Mathematics through Lesson Study”**

Morning session;

School visit: Attached Elementary School, University of Tsukuba.

Afternoon session;

Presentation from four economies

\*One hour presentation (40 minutes talk and 20 minutes discussion) by the representative from each economy. Each participant presents the example of good practice. For explaining what is good. It is necessary to focus on the problem should be reform. Discussion may be focused on the target of reform, explanation of hidden cultural and sharing the ideas for the innovative approach including in it.

**Jan. 18 WED.** Third day of APEC conference

Morning session;

School visit: Attached Junior and Senior High School, University of Tsukuba.

Afternoon session;

Presentation from four economies

One hour presentation (40 minutes talk and 20 minutes discussion) by each economy.

**Jan. 19 THU.** Fourth day of APEC conference

Morning session;

Presentation from four economies

One hour presentation (40 minutes talk and 20 minutes discussion) by each economy.

Letter Afternoon;

Discussions about good practices and the formats for final products.

Short Evening Excursion.

**Jan. 20 FRI.** Fifth day of APEC conference

Morning session

Sharing ideas for Phase II and conference in Thailand

“Key ideas for developing innovative teaching methods”

(Conference will be closed at Noon)

### **Venues of APEC - Tsukuba Conference in Tokyo**

The meetings will be held following places:

Jan 15-16: International Conference Auditorium

JICA INSTITUTE FOR INTERNATIONAL COOPERATION

<http://www.jica.go.jp/english/contact/ific/index.html>

Jan 17-20: Attached Schools, University of Tsukuba at Tokyo

<http://www.gakko.otsuka.tsukuba.ac.jp/map.jpg>

and Meeting Rooms:

JICA INSTITUTE FOR INTERNATIONAL COOPERATION

We are planning to set your accommodation at the same building in Tokyo.

## Informations for Participants at First Meeting in Tokyo.

### Format of the paper for Tokyo conference

Followings are the expecting contents of papers for first meeting:

- Description of Good Practices
- Why we can say it as good practices.
- What kind of reform is expected by such kinds of practices.

If necessary:

please describe the setting in curriculum standard for explaining why it is good.

please explain it by the technical term of mother language as well as English meanings of it.

please explain it with relation to the world mathematics education research movement.

Please write the paper with PME format by Adobe pdf or MS word.

- 8 pages including pictures of practice and references. You can see any papers of PME on ERIC by the key words "Psychology of Mathematics Education".
- You do not necessary to imagine the PME style research paper for reporting the good lesson practice. If necessary, you may add many pages with the appendix for describing details of the lesson.

Additionally, when your presentation at conference, please add VTR or the data file of movie within 10 minutes for introducing a good practice. It may be necessary that VTR is edited with captions in English. It is helpful if there is appendix which explains the good lesson practice. The video more than 10 minutes is not appropriate to understand because English is the second language for most of participants.

### Important Date

APEC office is in Singapore. **Your travel fee will be send from APEC office and it takes some months. For sending you fee safely, we recommend you to set the travel ticket as soon as possible** and keep track following date.

**Oct. 31:** Fixing invited participants, schedule and asking necessary information for invitation.

**Nov. 5:** Setting the web site, sending posters and flyers. **Getting necessary information from invited participants such as airplane ticket** for refunding.

**Dec. 31: Dead line of the paper for the conference:** The papers should be submitted via e-mail.

Jan. 6: The papers could be seen on the web site.

Jan. 14: Your Arrival. Please bring VTR.

Jan. 15 – 20: APEC-Tsukuba conference in Tokyo.

March 31: The papers on the conference are published through the special issue of Tsukuba Journal of Educational Study in Mathematics.

### **List of Correspondence of the Conference**

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