

Information for Workshop in APEC specialist session from January 17 to 20.

APEC-Tsukuba meeting focus on Innovation of mathematics education through the lesson study. Followings, focused ideas and ways of presentation are described.

### **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 (or influenced) in the teacher education or 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.

#### Ways of Specialist Workshop, Jan 17 – Jan 20, in APEC-Tsukuba Conference

1. Before the workshop, participants submit their full papers.  
The full papers could be seen on the web site before participation.  
Send the full paper until the end of November, 2005  
Open all full paper to participants before January 8, 2006  
In specialist workshop, each presentation will be scheduled depending on categories.
2. Structure of workshop is categorized by topics depending on their full papers.  
Tentative categories are followings but it is not aimed to orient the contents of papers.
  - A. Lesson Study Project for special theme in mathematics education
  - B. Lesson Study Project for developing Innovative lesson approaches
  - C. Lesson Study Project for teacher education and professional development
  - E. Lesson Study Project for Implementing Curriculum
  - F. Lesson Study Project with ICT
3. Specialist session will be managed by following two ways.
  - a. Lesson Study meetings at attached schools on January 17 and 18 mornings
    - 1) Short explanation of the lessons
    - 2) Lesson observations
    - 3) Discussion about lessons after observations
    - 4) Discussion about what Japanese way of the lesson study is.
  - b. Presentation depending on categories
    - 1) Modulator and presenters are nominated depending on papers  
The role of modulator is refocusing on special topics to be discussed.
    - 2) 30 minutes (or less) presentations including questions and answers

The aim of presentation is sharing ideas on good practices. In presentation, presenter prepares his/her presentation with a short video (10 minutes or less) Presentation must answer what is good, why it is good, and how it is developed. The methodology to show video, the way of presentation, itself is also meaningful for discussing how useful to look at a short part of the lesson for teacher education.

3) Modulator poses the questions and Break

After three or four presentations, the modulator pose questions which are useful for sharing key and meaning full ideas for innovation of mathematics education, knowing difference and developing the ideas for innovation of mathematics education.

4) Discussion in group depending on questions

5) Each group reports in 5 minutes

6) Modulator integrates reports and writes the concluding paper with reporters.

### **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 Adbe 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.