

Teaching Mathematics and Science

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Education for the Future

- Modern world is the world of knowledge-based society
- Key of global competitiveness depends on gain and use of knowledge
- Driving force is quality education
- The key note is the reform of mathematics and science education

Planning for Education Reform

- Quantitative : Consider number of students who do not have educational opportunity
- Qualitative : Curriculum and instruction, teaching and learning method,
- Efficiency : School-based management and participation of community

Why Mathematics and Science

The future society needs member with the ability to learn, analyze, think in a scientific ways, make proper decision and solve problems. This can be accomplished by means of mathematics and science education.

Who should take the courses?

- Students in elementary to high schools
- undergraduate students both in science and in liberal art programs

Mathematics and Science Curricula

- Making decision on concepts
 - Number of concepts
 - when to introduce the concept
 - connection to other concepts , in the same discipline and cross discipline
- Implementing
- Assessing and Revising

High Quality Teaching

Requirement

- Knowledge of a subject matter
- Knowledge of art of teaching
- Knowledge of students

Teaching and Learning Effectively

- Teachers encourage students to learn from reasoning and understanding
- Teachers apply different teaching methods
- Teachers encourage written communications
- Teachers use a variety of technology tools, such as computer simulation, electronic database and internet
- Students have opportunity to

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- question, discuss and organize knowledge
- practice thinking process, analytical and problem solving skills
- observe, collect data, classify and make assumption
- work in groups

Teaching Development

Teachers need

- To understand how important of mathematics and science
- Training in both subject matter and in teaching technique
- Opportunity to learn about children's development of thought
- access to educational materials including assessment tools
- partners and advisors (not supervisors)

Partnerships between Mahidol University and High Schools

We provide

- Advanced Placement Program
- Research training and facilities for both teachers and students
- Science Lecture (about 4 times/year)
- Direct admission for students supported by the Institute of the Promotion of Teaching Science and Technology(IPTST)

Science is Important and Changing

- Teachers teach students how to learn
- Students become lifelong learners

Reference:

- (Thai) National Education Act (1999)
- How People Learn published by the National Research council (Washington, D.C., 2000)