5th ScSMEd 2013
International Conference on Science and Mathematics Education

Empowering the Future Generation through Science & Mathematics Education

11 - 14 November 2013
SEAMEO RECSAM, Penang, Malaysia

In collaboration with:

PROGRAMME & ABSTRACTS
Assessing Pre-kindergarten Performance in Number and Spatial Sense Activities

Jularat Thongaram  
Department of Mathematics,  
Statistics and Computer, Faculty of Science,  
Ubon Ratchathani University, Thailand  
<jularat.mc@gmail.com>

Pairin Suwannasri  
Department of Mathematics,  
Statistics and Computer, Faculty of Science,  
Ubon Ratchathani University, Thailand  
<scpuirisu@ubu.ac.th>

Supot Seebut  
Department of Mathematics,  
Statistics and Computer, Faculty of Science,  
Ubon Ratchathani University, Thailand  
<scsupose@ubu.ac.th>

Building mathematical knowledge in pre-kindergarten students is important in order to help them to successfully learn in higher levels. However, it is found that in common pre-kindergarten schools in Thailand, mathematical learning activities are unrelated to standard curriculum and lack reference to number and spatial senses. This research proposes to develop number sense and spatial sense activities for pre-kindergarten level students and to study the effect of activities to the number sense and spatial sense of students, considered as essential concepts in learning mathematics and applying it in real life. A sample group assigned by purposive sampling consisted of twelve pre-kindergarten students. The results after using activities with pre-kindergarten students were that when students encountered new problem situations related to number and spatial senses, they were able to successfully perform practical tests, were interested and participated in the learning activities. They were very happy to share and talk with their friends while doing these activities.

Keywords: learning activities, number sense, pre-kindergarten learning, spatial sense

Mathematical Problem-Solving Performance of Talented Students in Primary Grades in Thailand

Ratchada Yatra  
Institute for the Promotion of Teaching Science and Technology, Thailand  
<ryatra@ipst.ac.th>

Sujin Suwanna  
Department of Physics, Faculty of Science,  
Mahidol University, Thailand  
<sujin.suw@mahidol.ac.th>

Surat Intasang  
Faculty of Education, Ramkhamhaeng University, Thailand  
<surat.intasang@gmail.com>

We have performed a quantitative and qualitative analysis of the examination results of primary school students in the Science and Mathematics Talent Development (SMTD) Project. We aim to identify students' creativity and misconceptions in mathematics among the high-achieving students. This research is conducted in conjunction with the SMTD examination administered by the Institute for the Promotion of Teaching Science and Technology (IPST). Each year more than 100,000 students nationwide take part in the examination. The mathematics examination consists of two rounds. The first round has 30-40 fill-in-the-answer problems to be completed in two hours. Statistical analysis of the examination results is analyzed to identify weaknesses of students' understanding in each strand of curriculum core (Numbers and Algebra; Measurement and Geometry; and Data Analysis and Probability) as well as geographical dependence students' achievement. Approximately the top 1,000 students are invited to take the second round of the examination, which consists of 10 problem-solving questions. Some selected questions are analyzed and our statistical, quantitative and qualitative results are shared and discussed in details.

Keywords: student-performance; talent; creativity; misconception; primary level.
Mathematics on TV

Surat Intasang
Faculty of Education, Ramkhamhaeng University, Thailand
<surat.intasang@gmail.com>

A significant number of parents, students and even teachers themselves have developed negative attitude towards school mathematics. They cannot make connections between classroom practices and real-world uses of mathematics. Mathematics presented on textbooks and by teachers’ instruction is not interesting enough to attract the learners. One way to connect mathematics to everyone is to develop a mathematics program and broadcast it through national public television. In the past, a few programs were developed and broadcasted on the Thai public television and the author involved in many development processes of such programs. Three demos, five minutes each, of a newly developed “math is all around us” program, hosted by the author, will be partly shared. Collected reactions from the previewers (parents, students and teachers) useful to the program development will be discussed.

Keywords: mathematics on television; attitude towards mathematics; real-life mathematics; out-of-class mathematics

Improving Engineering Students’ Performance in Higher Mathematics Subjects at the University of Eastern Philippines, Catarman, Northern Samar Philippines Through Screening Examination

Benjamin Dy Varela
University of Eastern Philippines
<benjaminsvarela@yahoo.com>

Students’ performance in higher engineering mathematics subjects at the University of Eastern Philippines was very poor from School Year 2003 - 2004 to School Year 2006 - 2007. This resulted in high dropout rate of students and demotivated professors. This scenario prompted the researcher to formulate the screening examination strategy, wherein a retention score is prescribed aside from the passing score. A study was conducted to assess whether said strategy will improve students’ performance in higher engineering mathematics subjects. This study will help second and third year engineering students improve their academic performance. So the researcher, starting School Year 2010 - 2011, reformulated his long examinations into screening examinations. The results revealed that the screening examination strategy increased the passing percentage of students in higher engineering mathematics subjects. The conduct of screening examinations implies that students are afraid to be screened out and so they will study well.

Keywords: Retention Score, Screening Examination, Integral Calculus, Differential Equations