

Math Special Interest Group

PEN-International Supports Mathematics Education Training in Changchun, People's Republic of China (PRC)

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The Postsecondary Education Network International (PEN-International) is an international partnership of colleges and universities serving the needs of deaf and hard of hearing students. The project, funded by a grant from The Nippon Foundation of Japan, is directed by Dr. James J. DeCaro, and is housed at NTID.

On June 23rd and 24th we had the opportunity to provide a two-day PEN-International workshop in The People's Republic of China related to teaching mathematics to deaf students. The workshop, delivered at Changchun University, included participants from that institution, from Beijing Union University, and from Tianjin University of Technology. Participants also came from pre-college programs serving deaf students across the country. Overall, more than 45 participants attended at least some portion of the presentation.

The workshop, entitled *Teaching Mathematics to Deaf College Students: The NTID Model*, focused on teaching mathematics at NTID, using technology in the mathematics classroom, issues related to teaching deaf students, and implications these topics might have for teaching mathematics to deaf students in China.

Because we had limited familiarity with the educational programs in China, and because we expected to encounter cultural differences in the way mathematics education is approached in our two countries, we designed our workshop to be descriptive rather than prescriptive. While we explained what it is we do here in the United States, particularly at NTID, we left it for our hosts to determine the significance and applicability of what we had to say for their own situations.

One focus of the workshop was a discussion of the NTID curriculum, including a description of some of the technical programs we offer, and the fact that we do not use a "one size fits all" approach to the mathematics that is required for those programs. Many of our NTID students are not required to take algebra, for example.

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INTERNATIONAL PERSPECTIVES ON ASSESSMENT FROM ICME-10

Carrie Chiappetta, Anna Flynn, Christopher Kurz, Johnny W. Lott, Mary Moreira, and Linda Wilson

Introduction

The National Science Foundation-funded International Congress on Mathematics Education-10 (ICME-10) Travel Grant included a subgroup on Assessment. This group, chosen by the ICME-10 Advisory Group for the National Council of Teachers of Mathematics (NCTM), consisted of Carrie Chiappetta, Anna Flynn, Christopher Kurz, Johnny W. Lott, Mary Moreira and Linda Wilson and included teachers, mathematics educators,

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We also explained that we are strong proponents of the use of calculators for teaching and learning mathematics. Members of our department have been using Texas Instruments (TI) calculators for years. We believe that such technology can be used to motivate students, to develop and reinforce concepts, to introduce advanced concepts to students with learning gaps, and to make us better teachers. We also provided the web address for obtaining the TI key fonts, which are of real value when creating lessons or assignments for students.

During the workshop participants were provided hands-on experiences with the TI-30X IIS calculator and the TI-83 Plus graphing calculator. In one session we emphasized the functions of the 30X that we believe make it a step above many other scientific calculators, such as the two-line capability of the display, the editing features, the left and right indicator arrows for use with longer expressions, the up/down indicator arrows that allow for viewing of previous screens, and the fraction capabilities. Three different calculator experiences adapted from what we use with NTID students were provided for the TI-83 Plus. The activities involved an introduction to the calculator, storing variables, evaluating expressions, graphing functions, and using statistical plots to generate regression equations.

A pleasant surprise was that, although our participants did not have previous experience with the TI calculators, the technology is available for purchase in China. In fact, PEN-International has made arrangements to purchase Texas Instrument calculators for use with deaf students at Tianjin University of Technology, Beijing Union University and Changchun University.

As you might expect, we needed to use a translator as we presented our workshop. Our PowerPoint presentation was projected in English, but a translated hard copy was provided as a handout to participants, who were able to see each slide in English with the Chinese translation printed below.

The calculator activity sheets that were used throughout the event (and that required participants to be actively engaged) were translated into Chinese so that both the projected and printed versions were in Chinese. Since we were the

authors and the pages were numbered, we knew what was contained on each page of the material, in spite of the fact that our screen displayed Chinese.

The workshop schedule and copies of all the materials and activities we used can be located on the web. The calculator activities are truly representative of what we provide to NTID students, although we believe them to be appropriate for use with high school students, as well. The activities also serve to provide classroom teachers with examples of how we use the TI key fonts and calculator screen captures to prepare our instructional materials. Be aware that each calculator activity PDF is presented in both English and Chinese; the Chinese version is on the odd numbered pages and the English version is on the even pages. The URL is:

http://www.pen.ntid.rit.edu/workshops/CU_Mathw_ksp_04/Wkshp_Resources.htm

While in China we endeavored to be modestly proud of some of the success we have had teaching deaf students, to be candid regarding some of our struggles, and to convey a sense of optimism for deaf students to succeed in mathematics. We expressed pride in the fact that two of our current departmental colleagues are deaf graduates of RIT. We suspected such information might be surprising, since we knew in advance that none of our workshop participants would be deaf. We made it clear that having high expectations for deaf students is not just a reasonable attitude, it is important for fostering student success.

During our visit we learned a great deal about the PEN-International partner universities and the programs they offer. We also learned a bit about pre-college programs for deaf students in China. On the day after our workshop was completed we even had the opportunity to pay a brief visit to a school serving deaf youngsters in the city of Jilin. The visit provided an appropriate ending to a wonderful experience.

Photos taken during the mathematics workshop can be found at:

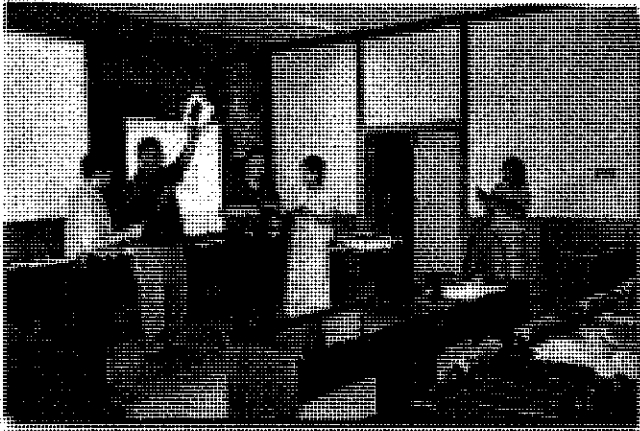
http://www.pen.ntid.rit.edu/newslevel2.php?a=CUS_EC_MathWkshp_2004

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Readers interested in PEN-International can visit the PEN-International website at:
<http://www.pen.ntid.rit.edu/>

KUDOS TO VINCE AND JOAN FOR THEIR
CONTRIBUTIONS TO CHINESE MATHEMATICS
EDUCATION FOR THE DEAF!

THANKS TO PEN-INTERNATIONAL FOR MAKING THIS
HAPPEN — THE DIFFUSION OF MATHEMATICS
EDUCATION KNOWLEDGE!



Vince Daniele shows a picture of TI-83 Graphic Calculator.



Joan Carr explains several features of TI-83 Graphic Calculator

"The only time a question should be asked is when all other possibilities of finding the answer for yourself have been eliminated."

-- Ben Franklin



Compared to Gasoline: Think A Gallon is Expensive?

This makes one think, and also puts things in perspective.

Diet Snapple—16oz for \$1.29

\$10.32 per gallon

Lipton Ice Tea—16oz for \$1.19

\$9.52 per gallon

Gatorade—20oz for \$1.59

\$10.17 per gallon

Ocean Spray—16oz for \$1.25

\$10.00 per gallon

Brake Fluid—12oz for \$3.15

\$33.60 per gallon

Vick's Nyquil—6oz for \$8.35

\$178.13 per gallon

Pepto Bismol—4oz for \$3.85

\$123.20 per gallon

WhiteOut—7oz for \$1.39

\$25.42 per gallon

Scope—1.5oz for \$0.99

\$84.48 per gallon

And this is the REAL KICKER..

Evian water—9oz for \$1.49

\$21.19 per gallon

\$21.19 for water—and the buyers don't know the source.

(hint: read Evian backwards)

So, next time you're at the pump, be glad your car doesn't run on water, Scope, or WhiteOut, or Pepto Bismol or Nyquil.

Just a little humor to help ease the pain of your next trip to the pump.

You might want to consider incorporating this in your proportion or unit price lesson plan. Wise shoppers compare unit prices.