TEDS-M PROGRESS REPORT

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TEDS-M Website (http://teds.educ.msu.edu/)
IEA Teacher Education Study in Mathematics

Overall purpose

- TEDS-M 2008 is designed to inform and improve the policy and practice of mathematics teacher preparation, specifically, how future teachers learn to teach a challenging mathematics curriculum in primary and lower secondary school.

- The first cross-national assessment of learning outcomes in higher education using representative national samples.
TEDS-M pays particular attention to the links between teacher education policies, organization, practices, outcomes and costs.
Level and depth of the mathematics and related teaching knowledge attained by prospective primary and lower secondary teachers

Beliefs and self-reported preparedness to teach
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Organization, practices and cost

- What learning opportunities are available to prospective primary and lower secondary mathematics teachers that allow them to attain such knowledge?
- How are these OTL structured and what is the content taught in teacher education programs?
- What are the costs?
What are the intended and implemented policies that underlie the OTL of mathematics teacher education and what is the impact of these policies?
In short, gather empirical data to address unresolved policy issues regarding the nature, benefits and costs of mathematics teacher education.
The major components of TEDS-M

- National studies of policy, curricula, routes and costs
- Triple survey of TE institutions and programs, their teaching staffs and their students
Instruments have been developed at national, institutional, teacher educator and future teacher level. Including instruments to assess future teacher knowledge of:

- Mathematics content
- Mathematics pedagogy
Reports describing national policy and practices related to assuring quality in teacher education. Country reports will contain three main parts:

- Context and organization of teacher education;
- Quality assurance arrangements and program requirements;
- Funding and reform of teacher education
This area includes analysis of:

- the mathematics K-12 curriculum and
- the teacher preparation curriculum across the countries participating in the study
TEDS-M has earnings data for mathematics oriented professions and teachers in 15 countries for two different years--the 1990s and a recent year.

We are currently collecting institution level data on teacher education costs.
To gather information from each participating institution on:

- the overall program structure,
- the background of the future teachers in the program,
- the program’s selection policies, content, field experience, standards, staffing, and resources
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Educator Questionnaire

To gather information on:

- Teacher educators’ background,
- The opportunities to learn to teach mathematics provided future primary and lower secondary teachers
- Teaching approach
- Links between course content and practicum experience
- Beliefs
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Future Teacher Questionnaire

To gather information on

- Opportunities to learn
- Perceptions of the program
- Attitudes and beliefs (Processes)
- Perceptions of their preparedness to teach
- Mathematical content knowledge
- Pedagogical content knowledge (Outcomes)
For the overall design, see Conceptual Framework document, available on the TEDS-M website:

http://teds.educ.msu.edu/
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<tr>
<th>Botswana</th>
<th>Malaysia</th>
<th>Russia</th>
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<td>Canada</td>
<td>Mexico</td>
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Major Accomplishments
2006-2007
The Field Trial was carried out from February to June, 2007.

The participating countries included Botswana, Chile, Chinese Taipei, Georgia, Germany, Italy, Norway, Oman, Philippines, Poland, Singapore, Spain, Switzerland, and Thailand.
Field trial data were analyzed and presented in the 3rd NRC meeting in Taipei.

Other working meetings:
- Data Management Training (Dec 2006, Hamburg),
- Syllabi Analysis and Scoring Training Workshop (Feb 2007, San Antonio),
- Data Management Training (Sept 2007, Hamburg)
Expanding on the previous discussion, the 3rd NRC Meeting and other meetings have been pivotal in advancing the project. Here are the key points:

- **Expert meetings for questionnaire development**: Close to 10 expert meetings have been held since the project planning began.

- **TEDS-M team communications**: The TEDS-M team holds twice monthly conference calls. They communicate via a website with NRCs and use a server set-up by IEA-DPRC to post instruments, manuals, and other confidential project documents to the NRCs.
TEDS-M sampling referee and IEA-DP_RC have negotiated sampling plans tailored to participating countries to meet IEA standards for national probability samples of Teacher Education institutions, educators and future teachers.

In many cases where the target populations are small, a census will be required.
Finalized the MS Instruments

Reflecting NRC feedback from the Field Trial together with psychometric analysis by the research team:

- Future teacher questionnaire reduced by 1/2
- Educator questionnaire reduced by 1/3
- Institution questionnaire reduced by 1/4
The mathematics and mathematics pedagogy areas have been re-designed to include:

- Stronger emphasis on three of the four original areas in mathematics (number, algebra, and geometry—with less emphasis on data)
- Stronger emphasis on 2 of the 3 original areas in mathematics pedagogy

This re-designed version uses 60 minutes of the FTQ
Future Teacher Questionnaire (FTQ)

- General pedagogy will be provided as a national option. About 2/3 of the countries have opted for this, using primarily the instrument and methods developed by the ISC - MSU.

- Counting the background section (5 minutes), the opportunities to learn sections (15 minutes), and the beliefs section (10 minutes), the FTQ now takes not more than 90 minutes.
Teacher Educator Questionnaire

- Reduced from two field trial instruments to one for mathematics, mathematics pedagogy, and general pedagogy educators

- The questionnaire for the field experience educators will be provided as a national option
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Institution Program Questionnaire

- Includes more detailed description of program content
- Includes more detailed description of field experience
Obtained Supplemental Funding

From NSF to cover unanticipated expenses, resulting from

- the more complex measurement design,
- the complexity of the sample design, and
- the recruitment of more countries
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<th>Event</th>
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<td>Data management seminar</td>
<td>Sept 2007</td>
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<td>Main data collection, earliest start date</td>
<td>Oct 2007</td>
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<tr>
<td>Scoring training seminar</td>
<td>Nov 2007</td>
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<td>2nd International quality control seminar</td>
<td>Jan 2008</td>
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<td>Main data collection, latest end date</td>
<td>May 2008</td>
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<td>Scoring Training, Fribourg, Switzerland</td>
<td>April 2008</td>
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<td>Curriculum workshop, Warsaw, Poland</td>
<td>June 2008</td>
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<td>NRCs submit data to DPC (end date)</td>
<td>Aug 2008</td>
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<td>4th NRC meeting, Bergen, Norway</td>
<td>Sep 2008</td>
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<td>DPC sends datasets to MSU/ACER</td>
<td>Nov 2008</td>
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<td>Final expert/advisory board meeting</td>
<td>Feb 2009</td>
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<td>Release of final reports</td>
<td>Oct 2009</td>
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Organizational Leadership and Expertise

- IEA
- Michigan State University
- Australian Council for Educational R.
- IEA/DP_
- STATISTICS CANADA
- National Research Centers
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TEDS-M organizational chart

MSU
TEDS-M Lead Institution

ACER

IEA/DP_{RC}/SC

JMC

Funding:

IEA

NSF

International Study Centers

Data collection/entry:

NRC

NRC

NRC

NRC

Data processing:

IEA Data Processing Centre

Advisory:

Consultants
Expert Panels
On behalf of the TEDS-M team

Thank you all!!
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