TEDS-M Workshop

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Background
The Teacher Education Study in Mathematics (TEDS-M) focused on how teachers are prepared to teach mathematics in primary and lower secondary school, and studied the variation in the nature and impact of teacher education programs within and across the following countries: Botswana, Canada, Chile, Chinese Taipei, Georgia, Germany, Malaysia, Norway, Oman, the Philippines, Poland, Russia, Singapore, Spain, Switzerland, Thailand, and the USA.
The study collected and analyzed data from representative samples of pre-service teacher education programs, their future primary and secondary teachers, and their teacher educators from participating countries to inform policy and practice in teacher education. The key research questions for the study were:
• What are the policies that support primary and secondary teachers’ achieved level and depth of mathematics and related teaching knowledge?
• What learning opportunities, available to prospective primary and secondary mathematics teachers, allow them to attain such knowledge?
• What are the level and depth of the mathematics and related teaching knowledge attained by prospective primary and secondary teachers at the end of their pre-service teacher education?

The first question was addressed thorough individual case study country reports, questionnaires, and interviews issued by the TEDS-M international study center. The second and third questions were answered via four surveys of nationally representative samples of (1) teacher education institutions and programs; (2) teacher educators; (3) future primary teachers who received preparation to teach mathematics; and (4) future lower secondary teachers also preparing to teach mathematics. The so called “future teacher survey” collected data on elementary and secondary future teacher background, opportunities to learn, beliefs, assessments of knowledge of mathematics content at the university level and at the school level as well as mathematics pedagogical content knowledge. Thus the database is rich and may allow advanced students and interested scholars to engage in a variety of research projects.
Sample: In most countries, TEDS-M implemented a two-stage sampling design. Statistics Canada with the National Research Centers in each country selected samples representative of the national population of “teacher preparation” (TP) institutions that offered education to the target population of future teachers. All programs associated with the mathematics preparation of primary and secondary
future teachers were included in the survey. Then, within these institutions, samples of educators and of future teachers were surveyed. The conceptual framework, design, and methodology for the study have been thoroughly documented in various documents and reports (see Tattoo et al, 2008, Tattoo et al., 2011, forthcoming).

At the end TEDS-M collected survey data and assessment data from the following:

- 15,163 Primary Future Teachers
- 9,389 Secondary Future Teachers

In 500 institutions which included:

- 451 units preparing future primary teachers, and
- 339 units preparing future secondary teachers
- 4837 Teacher Educators

The TEDS-M study is unique in several important respects. It is the first:

- IEA study of higher education and of teacher education;
- Cross-national study of teacher education to gather data from nationally representative probability samples on the knowledge outcomes of teacher education, as well as possible determinants of these outcomes;
- Cross-national study of teacher education to integrate a specific subject matter (mathematics) with generic issues in teacher education policy and practice on a nationally representative basis.

**Planned Workshop Activities**

The goal of this workshop is to introduce and provide initial training for users of the TEDS-M data for their work now and to launch them as successful scholars in the field.

1. Introduce TEDS-M conceptual framework and sampling design. [30 minutes]

   The proposal for this workshop is to immerse doctoral students and interested scholars in the logic, design and methods of TEDS-M to allow them to critically and thoroughly analyze the data with a deep knowledge of the study.

2. Explain instruments and assessments used. [30 minutes]

3. Introduce the structure of the database and share the database with attendees. [30 minutes]

   TEDS-M belongs to a family of IEA studies and as such the database that has been put together by the IEA DPC.

4. Provide copies and introduce the IDB analyzer. [30 minutes]

   The database is unique in that it uses the IDB analyzer (with an SPSS platform) and takes into account the complex structure of the instruments design and of the sample.

5. Practice analysis with the IDB analyzer and TEDS-M database. [60 minutes]

   Give examples of three research questions that can be answered with the data using simple descriptive statistics, correlations and regression.