National Assessments of Educational Achievement Levels in Education

Series Launch

Vincent Greaney

Background

- Jomtien (1990) and Dakar (2000) helped move the debate more towards learning quality

- EFA: Goal Six **recognized and measurable learning outcomes are achieved by all**
Training Program

- To facilitate national teams to carry out national assessments based on their own curricula and which address key national policy issues
- To provide policy makers and others with objective information to help improve educational quality
- To develop national assessment capacity

“Learn by doing”
“Just-in-time” training
South Asia Program
- Bhutan, Cambodia, Sri Lanka, Maldives, Pakistan, Uganda

Africa Program
- Cambodia, Ethiopia, Ghana, Lesotho, Sierra Leone and Kuwait.

- Each country did a national assessment apart from S Leone
- Quality was mixed
Support and Management

- Support for training received from UNICEF, Japan, DFID, Irish Aid and World Bank projects
- HDNED requested a set of materials – originally to cover 12 topics, later revised to 5

Book Series
- Co Editor: Thomas Kellaghan
- Initial Project Manager: Bob Prouty
- Current Project Manager: Marguerite Clarke
- Funding provided initially by the Netherlands BNPP, and Irish Educational Trust Fund (IETF) and to a lesser extent by ACER
- More recently by IETF and the Educational Research Center in Dublin
National Assessment: What is it?

- Designed to describe the achievement of students in a curriculum area at a particular age or grade level.
- Form of national education audit carried out to inform policy makers
- Normally, it involves administration of achievement tests and questionnaires either to a sample or population of students.

Key questions

- How well are students learning?
- Is there evidence of
  - Strengths/weaknesses?
  - Any subgroups who perform poorly?
  - Changes in achievement levels over time?
- What factors are associated with student achievement?
- Are Government standards being met in terms of provision of resources?
Contents

- Key Audience: Senior Policy Makers
  Aim is to inform the policy maker, who should have a clear and justified reason for doing a national assessment

- Also of interest to
  - key stakeholders in educational system
  - donors
Key topics
- What is a national assessment?
- Difference between it and public examinations?
- Value of a national assessment?
- Early decisions
  - Who will do it?
  - What subjects and grades will be assessed?
  - How frequently should NA be carried out?
  - Who will pay for it?
  - How should the results be reported?

International Assessments including Regional Assessment
TIMSS, PIRLS, PISA, SACMEQ, OREALC, PASEC
Advantages
Limitations
Country case studies added to give insights into some different aspects of national assessments
Item Writing and Questionnaire Design

- This was by far the longest training program as it involved a lot of practical work

- Volume 2 covers:

  - Assessment Framework (Master Plan for the entire test)
Item writing

- Different types of items
- Item difficulty
- Practice items
- Item layout
- Item review
- (Suggestion: Use good teachers)

Piloting

(Sobering experience for some item writers)

- Designing
- Printing and esp. proofreading
- Implementing
- Scoring
Selecting test items

- Match the master plan (test items must be valid)
- Items should not be too difficult
- Ensure that distractors are plausible
- Editing items

Producing the final test

- Designing
- Proofreading
Questionnaires and Manuals

- Designing, writing questions, coding
- Matching questionnaires and test items
- Test administration manual

CD

- Examples of good practice
- They are included to familiarize national assessment teams with different types of items and questions and with test and questionnaire layout and format.
- Sources include
  - IEA (TIMSS and PIRLS), OECD (PISA)
  - ACER, ERC, Papua New Guinea, Massachusetts, US (NAEP)
Logistics of running a national assessment

- Overall Design and Planning
  - Planning
- Personnel and Facilities
  - Job descriptions
  - Supplies and equipment
- Preparation for the Test Administration
- Test Administration
  - Including common problems
- Scoring of Tests
- Data Recording
- Includes sample forms

Sampling

- Key concepts
- Learn how to draw
  - a 2-stage random sample with probability proportional to size (pps)
  - Select schools
  - Select pupils within schools
  - Apply weights
  - Calculate standard errors
SPECIAL TOPICS
- NONRESPONSE
- OVERSIZE SCHOOLS
- UNDERSIZE SCHOOLS
- STANDARDS FOR JUDGING THE ADEQUACY OF THE RESPONSE

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Data Cleaning and Management

- Cleaning (Correcting) the data after test administration
- Correcting errors following data entry
- Preparing the data for analysis
- Learn by doing exercises
Typical Exercise

- **Exercise 12: Entering data into the form**
- Open ......\My Solutions\Maths 3a data.mdb (with changes saved from previous exercises).
- Open frm_Yr3 Maths data in the Objects – Forms menu.
- Enter the data from the first student’s test booklet into the form

What the user should see

![Database Form Image]
Approach

- Work on data similar to national assessment data
- Follow specific steps
- Check progress against a screen shot at key stages of the task
- Check the solution in the form of a screen shot
Example of Performance Levels

LEVEL 350: Learn from Specialized Reading Materials

LEVEL 300: Understand Complicated Information

LEVEL 250: Interrelate Ideas and Make Generalizations

LEVEL 200: Demonstrate Partially Developed Skills and Understanding

LEVEL 150: Carry Out Simple, Discrete Reading Tasks (NAEP)
Analyzing results

Measures of Central Tendency
Describing Variability
Comparing the Achievements of Two or More Groups
Identifying High and Low Achievers
Associations between Variables: Correlations
Regression Analysis – An Introduction (Beware of the one variable solution)
Between- and Within-School Variation in Achievement
Presenting Data Using Charts and Graphs

Equity

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<th>P'tile</th>
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<th>Eastern Highlands</th>
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Uses of assessment results and Reporting

- Accountability (including league tables)
- Underuse of results
- Reporting:
  - What should be in the main report
- Other forms of communication such as
  - Summary reports
  - Thematic reports
  - Press releases
Policy making and management

- Identifying the appropriate policy action
- Management
  - Describe achievement, resources
  - Reviewing the system
  - Setting standards
  - Providing resources

Curriculum reform

- How do students’ learning outcomes compare to what is expected?
- Are curriculum expectations reasonable?
- What should be dropped or added?
- (Good idea to have curriculum personnel in at the early stages identifying what is to be assessed)
Teaching

(Good to have teachers and teacher educators involved from the beginning)

- Professional development
- In-set courses (e.g. Uruguay)
- Instructional recommendations to teachers (Uganda poster)
- Teachers’ performance levels on achievement tests

Vietnam: Reading Score Distributions of pupils and teachers (Top 12% students > Bottom 30% teachers)
Teacher Grade 4

- Place-Value Matching Item: Pakistan
- Which of these is the same as 4256?
  A) Four thousand two hundred and fifty-six
  B) Four thousand five hundred and twenty-six
  C) Four thousand two hundred and fifty
  D) Four hundred twenty-five thousand and six

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Future

- Board of the Kuwait Fund for the Advancement of Science has agreed to fund translation into Arabic
- Russian Deputy Minister of Education has requested the material be translated for training purposes
- Volume One has been translated into Portuguese
- Training materials have been translated into Spanish and have been used in LAC
Some lessons learned

Ownership and Commitment

• Who wants it?
• Who needs it?
• Have they considered how they are going to use the results?
• Many policy makers do not care
• Some others will view it as a threat
• WB: TTL commitment is very important if training is being offered
Status issues

• Seniority
  – Culture of not confronting senior officials even when they are wrong
• “Experts”
  – Do not expect to be questioned
  – Some ministries may be unwilling to challenge suggestions made by academics with qualifications in assessment

Attention to detail and timing

• Carelessness is common place in areas such as
  – Sampling
  – Quality control of test administration
  – Data cleaning and management
  – Data filing
  – Document filing
• Results should be available in a reasonable time
Cautions

Be wary of attaching high stakes to test results in the form of sanctions
May result in teachers not cooperating
• Unsound pedagogical practices
  – Overreliance on memory work
  – Narrowing of the curriculum
  – Teaching to the test.
• Malpractice/cheating
Expand

\[(a+b)^2\]

Expand

\[= (a + b)^2\]
\[= (a + b)^2\]
Solve

\[ \frac{\sqrt{2}}{2} = \]

\[ \frac{\sqrt{2}}{2} = \]
Solve

\[ \frac{1}{n} \sin x = ? \]

\[ \frac{1}{n} \sin x = \]

\[ \text{six} = 6 \]
Example: Open-ended item

Find $X$

$x$

3 cm

4 cm

3. Find $x$.

Here it is
Solve

If \( 8x = \infty \)

\[
\begin{align*}
0 \\
\end{align*}
\]

What is \( 5x = \) \( \infty \)

\[
\begin{align*}
0 \\
\end{align*}
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