Connecting the Dots: Data, Screening and Interventions in Education

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Child Functioning and Inclusive Education

...from the perspective of the Washington Group on Disability Statistics

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National Center for Health Statistics, USA and
Washington Group on Disability Statistics
Why do we need data on child functioning and disability?

There are multiple reasons for collecting these data:

• Need to identify the population (screening)
• Need to characterize the population
• Monitoring functioning in the population
• Service provision and planning
• Program evaluation
• Assess equalization of opportunities

The choice of data collection tool should fit the purpose.
How are children with disabilities identified?

The WG, in collaboration with UNICEF, has developed a module on child functioning.

• The UNICEF/WG CFM will identify a child with disability by asking questions about difficulties the child has in carrying out some selected basic, universal activities.
• These are difficulties that would, in a unaccommodating environment, place a child at greater risk than the general population of limitations in participation.
The ICF Model - 2001

Health Condition (disorder/disease)

Body Function & Structure (Impairment)  Activities (Limitation)  Participation (Restriction)

Personal Factors  Environmental Factors

The ICF Model - 2001

Health Condition (disorder/disease)

Body Function & Structure (Impairment)  Activities (Limitation)  Participation (Restriction)

Personal Factors  Environmental Factors

Where do these data come from?

Censuses and surveys: provide population-based estimates of disability

Screening instruments: provide information at the individual level

Administrative records: provides information on program participants and, at times, program environment
Screening:

- can be accomplished using the WG tools in a survey situation or through administrative systems.
- will identify individual children with functional limitations who might need interventions but
  1) will only include limitations the parent/teacher is aware of, as opposed to more objective tests;
  2) only in the domains covered; and
  3) only using relatively gross categories as opposed to the more granular differentiation possible with longer screening batteries or more objective tests, so there will be false positive and false negatives.
What are the consequences of that?

- Ideally, we want to accurately identify *all* those who truly have disability.
- Any data collection tool is prone to error – that means there is a risk of identifying a child as having disability who in fact does not (false positives) – and visa versa.
- With screening, it is desirable to cast a wide net – and it is okay to include false positives but not false negatives.
- That is, we would rather include those falsely with disability than exclude those falsely without.
How are these data used?

Data usage relates back to the original purpose for data collection.

- Censuses and surveys that provide population-based estimates of disability can generate disability prevalence rates and, when combined with other outcome information from the data source, can produce disaggregated results for monitoring and the development of inclusive policies.

- Screening instruments that provide information at the individual level, can identify individuals for targeted interventions.
Depending on where the WG questions are used, they can serve dual purposes.
In population-based surveys
Equalization of Opportunities: Assessing inclusion

UNICEF/WG CFM used to create a disability identifier: those with/without disability.

When analyzed with data on school attendance, can determine whether SDG goal of inclusion in education has been attained.
The ICF Model (2001)

- Health Condition (disorder/disease)
- Body Function & Structure (Impairment)
- Activities (Limitation)
- Participation (Restriction)
- Personal Factors
- Environmental Factors

- WG Short Set
- WG Extended Set
- UNICEF/WG Module on Child Functioning
- UNICEF/WG Module on Inclusive Education

10/10/2019
In administrative systems
The Education Management Information System [EMIS] is an administrative data system used by education establishments to manage the education system.
An EMIS can provide student-related data, for example:
• Capabilities for registering students in courses, documenting grading, transcripts, results of student tests and other assessment scores;
• Building student schedules; and
• Tracking student attendance.

An EMIS can also provide school data, for example:
• Inventory and availability of school materials;
• School facilities; and
• Staffing.
An EMIS should collect data on all children in an educational facility - and could include information on:

- disability status [using the UNICEF/WG CFM],
- students’ needs for assistive technology, learning aids and other accommodations, and
- the school environment [physical and curricular] that may present barriers to learning.

UNICEF and the WG have begun working on a version of the CFM suitable for use by teachers in a classroom setting.
For more information about the WG visit our new website: http://www.washingtongroup-disability.com/

Questions: WG_Secretariat@cdc.gov
Identifying & supporting children with special learning needs

Stephen Luke, EdD

FHI 360/Education Equity Research Initiative
Outline

01 Education Equity Research Initiative

02 Screening Tools for Low- & Middle Income Countries

03 School-based screening: Landscape Analysis

04 Research Pilot: Screening Toolkit
Education Equity Research Initiative

• Launched: March 2016 at CIES, Vancouver in response to the prominence given to equity across the Sustainable Development Goals

• Goal: advance the field of global education towards equity-oriented education policy and programming.

• What We Do: The Education Equity Research Initiative is a collaborative partnership that connects organizations and individuals committed to building stronger evidence and knowledge for improving solutions for equity in and through education.

EducationEquity2030.org
• Goal 17: Collection of **data** and **monitoring** and **accountability** of the SDGs are crucial.

• Enhance capacity-building support to developing countries, which would significantly increase the **availability of high-quality, timely and reliable data** that is also disaggregated by disability.
Disability Task Team

• Year 1 Landscape Analysis, identified disabled populations as one of the most educationally marginalized, with an incredibly scarce amount of data collected and aggregated across contexts.
• Disability Task Team launched in Year 2
• Grown to over 35 member agencies, organizations, & individual consultants
• Research topics:
  • Inclusive Education Policy
  • Screening & Identification
  • Effective Interventions
  • Policy & Financing

EducationEquity2030.org
Screening Tools for Low- and Middle-Income Countries

Rachel Hatch, FHI 360
Carina Omoeva, FHI 360
Stephen Luke, FHI 360

What disability screening tools are available to use in low-resource schools?


Disability Screening Instruments from Low- and Middle-Income Countries

Eileen Dombrowski, RTI International
Rachel Hatch, FHI 360

Disability Screening Instruments Mapping

Eileen Dombrowski, RTI International
Rachel Hatch, FHI 360

School-based Screening Landscape Analysis
Stephen Luke, Sonia Holzman, & Aynur Gul Sahin

• **Objective**: To investigate how schools and education systems are making efforts to screen and identify students with disabilities, the working group builds upon its previous inclusive education policy landscape analysis to examine and compare various approaches used in Ghana, India, Malawi, Pakistan, and South Africa.

Research Questions

The aim of this work is to better understand:

a) **Forms of screening** and **disability domains** assessed, including **RTI** as an approach to identification

b) Articulation of **referral process** for those falling below any established screening thresholds

c) **Nature of supports** provided, e.g.,
   a) Accommodations/Assistive Supports
   b) Curricular Modifications
   c) Supplemental Instruction

d) Systematic **data aggregation** to inform policy and practice

e) **Challenges** – as part of this work we also explore stated challenges to providing necessary supports to students with special needs
   a) Availability of local resources and networks of support
   b) Sufficient level of teacher training to serve a diverse range of students with special learning needs
   c) Financing to support reasonable accommodations/assistive support
Screening & Identification

"My First Day", Ghana
- Vision, hearing, local tools for Intellectual/Learning Disabilities (e.g. puzzles, follow instructions)

"Key Informant Method", India, Malawi, Pakistan
- Community-based assessments/Checklist, parent report

“Learner Development Pathway”, Malawi
- Teacher report, guidance booklet, Washington Group CFM

“Individual Support Plan”, South Africa
- Teacher report, medical records
<table>
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<tr>
<th>Challenges</th>
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<tr>
<td>Attitudes and stigma</td>
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<td>Lack relevant data</td>
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<tr>
<td>Financing</td>
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<tr>
<td>Teacher training</td>
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<td>Effective Interventions</td>
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<td>Tracking of learning outcomes</td>
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<td>Linkages between health and education</td>
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<td>Coordination of efforts</td>
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<td>Regional variance</td>
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Research Pilot: Screening Toolkit
Rachel Hatch, Carina Omoeva, Stephen Luke (FHI 360)

• Provide a tool for direct assessment (as opposed to self/proxy reports)
• Unpack variation within zero scoring students
• Provide a low-cost method for screening for different areas of disability (at least vision, hearing, motor skills, cognitive skills)
• What was available to build on?
  • Review of screening instruments found instruments for testing for some areas (e.g., vision and hearing) but few for others
  • App-based testing in Malawi from Dr. Nicola Pitchford at the University of Nottingham:
Screening toolkit: Modules

- Gross motor skills
- Processing Speed
- EGRA & EGMA
- Vision Screening
- Working memory
- Short-Term Memory
- Teacher survey
- Selective Attention
- WG: Child Functioning module
Toolkit components: Short-term/Working memory tests

- **Short-term memory:** Child repeats progressively difficult sequence *forwards*
- **Working memory:** Child repeats progressively difficult sequence *backwards*
Toolkit components: Selective attention

- Children are asked to cross out dots of a certain color as fast as they can, ignoring dots of any other color.

- Selective attention = seconds to complete Item B – seconds to complete Item A.
Toolkit components: Processing speed

- Children identify the corresponding shape in a set of shapes or indicate that the shape isn’t within that set.
- Children have 2 minutes to get as many items correct as they can.
Conclusions: Did it work?

- No variability
- Very low IRR;
- Low test-retest reliability

Results support findings from other contexts that working memory and processing speed are more predictive of cognitive performance.

- Referrals made to specialists for formal vision assessment
- Did not perform as expected;
  Low reliability
  No validation with age,
  improvement on more difficult items

Encouraging correlations with learning self-assessment

- Vision Screening
- Working memory
- Short-Term Memory
- Child Functioning module
- Selective Attention
- Gross motor skills
- Processing Speed
THANK YOU!

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Three Experiences Screening for Hearing and Vision

**Ethiopia 2016/17** – USAID READ-TA Program
3,725 grade 2 students in 65 schools using hearScreen* and Peek Acuity**

**Philippines 2018** – USAID ACR Asia Regional Program
1,231 students, grade 1-3 from 8 schools using hearScreen,* Peek Acuity** and Washington Group Short Set

**Cambodia 2018** – USAID All Children Reading-Cambodia Program
5,594 pre-school and grade 1 students using Lea Symbols Chart, a noise test and a questionnaire for parents

*Smartphone-based hearing test developed by hearX, a South Africa-based organization
**Mobile software, developed by Peek Vision, a UK-based organization
Prevalence rates based on screening results

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<tr>
<th>Country</th>
<th>Vision</th>
<th>Hearing</th>
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<tbody>
<tr>
<td>Ethiopia</td>
<td>5.4%</td>
<td>4.9%</td>
</tr>
<tr>
<td>Philippines</td>
<td>6.2%</td>
<td>5.3%</td>
</tr>
<tr>
<td>Philippines <em>(Washington Group)</em></td>
<td>12%</td>
<td>12%</td>
</tr>
<tr>
<td>Cambodia <em>(verified after referral)</em></td>
<td>0.4% (0.27%)</td>
<td>0.2% (0.07%)</td>
</tr>
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*Combined categories: cannot do at all, a lot of difficulty and some difficulty
Lessons and Preliminary Reflections

- Technology-mediated screening tools were appropriate in both Ethiopia and Philippines. Adjustments had to be made hearing protocol in Philippines changing referral rates dramatically during the pilot (mostly to account for noisy testing environments).

- Organizing and maintaining an efficient referral chain in Cambodia has required and will continue to require considerable effort.

- Teachers were able to screen consistently with supervision in Ethiopia and Philippines. Less able to screen consistently in Cambodia without supervision.

- These approaches to screening identify enrolled children who may have vision or hearing difficulties. And in Ethiopia, teachers were able to make first order accommodations in their classrooms. In Cambodia, referrals led to provision of glasses and hearing aids where appropriate.

- Question of how to identify and support children who are not enrolled. We are experimenting with a community-based approach in Cambodia to teach sign language to unenrolled children with hearing disabilities.
For more information:

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