ICILS 2018
Project Update

IEA General Assembly - 58, 9–14 October, 2017
Budapest, Hungary

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Contents

1. Overview
   i. Constructs
   ii. Research questions
   iii. Instruments

2. Progress report

3. Timeline and next steps

IEA GA-58, 9–14 October 2017, Budapest, Hungary
Overview
Constructs: CIL - 1

- Computer and information literacy (CIL) refers to an individual’s ability to use computers to investigate, create, communicate and solve problems in order to participate effectively at home, at school, in the workplace and in the community.
Constructs: CIL - 2

• **Strand 1: Understanding computers**
  – Knowing about and understanding computer use

• **Strand 2: Gathering information**
  – Accessing and evaluating information
  – Managing information

• **Strand 3: Producing information**
  – Transforming information
  – Creating information

• **Strand 4: Digital communication**
  – Sharing information
  – Using information responsibly and safely
Constructs: computational thinking

- Computational thinking is the style of thinking used when programming a computer or developing an application for another type of digital device.

- **Strand 1: Conceptualizing problems**
  - Knowing about and understanding computer systems
  - Formulating and analyzing problems
  - Collecting and representing relevant data

- **Strand 2: Operationalizing solutions**
  - Planning and evaluating solutions
  - Developing algorithms, programs and designs
### Summary research questions

<table>
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<tr>
<th>RQ</th>
<th>Computer and information literacy</th>
<th>RQ Computational thinking</th>
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| 1  | How does CIL achievement vary within and across countries?  
   | How has CIL achievement changed between 2013 and 2018? | How does CT achievement vary within and across countries? |
| 2  | What aspects of schools and education systems are related to CIL achievement? | What aspects of schools and education systems are related to CT achievement? |
| 3  | How does student ICT use relate to CIL? | How does student ICT use relate to CT? |
| 4  | How does student background relate to CIL? | How does student background relate to CT? |
| 5  | | How is CIL achievement associated with CT achievement? |
Instruments - 1

• **Student test**
  – CIL: Five 30 minute modules (each student completes two)
  – CT: Two 25 minute modules (each student completes both modules)

• **Student questionnaire**
  – Background information, computer use in and out of school, experience of CIL/CT instruction in class
Instruments - 2

• **Teacher questionnaire**
  – Background information, computer use in teaching and attitudes towards computer use in teaching

• **ICT-Coordinator questionnaire**
  – School resourcing for use of ICT in teaching

• **Principal questionnaire**
  – School characteristics and policies for use of ICT in teaching and learning

• **National Contexts Survey**
  – Education system characteristics, policies and resourcing relating to CIL education
Progress report
Country participation

• Chile, Denmark*, Finland*, France*, Germany*, Italy, Kazakhstan, Korea* (rep. of), Luxembourg*, Moscow (region of the Russian Federation), Portugal*, Uruguay* and the United States of America*.

• *Also participating in Computational Thinking international option
Milestones – 2016/2017

- November 2016*: Field trial instrument release
- May - June, 2017*: Filed trial data collection
  - 14 counties
  - 6656 students
  - 4236 teachers
  - 327 ICT-coordinators
  - 340 principals
- July, 2017: Scoring†, data cleaning and preparation (IEA Hamburg)
- July - August 2017: Analysis of field trial data (ACER)

* Delayed from originally planned schedule due to software issues
† Completed by IEA Hamburg due to software issues
Milestones – 2016/2017

• 11 – 15 September, 2017: 4\textsuperscript{th} meeting of National Research Coordinators (Berlin, Germany)
  – Final review of instruments for main survey
    – Data showed good psychometric properties for CIL and CT instruments
    – Questionnaire instruments performed as predicted
    – Reviews recommended:
      – retention of all 5 CIL and CT test modules (with refinements to selected items and scoring guides)
      – Reduction of length of CT modules from 30 minutes to 25 minutes
      – small reduction in length of student and teacher questionnaire instruments.
  – Plans for main survey instrument preparation and data collection procedures were presented and discussed
    – Including changes to procedures as a result of change in software delivery
Timeline and next steps
## Timeline and next steps

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<tr>
<th>Milestone</th>
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<tr>
<td>Finalization of main survey instruments</td>
<td>September to November 2017</td>
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<td>Main survey instrument release</td>
<td>13 November, 2017</td>
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<td>Main survey field operations and scoring training seminar</td>
<td>20 to 23 November 2017</td>
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<tr>
<td>Main survey preparation (Northern Hemisphere)</td>
<td>November 2017 to March 2018</td>
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<td>Finalization of draft assessment framework</td>
<td>October 2017 to February 2018</td>
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<td>Main survey preparation (Southern Hemisphere)</td>
<td>November 2017 to August 2018</td>
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<tr>
<td>Main survey data collection (Northern Hemisphere)</td>
<td>March to May 2018</td>
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<tr>
<td>Final review and production of assessment framework</td>
<td>February to June 2018</td>
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<td>Main survey data collection (Southern Hemisphere)</td>
<td>September to October 2018</td>
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<td>Data preparation and analysis</td>
<td>June 2018 to March 2019</td>
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<td>Report development and database preparation</td>
<td>December 2018 to October 2019</td>
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<td>NRC Meeting 5 (review of International Report)</td>
<td>June 2019</td>
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<td>International Report release</td>
<td>November 2019</td>
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<tr>
<td>Technical Report release</td>
<td>March 2020</td>
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<td>International Database training</td>
<td>March 2020</td>
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Thank you

Questions?