### Paper Session: Competence assessment

**Chair**
Anouk Zabal *(GESIS - Leibniz Institute for the Social Sciences)*

**Room:** Beethoven-Saal 1

**Presentations**

- **Title:** Reviewing the PIAAC numeracy assessment framework.
  Authors: Diana Coben *(University of Waikato, New Zealand)*, Kees Hoogland *(Mathematics Curriculum Researcher and Developer, The Netherlands Institute for Curriculum Development (SLO), Netherlands)* & Vincent Geiger *(Australian Catholic University, Australia)*

- **Title:** On additional items should be included in PIAAC for comparing long-run academic achievements among persons with disabilities.
  Author: Norihito Sakamoto *(Tokyo University of Science, Japan)*

- **Title:** Standardized nonresponse bias analyses in PIAAC.
  Authors: Tom Krenzke, John Lopdell & Leyla Mohadjer *(WESTAT, USA)*

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**Title: Reviewing the PIAAC numeracy assessment framework.**

**Authors**
Diana Coben *(University of Waikato, New Zealand)*, Kees Hoogland *(Mathematics Curriculum Researcher and Developer, The Netherlands Institute for Curriculum Development (SLO), Netherlands)* & Vincent Geiger *(Australian Catholic University, Australia)*

**Abstract**
This presentation will report on selected aspects of the Review of the Programme for the International Assessment of Adult Competencies (PIAAC) Numeracy Assessment Framework, the Framework that guided the assessment of numeracy in the first cycle of PIAAC. The Review has been undertaken for the OECD by an international expert team brought together by the Australian Council for Educational Research (ACER) in order to enhance the Numeracy Assessment Framework for the second cycle of PIAAC. The presentation will evaluate the extent to which the PIAAC Numeracy Assessment Framework reflects current understandings of adult numeracy and continues to be an appropriate basis for the assessment of adults' capacity to undertake successfully the range of numeracy tasks they will face in their everyday and working lives in the third decade of the 21st century.

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**Title: On additional items should be included in PIAAC for comparing long-run academic achievements among persons with disabilities.**

**Author**
Norihito Sakamoto *(Tokyo University of Science, Japan)*

**Abstract**
Both PIAAC and PISA are important surveys for comparing educational achievements in terms of international, intercultural, and intra-family resource allocation problems. However, there are few trials for evaluating educational policies and systems by using these rich information resources in Japan. This paper proposes and analyzes new methods and items that should be considered in PIAAC in order to promote the concept of evidenced-based policy in Japanese education systems for persons with disabilities. In Japanese primary and secondly education system, educating one child with no disabilities costs about 9 thousand dollars per year. On the other hand, educating one child with some disabilities costs about 100 thousand dollars per year. The difference of educational costs between children with and without disabilities can be explained by the number of teachers and specialists who seem to be needed for providing appropriate educational services. However, there are very few studies that analyze costs and benefits of education policies and no credible finding that shows the effectiveness and efficacy of Japanese education systems for children with special needs. Very few investigations including my studies suggest that some teaching methods such as teaching natural sign language for persons with hearing impairments can improve handicapped students' academic achievements, but all these studies have some problems for lack of full information and data availability in the long-run period. In order to scrutinize and refine the cost-effectiveness analysis of education systems for students with special needs, this paper will consider and propose new questionnaire's items in PIAAC surveys from three points of view -- intra-household resource transfers, peer effects in classes, and school capabilities.

Title: Standardized nonresponse bias analyses in PIAAC.

Authors
Tom Krenzke, John Lopdell & Leyla Mohadjer (WESTAT, USA)

Abstract
With the presence of nonresponse to surveys, it is important to gain an understanding of who the nonrespondents are. If the nonrespondents are similar to respondents, then standard weighting procedures can be used to reduce bias due to nonresponse. In this case, variables correlated with survey outcomes can impact the extent that bias is reduced. If nonrespondents are different from respondents, then the extent of potential bias needs to be investigated, determine if any adjustments can be made, and provide cautionary remarks to data users. The Programme for the International Assessment of Adult Competencies included 33 countries in Rounds 1 and 2, with 5 more countries participating in Round 3. With the goal of minimizing total survey error, and ensuring the comparability of estimates across countries, a standardized set of nonresponse bias analyses was developed. This potpourri of methods includes basic types of analyses, such as computing response rates by subgroups, chi-square tests of independence, and comparisons with official statistics. It also includes more extensive analyses, such as computing correlations among weighting variables and outcome statistics, level of effort analysis, and range of bias assessment. Standard input files are specified to the countries and Westat performs the analysis using its WesNRBA SAS macro. The protocols for the analyses will be provided, along with a presentation of results. Lessons learned are discussed and enhancements are proposed.