

International Perspectives on School Governance: Public Scholarships to Educate Diverse Democracies

German-American Seminar at
the 2016 AERA Annual Meeting

Saturday, April 09, 2016 11:00 AM – 3:30 PM

Marriott Marquis, Level 4, Capitol Room
901 Massachusetts Avenue NW
Washington, D. C.

© April 2016

International Cooperation in Education
German Institute for International
Educational Research - DIPF
Schloßstraße 29
60486 Frankfurt am Main
Phone +49 (0) 69.24708 - 735
Fax +49 (0) 69.24708 - 328
E-Mail: cooperation@dipf.de
<http://www.dipf.de>

Preface

Four years ago, the DIPF office “International Cooperation in Education” (ice) launched a platform for the exchange of ideas among educational researchers from various countries at the annual meeting of the AERA. This framework does not only allow for presenting a variety of research questions and projects. It also sparks the discussion of international aspects within projects, international research contexts and possible international comparisons that can shed light on national specificities as well as on overarching similarities.

Our 2016 AERA seminar investigates international perspectives on school governance. The seminar will open with a panel discussion about different aspects and possible ways of data-driven school improvement, taking into account the relevance of data for teaching and learning (chair Petra Stanat). Henry Levin, Eckhard Klieme, Jack Buckley and Benó Csapó have been invited to provide further input. The panel discussion will be followed by a poster session on innovative research infrastructures in Germany and the U.S., dealing with educational data and large-scale assessment projects. Presentations will be submitted by the Leibniz Institute for Educational Trajectories, the National Center for Education Statistics, the National Center for Research on Evaluation, Standards, and Student Testing, the Centre for International Student Assessment, the Leibniz Education Research Network and the College Board. The seminar will finally offer opportunities for discussing concrete research projects in three workshops covering the fields of (system)monitoring and school leadership (workshop 1, chair Heinrich Mintrop), computer-assisted progress monitoring systems (workshop 2, chair Uwe Maier) and questions of big data and the potentials and boundaries of digitization in educational research (workshop 3, chair Marc Rittberger).

We hope the seminar offers a platform for both discussion and networking and thus supports participants in collaborating internationally. We would like to thank all parties engaged in making this seminar a foundation for future exchange of ideas and joint research activities! In particular, we would like to

thank our co-organizer, the German Center for Research and Innovation and its director, Joann Halpern, for kindly supporting this project, and the Leibniz Association for providing supplemental funding. Last but not least, we would like to mention AERA for its kindness in offering the venue for our event during their annual meeting.

Jean-Paul Reeff, Annika Wilmers, Ellen McKenney

Welcome Remarks from the German Center for Research and Innovation

The American Educational Research Association (AERA) Annual Meeting, the largest conference of scholars in the field of educational research, serves as a platform for educators to share ideas and present research that will help shape tomorrow's education practices and policies.

Within the framework of the AERA Annual Meeting, the German Center for Research and Innovation (GCRI) and the German Institute for International Educational Research (DIPF) are proud to host a symposium entitled "International Perspectives on School Governance." This is the second event our organizations have hosted together and we look forward to continuing this fruitful collaboration. We would like to thank you for participating in this symposium and we look forward to sharing best practices, discussing strategies to improve the educational process, and developing new cooperative relationships.

The German Center for Research and Innovation (GCRI) in New York facilitates transatlantic collaboration by providing a platform for leaders in science, technology and the humanities. One of the ways the GCRI realizes its mission is by connecting North American educational institutions with their German counterparts. By supporting North American higher education organizations they are then able to develop strategies to foster collaborations with Germany in science and industry.

Joann Halpern, Director of the GCRI

Content

Preface	2
Welcome Remarks from the German Center for Research and Innovation	4
Agenda	8
Panel Discussion: Data-Driven School Improvement – The Role of Data for Teaching and Learning <i>Chair: Petra Stanat</i>	13
The Role of Costs in Data-Driven School Improvement <i>Henry M. Levin</i>	14
Assessing Assessments: Lessons from International Surveys <i>Eckhard Klieme</i>	15
Realizing the Promise: Building Education Data Systems that Have a Real Impact <i>Jack Buckley</i>	17
Online Diagnostic Assessment for Improving the Quality of Learning <i>Benó Csapó</i>	18
Workshop 1: (System)Monitoring and School Leadership. Exploring the Potential of an Unknown Relationship <i>Chair: Heinrich Mintrop</i>	20
School Leadership and School Culture. The Role of Caring Cultures <i>Karen Seashore-Louis</i>	22
Linking Monitoring and Educational Leadership. A Multilevel-Governance Approach <i>Stefan Kühne and Stefan Brauckmann</i>	23
The Assessment of Distributed Leadership and its Potential Relationship to Student Achievement <i>Barbara Muslic, Tanja Graf and Harm Kuper</i>	25

Towards a Discursive and Non-Affirmative Framework for Curriculum Studies, Didaktik and Educational Leadership <i>Rose Ylimaki and Michael Uljens</i>	27
Workshop 2: Computer-Assisted Progress Monitoring Systems for Whole Classrooms in Primary and Secondary Education <i>Chair: Uwe Maier</i>	28
The Data Wise Improvement Process: Eight Steps for Using Data Collaboratively to Improve Teaching and Learning <i>Meghan Lockwood</i>	30
Progress Monitoring Across Typical Performing Students Using CAT and CBM in Mathematic <i>Edward Shapiro</i>	31
Computer-Assisted Progress Monitoring of German Grammar Knowledge in the Context of Self-Regulated Learning in Secondary Education <i>Carolin Ramsteck and Uwe Maier</i>	32
quo: An Effective Web-Based Approach to Monitor Student Learning Progress in Reading and Mathematics in Whole Classrooms <i>Birgit Schütze, Karin Hebbecker, Natalie Förster and Elmar Souvignier</i>	34
Monitoring the Social, Motivational, and Self-Regulatory Aspects of Classrooms Across the United States <i>Hunter Gehlbach</i>	36
Workshop 3: Big Data, Little Data – Potentials and Boundaries of Digitization in Educational Research <i>Chair: Marc Rittberger</i>	37
Interaction Logs: A Powerful Tool for Studying Engagement and Learning in a Very Fine-Grained Fashion <i>Ryan Baker</i>	38
How Big Data Presents New Opportunities for Better Research in State and Local Education Offices <i>Michael Hansen</i>	39

Scaling up Connections – Collaboration, Interlinking and Mixing of Qualitative and Quantitative Data in a Semantic Research Environment <i>Christoph Schindler</i>	40
Digitization of Assessments – Between Added Value and Added Problems <i>Heiko Rölke</i>	41
Feature Analysis: Approach to Understand Test Item Infrastructure. <i>Ayesha Madni, Eva Baker and Kilchan Choi</i>	42
Poster Session: Presentations on Research Infrastructures in the Field of Education and Educational Data	
Large-Scale Data Infrastructure at the Leibniz Institute for Educational Trajectories: The National Educational Panel Study in Germany <i>Hans-Günther Roßbach and Jutta von Maurice</i>	45
U.S. Large-Scale Assessments and the National Center for Education Statistics: NAEP and International Assessments <i>Sheila Thompson</i>	46
National Center for Research on Evaluation, Standards, and Student Testing (CRESST) <i>Kilchan Choi, Ayesha Madni and Eva Baker</i>	48
The German Center for International Student Assessment (ZIB): Educational Research with PISA and Beyond <i>Nina Jude</i>	49
Leibniz Education Research Network – LERN <i>Karin Zimmer and Hans-Günther Roßbach</i>	50
Building Data and Process Infrastructure to Effectively Support Large-Scale Assessment Systems <i>Lei Wan and Rosemary Reshetar</i>	51
CVs	53
List of Participants	78

Agenda

11:00 - 12:30	<p>Panel Discussion: Data-Driven School Improvement – The Role of Data for Teaching and Learning</p> <p>Welcome: Joann Halpern (German Center for Research and Innovation, New York)</p> <p>Chair: Petra Stanat (Institute for Educational Quality Improvement, Berlin)</p> <p>Participants:</p> <ul style="list-style-type: none"> • The Role of Costs In Data-Driven School Improvement <i>Henry Levin (Teachers College, Columbia University, New York)</i> • Assessing Assessments: Lessons from International Surveys <i>Eckhard Klieme (German Institute for International Educational Research, Frankfurt)</i> • Realizing the Promise: Building Education Data Systems that Have a Real Impact <i>Jack Buckley (College Board, New York/ Washington)</i> • Online Diagnostic Assessment for Improving the Quality of Learning <i>Benő Csapó (University of Szeged, Institute of Education, Hungary)</i>
12:30 - 1:30	<p>Lunch</p>
12:45 - 1:30	<p>Poster Session: Presentations on Research Infrastructures in the Field of Education and Educational Data</p> <p>Board 1</p> <p>The Large-Scale Data Infrastructure of the Leibniz Institute for Educational Trajectories (LIfBi): The National Educational Panel Study in Germany <i>Jutta von Maurice (LIfBi)</i></p> <p>U.S. Large-scale Assessments and the National Center</p>

	<p>for Education Statistics: NAEP and International Assessments <i>Sheila Thompson (NCES)</i></p> <p>Board 2</p> <p>National Center for Research on Evaluation, Standards, and Student Testing <i>Kilchan Choi (CRESST)</i></p> <p>The German Center for International Student Assessment (ZIB): Educational Research with PISA and beyond <i>Nina Jude (ZIB)</i></p> <p>Board 3</p> <p>Leibniz Education Research Network – LERN <i>Hans-Günther Roßbach (LIFBi and LERN)</i></p> <p>Building Data and Process Infrastructure to Effectively Support Large-Scale Assessment Systems <i>Lei Wan, Rosemary Reshetar (College Board)</i></p>
1:30 – 3:00	Three Parallel Workshops
	<p>Workshop 1: (System)Monitoring and School Leadership – Exploring the Potential of an Unknown Relationship</p> <p>Chair: Heinrich Mintrop (University of California, Berkeley)</p> <p>Participants:</p> <ul style="list-style-type: none"> • School Leadership and School Culture: The Role of Caring Cultures <i>Karen Seashore-Louis (University of Minnesota, Minneapolis)</i> • Linking Monitoring and Educational Leadership – A Multilevel-Governance Approach <i>Stefan Kühne (DIPF, Berlin), Stefan Brauckmann (University of Klagenfurt)</i> • The Assessment of Distributed Leadership and its Potential Relationship to Student Achievement <i>Barbara Muslic, Tanja Graf, Harm Kuper (Freie</i>

	<p><i>Universität Berlin)</i></p> <ul style="list-style-type: none"> • Towards a Discursive and Non-Affirmative Framework for Curriculum Studies, Didaktik and Educational Leadership <i>Rose Ylimaki (University of Arizona), Michael Uljens (Åbo Akademi University, Finland)</i>
	<p>Workshop 2: Computer-Assisted Progress Monitoring Systems for Whole Classrooms in Primary and Secondary Education</p> <p>Chair: Uwe Maier (University of Education Schwäbisch Gmünd)</p> <p>Participants:</p> <ul style="list-style-type: none"> • The Data Wise Improvement Process: Eight Steps for Using Data Collaboratively to Improve Teaching and Learning <i>Meghan Lockwood (Harvard University)</i> • Progress Monitoring Across Typical Performing Students Using CAT and CBM in Mathematic <i>Edward Shapiro (Lehigh University)</i> • quop: An effective Web-Based Approach to Monitor Student Learning Progress in Reading and Mathematics in Whole Classrooms <i>Birgit Schütze, Karin Hebbecker, Natalie Förster, Elmar Souvignier (University of Münster)</i> • Computer-Assisted Progress Monitoring of German Grammar Knowledge in the Context of Self-Regulated Learning in Secondary Classrooms <i>Carolin Ramsteck (University of Education Schwäbisch Gmünd)</i> • Monitoring the Social, Motivational, and Self-Regulatory Aspects of Classrooms Across the United States <i>Hunter Gehlbach (University of California Santa Barbara)</i>

	<p>Workshop 3: Big Data, Little Data – Potentials and Boundaries of Digitization in Educational Research</p> <p>Chair: Marc Rittberger (DIPF, Frankfurt)</p> <p>Participants:</p> <ul style="list-style-type: none"> • Interaction Logs: A Powerful Tool for Studying Engagement and Learning in a Very Fine-Grained Fashion <i>Ryan Baker (Teachers College, Columbia University)</i> • How Big Data Presents New Opportunities for Better Research in State and Local Education Offices <i>Michael Hansen (Brown Center on Education Policy, Brookings)</i> • Scaling up Connections – Collaboration, Interlinking and Mixing of Qualitative and Quantitative Data in a Semantic Research Environment <i>Christoph Schindler (DIPF, Frankfurt)</i> • Digitization of Assessments – Between Added Value and Added Problems <i>Heiko Rölke (DIPF, Frankfurt)</i> • Feature Analysis: “Approach to Understand Test Item Infrastructure.” <i>Ayesha Madni, Eva Baker, Kilchan Choi (CRESST, UCLA, California)</i>
3:00 – 3:30	Wrap-up and closing remarks

Abstracts

Panel Discussion:

Data-Driven School Improvement – The Role of Data for Teaching and Learning

Chair: Petra Stanat

The role of data in school improvement, teaching and learning is becoming increasingly important. Data usage in this field can be divided into three levels: 1) At the system level, data can reveal strengths and weaknesses in educational outcomes. This type of empirical evidence is expected to be useful to policy makers in their decision-making processes. 2) Data can also be used to provide feedback on achievement outcomes at the school and classroom level, and teachers as well as school principals are expected to use this information for improving the respective outcomes. This type of data strategy is also employed to implement policies that aim at changing teaching practice, such as the introduction of educational standards. Such feedback systems at the school and classroom level can be high-stakes or low-stakes and may not only have the desired effects but also undesired side effects. 3) At the student level, data can provide feedback about individual learning processes that teachers are expected to use for planning instructional processes.

The panel will discuss these various roles data play in different school systems in view of the national and international projects and case studies in which the panel members from the United States, Germany, and Hungary are involved. In addition to describing research and developments in this field, the panel will also take into account the increasing role of data in education and, as a result, in possible future fields of research and investigation.

The Role of Costs in Data-Driven School Improvement

Henry M. Levin

In the U.S. there is a strong movement towards evidence-based decisions in education. Indeed, the Institute of Education Sciences of the U.S. Department of Education has sponsored the What Works Clearinghouse (WWC) since 2002 to evaluate the evidence claimed from research studies designed to improve educational outcomes. In general, WWC considers evidence that is based primarily on well-designed experimental and quasi-experimental studies, although it has broadened its criteria in recent years. Interestingly, both WWC and most attempts by researchers to provide causal evidence on reforms are limited to estimates of educational effectiveness of the reform interventions. Costs and cost-effectiveness are not considered, even though schools need to maximize the total effectiveness of their resources by considering which proposed reform will have a maximum effect for the resources that are available. In our reanalysis of WWC results in which we added a rigorous cost analysis for such outcomes as high school completion, we found differences of 600 percent in the cost for obtaining a given number of additional high school completions. This presentation will address the effort at combining appropriate measures of cost with effectiveness results in order to provide results that consider maximizing cost effectiveness of schools rather than just effectiveness results that ignore efficiency in the use of school resources.

Assessing Assessments: Lessons from International Surveys

Eckhard Klieme

International large-scale assessments – in addition to providing indicators for system monitoring – have become a blueprint for national assessment and accountability systems worldwide. Standardized tests and questionnaires are widely promoted by international organizations to be used as core elements of evaluation procedures at the student, classroom/teacher, school or national level. At the same time, many scholars and writers have strongly criticized international surveys for allegedly supporting neo-liberal, market-driven policies in education.

However, it seems unclear whether these tendencies really exist, and what impact they may have on educational policy and practice. Is there a tendency towards more and more assessment-driven policy making in education? If so: does it have a positive or a negative impact on student learning? If not: do traditional pedagogical values persist and resist against outcome-oriented policies? Do countries differ in this regard?

Fortunately, context questionnaires in large-scale assessment programs provide an opportunity to answer these questions empirically. The contribution will present an analysis of systemic change based on multiple waves of PISA. It turns out that an increased use of assessment data by schools to compare their performance with national performance levels is linked to an increase in student achievement. Given that the question asks school principals to report on the use of tests “in your school”, the finding should be interpreted as an effect of internal evaluation.

In order to allow for a more detailed study of student testing, classroom assessment, internal as well as external school evaluation, and accountability in participating countries, DIPF developed a number of new questions for the PISA 2015 School and Student Questionnaires. The underlying

rationale will be presented and problems of measurement across countries will be discussed.

Realizing the Promise: Building Education Data Systems that Have a Real Impact

Jack Buckley

Despite the allure of the idea and widespread promises from technologists and education reformers, the use of student data systems to drive school improvement and effective teaching and learning has generally been disappointing. There are several likely reasons for this, including poor quality data, mismatch between available data and objectives, insufficient testing and development of high-profile solutions, perverse incentives caused by ambitious policy initiatives, and lack of training and support infrastructure in the schools. This presentation examines recent efforts by the College Board, a large education non-profit organization in the United States, to overcome these obstacles through the redesign of a set of secondary school assessments and associated data systems.

Online Diagnostic Assessment for Improving the Quality of Learning

Benó Csapó

Many modern instructional theories (including Piaget's and Vygotsky's ideas and the constructivist approaches in general) assume that the knowledge actually available to students is the most important determinant of the quality of further learning (including the amount of learnable new knowledge, the types of models constructed, depth of understanding, and applicability and transferability of new knowledge).

The most crucial problems of mass education originate in the fact that students differ in terms of their preliminary knowledge; the differences exist in a number of dimensions and change dynamically over time. Therefore, adjusting instruction to the needs of individual students requires information about their current developmental level and their preliminary knowledge.

A number of educational innovations (e.g. personalized systems of instruction, mastery learning and criterion-referenced instruction) are intended to optimize students' learning by assessing preliminary knowledge and adjusting instruction accordingly. By generalizing these intentions, we may conclude that optimizing learning by adjusting instruction to students' individual needs requires frequent and precise student-level feedback (Shute, 2008). Such feedback cannot be provided economically with traditional assessment instruments, but technology offers a relatively inexpensive solution to the problem.

The Center for Research on Learning and Instruction at the University of Szeged has been developing an online assessment system for the first six grades in primary school which can assess students' progress in reading, mathematics and science. The online diagnostic system, the eDia, is a platform that stores item banks, delivers customized tests to schools, stores students' longitudinal data, and provides students and teachers with sophisticated feedback.

To provide students with effective feedback, assessments have to be based on developmentally valid models of learning and correct models of accumulation of knowledge. The theoretical foundations of the item banks organize the content of the assessments into three dimensions in each assessment domain: (1) psychological aspects of learning; (2) transfer and application of knowledge; and (3) curricular content. The system contains over a thousand items per dimension for all nine dimensions.

The next step in the development of the system will be to integrate the diagnostic assessments into the pedagogical processes of the classrooms. This includes visualizing the data customized by the feedback, visualizing the data, customizing the feedback, utilizing cognitive and affective impacts of the frequent feedback, and training the teachers in how to use the system.

Workshop 1: (System)Monitoring and School Leadership. Exploring the Potential of an Unknown Relationship

Chair: Heinrich Mintrop

Over the last 20 years, empirical educational research has become closely associated with the development of individual schools. According to Brauckmann and Kühne (2010), empirical educational research in Germany focuses on the following areas:

- Decentralization or institutional autonomy
- Market and competitive mechanisms or alternative financing options
- External evaluations or institutional accountability mechanisms
- Monitoring of the education system or systemic accountability (mechanisms)

School principals are facing new demands in school management due to their growing autonomy in decision-making, their responsibility for evidence-based school-improvement as well as changing socio-economic and socio-cultural contexts. This is particularly true for strategic management with regard to medium and long term school improvement, in the following areas:

1. Staff management and organization development (e.g., staff selection and professional development)
2. Classrooms and pedagogical innovation (e.g., variations in the organization and implementation of classrooms)
3. administrative and organizational tasks (e.g., internal school budgeting of teaching and learning materials)
4. the “opening” schools (e.g. cooperation with private companies, school networks)

School leaders have to decide about school issues of any kind in accordance with the new governance philosophy. Despite a rapidly growing amount of research and studies on the new educational governance approach in Germany, there is little

empirical data on how this impacts on school leaders. They are supposed to fulfill their leadership and development tasks in new ways being not only more autonomous in decision making but also held accountable for the outcomes. With regard to accountability, school leadership research focuses predominantly on measures of implementing school (self) control, which are aligned with internal (e.g., school programs) and external (e.g., standardized achievement tests) evaluation standards. The introduction of external evaluation instruments (e.g., large-scale assessments) is supposed to ensure evidence-based decision-making by school leaders and improve quality at the individual school level (school monitoring) (see EMSE, 2008; KMK, 2012). The interrelationship between the external decision-makers (education policy, central school administration etc.) and the individual schools is often intransparent. Thus, the question of how individual schools and the entire system can learn from each other remains unanswered. Nonetheless, the use of approaches that focus on a systemic leadership of school leaders need new data-based forms of cooperation between the local, regional, and the state level of educational administration.

The workshop aims at showing how educational monitoring data can support school leaders in strategically realigning their work tasks and adjusting their management. We will also present different ways of how school leaders (can) use data from large-scale assessments (e.g., VERA 8) for the evaluation of their school and for school as well as classroom improvement. For this reason, we will present the assessment (via a questionnaire) and effects of distributed leadership, a leadership approach that is generally acknowledged as effective (see Harris, 2008), on student achievement.

School Leadership and School Culture. The Role of Caring Cultures

Karen Seashore-Louis

This presentation will make an argument for the importance of caring and caring leadership in schools and introduce a model of caring school leadership.

The focus of the presentation will briefly cover a socio-cultural perspective that emphasizes the importance of three levels of leadership: Personal, interpersonal, and organizational. The broader context is the centrality of relationships to the role of school leadership, and within that, the importance of creating caring cultures. Based on empirical work, I will focus on caring for adults and students.

The emphasis will be on looking at school leadership as one of many leadership positions that demand a strong socio-cultural basis for the core work, including:

- Education, particularly recent empirical survey analyses
- Related academic fields and disciplines (e.g., philosophy and ethics, sociology, psychology, organizational sciences)
- Human service and helping occupations (e.g., healthcare, social services, ministry)

The presentation will conclude with a preliminary model of caring school leadership that is based both on empirical work and perspectives from other human service sectors.

Linking Monitoring and Educational Leadership. A Multilevel-Governance Approach

Stefan Kühne and Stefan Brauckmann

A number of authors have agreed on the more or less reasoned assumption that the change of system conditions does not only constitute a key challenge but also a relevant influential factor regarding the development of an education system (cf. Autorengruppe Bildungsberichterstattung 2014, p. 15). Besides general social conditions (e.g. demographics, family structures and living conditions), economic circumstances have been identified in this context (public budget, delimitation of national employment markets, skill requirements of the labor market). Conceptually, this assumption is accounted for by an integration of system-wide context characteristics in framework and effect models, as well as analytically in indicator-based reporting on education.

Generally, authors have pointed out that educational processes and the conditions described above are reciprocally related, yet there is no empirically sound evidence how different variables interact, and which of the system context measures in particular are relevant for the governance and organization of educational institutions. Accordingly, albeit with a few exceptions, evidence is yet scarce regarding the relationship between system conditions and school leadership actions.

Hence, the context is in most cases presented as a control variable and respective sense is increasingly ascertained in different areas of research. So far, however, the various steering levels that play a significant role in managing education – from the classroom, school, and regional to the system level – have hardly been taken into consideration. While system or local features are important prerequisites for school development, institutional and organizational arrangements and outputs likewise affect decision-making in higher-level administration. This leads to the question of how a coherent analytical framework should be designed to provide sound educational monitoring data across different leadership

levels. Based on the growing number of databased approaches to monitor education in Germany at national, state, local and institutional level, this presentation introduces a possible comprehensive reference framework for indicator-based analyses of educational leadership.

The Assessment of Distributed Leadership and its Potential Relationship to Student Achievement

Barbara Muslic, Tanja Graf and Harm Kuper

In Germany, state-wide standard based proficiency tests were implemented about 10 years ago as one instrument of the test-based school reform. These tests aim to improve quality of schools and instruction. Schools are expected to improve or stabilise their performance in the tested subjects based on the test outcomes (KMK, 2010). Moreover, this external test instrument contributes to evidence-based school and classroom improvement and thus ensures quality of the individual schools (school monitoring) (EMSE, 2008; KMK, 2012).

In contrast to other educational systems like the United States, where external tests have a longer tradition to serve public monitoring of schools (Nichols, Glass, & Berliner, 2006), there are no rigorous consequences for German schools that have poor test results (low-stakes testing). Even though the states act independently in terms of most educational issues, over the last years different proficiency tests were introduced to foster the implementation of national educational standards in order to assess the German students competency levels in key school subjects (at school level).

Our investigation is based on research on school leadership efficiency as the relationship between student achievement and school leadership and particularly on the distributed leadership concept. From this perspective, school leadership responsibility is conceptualized according to the organizational responsibility of a school and its teaching staff.

The assumption of an indirect leadership effect on the proficiency development of students and school quality is also supported in the current distributed leadership concept (i.e. Gronn, 2002; Harris, 2004; Spillane et al., 2001). The concept describes mechanisms of shared decision-making in schools as professional organizations and the implementation of responsibility in the organizational and personnel structure of the individual school. Hence, school leadership research

should no longer focus on the principal as an individual person but on the organization-oriented actions within the school (i.e. school leadership). Even though the efficiency of distributed leadership has not yet been sufficiently clarified, this leadership approach is generally acknowledged as effective. Initial studies indicate a positive impact of this leadership style on student achievement (see for an overview Huber, 2008; Bonsen, 2010) and organizational outcomes and development (Harris, 2008).

Within the specific context of standard-based proficiency tests, the distributed leadership approach provides evidence for productive practices of principals in handling students test results. Moreover, school leadership is expected to have an indirect effect on school quality development (e.g. student achievement) by initiating and coordinating measures as well as delegating tasks and responsibilities to other school protagonists (i.e. Harris, 2004). Therefore, it can be seen as a deciding factor of school success.

Against this background, we present the assessment (via a questionnaire) and effects of distributed leadership on student achievement.

Towards a Discursive and Non-Affirmative Framework for Curriculum Studies, Didaktik and Educational Leadership

Rose Ylimaki and Michael Uljens

This presentation will discuss a general theoretical framework for curriculum studies, Didaktik and educational leadership that builds upon strengths and limitations of these traditions, respectively, in Europe and the United States. Methodologically, a meta-theoretical level is used with two guiding core questions: (1) the relation between education and society and (2) the nature of educational influence on the interactive level. On the first question, a nonhierarchical position is defended as it offers a foundation for discursive institutionalism valuable for understanding school work. The second question is handled by three classic education concepts – recognition, summoning to self-activity and *Bildsamkeit*, as these support a non-affirmative view of educational influence for democratic education. We conclude that this theoretical framework allows us to more coherently conceptualise curriculum work, educational leadership and teaching.

Workshop 2: Computer-Assisted Progress Monitoring Systems for Whole Classrooms in Primary and Secondary Education

Chair: Uwe Maier

Meta-analyses show that frequent monitoring of student achievement and performance feedback to students and teachers can have a large impact on subsequent learning processes and achievement gains (e.g. Fuchs & Fuchs, 1986; Bangert-Drowns et al., 1991; Kluger & DeNisi, 1996; Black & Wiliam, 1998). Mastery assessment (Bloom, 1974; Kulik, Kulik & Bangert-Drowns, 1990) and curriculum-based measurement (Deno, 1985; Fuchs 2004) are examples of concepts of progress monitoring that were discussed and evaluated in the last decades. Both concepts build on the idea of formative assessment (Guskey, 2007; Zimmermann & Dibenedetto, 2008) which encompasses three important components: measuring student performance within a teaching unit, feeding back performance data to students and teachers, and using feedback data to inform the next steps in instruction or individualized tutoring.

Besides these commonalities, there are some differences between both concepts. The mastery assessment approach uses frequent, formative assessments to inform students and teachers about mastery of particular learning goals. If a student does not achieve the mastery level in the test (usually 80% correct answers), she or he gets additional materials to rehearse the learning content. Students have to retake the test until they achieve mastery to move on to the next step in the teaching unit. One limitation of the approach is that mastery tests assess isolated skills instead of overall competences. It therefore remains unclear if a student achieves the relevant learning goals at the end of the school year.

In the curriculum-based measurement approach, equivalent parallel tests are administered weekly and used as indicator to assess a broad and relevant competence. For example, reading competence is measured with short tests of oral reading fluency. This leads to some fundamental

difficulties in test construction that were addressed in research (Fuchs, 2004). The weekly parallel tests must be difficult enough to avoid ceiling effects for high achievers, they should also contain easy items to measure progress of low achievers, and the slope of the measures should represent real progress in learning the overall competence. Recent research on curriculum-based measurement also investigated if educators can use the test scores to make adequate instructional decisions.

This workshop discusses research results from recent studies in the fields of mastery assessment and curriculum-based measurement. Although the papers represent different approaches to student progress monitoring, common themes and questions will be discussed in the workshop. One common theme is the idea to use progress monitoring for whole classrooms in general education. Traditionally, curriculum-based measurement projects focused on students with learning disabilities in classrooms with low class sizes. A second question that emerges from the papers is how to harness web-based and mobile e-learning technologies to advance large-scale implementation of progress monitoring systems.

The Data Wise Improvement Process: Eight Steps for Using Data Collaboratively to Improve Teaching and Learning

Meghan Lockwood

Once you have a system in place for gathering and storing data, how can you use it to improve teaching and learning in your team, school, or district? The Data Wise Improvement Process (Boudett, City, & Murnane, Eds., 2013) is a step by step process to guide teams of educators or system-level leaders in using a wide range of data to improve instruction. Throughout the Prepare, Inquire, and Act phases of the process, educators build their data literacy skills and habits of mind to work collaboratively on school improvement.

Progress Monitoring Across Typical Performing Students Using CAT and CBM in Mathematic

Edward Shapiro

We conducted a study to examine the impact of monthly progress monitoring of a CAT and a CBM measure in mathematics. A total of 250 students in third, fourth, and fifth grade were administered the STAR Math (CAT) and AIMSweb (CBM) computation and concepts measures monthly across a 7 month period. Results showed that the strongest predictive outcomes to state assessments occurred for the CAT measure and that patterns of growth across all measures were primarily linear. An important point, however, is that the predictability from progress monitoring did not significantly add to the variance above what was predicted by using a single point of administration prior to the state assessment. Both the feasibility and value of using CAT or CBM measures across large numbers of typically performing students will be discussed.

Computer-Assisted Progress Monitoring of German Grammar Knowledge in the Context of Self-Regulated Learning in Secondary Education

Carolin Ramsteck and Uwe Maier

In Germany, there is a growing need of individualized forms of instruction in highly diverse secondary education. Computer-assisted formative assessment of learning progress in combination with adaptive learning materials proved to be effective (e.g. Topping, Samuels & Paul, 2007; Jia, Chen, Ding & Ruan, 2012; Slavin et al. 2013). However, the majority of formative progress monitoring system measures basic competences with a high level of procedural knowledge such as reading fluency, basic arithmetic, or writing while many learning domains in secondary education can be described as a highly complex network of facets of declarative and procedural knowledge (e.g. grammar knowledge, scientific concepts). It is therefore less feasible to construct short parallel test forms as a valid measure of one overall competence. An alternative approach is mastery assessment which claims to be effective when the learning progression in one domain follows a hierarchy of learning goals with different contents and different degrees of complexity (Bloom, 1974; Guskey, 2007).

The research project focused on basic aspects of German grammar knowledge which contribute to the overall and very complex competence of language awareness. The acquisition of grammar knowledge in German schools is well structured along a hierarchy of learning goals from primary through secondary education. We therefore applied mastery measurement to create short formative tests and additional learning material of German grammar knowledge in five modules on three different levels which mirror progression in the grammar curriculum. The test system was set up in a web-based Moodle course and was implemented in secondary school classrooms (Grade 7 and 8) throughout periods of self-regulated learning. Students had access to the Moodle course

via classroom PCs or tablets. They were allowed to move on to the next learning goal when they were able to solve a high proportion of test items (80%).

The study (n=517 students in 21 classrooms) investigated if the formative tests are a valid measure of learning progress in the domain of basic grammar knowledge, how students used feedback information from the formative tests to select the tutoring materials, and how teachers implemented the formative assessment system. Test scores, use of glossaries and exercise materials were stored in Moodle and were accessible for teachers and researchers. Qualitative data (teacher interviews, student interviews and observation data) were collected during the formative assessment sessions in order to describe how teachers embedded the progress monitoring systems in daily classroom routines.

Teacher interview data suggest that the tests are well aligned with the curricula enacted in the classrooms. The maximum level of achievement correlates with student grades in German language. Analysis of learning progressions and student activities in the learning management system revealed that the number of finished exercises did not correlate with achievement level or learning progress. Not all students used performance feedback to select additional material for practice. We therefore analyzed the sequential patterns of tests and exercises, and found that highly successful students used the tutoring materials systematically to close knowledge gaps. Furthermore, observation protocols and interview data from teachers with high learning progression rates showed that these classrooms continuously worked with the progress monitoring system.

The results indicate that a computer-assisted formative assessment and tutoring system can foster self-regulated learning. However, learning success highly depends on the students' and teachers' ability to use performance feedback in a systematic way and to link the formative assessments closely to classroom instruction.

quop: An Effective Web-Based Approach to Monitor Student Learning Progress in Reading and Mathematics in Whole Classrooms

Birgit Schütze, Karin Hebbecker, Natalie Förster and Elmar Souvignier

Within the framework of formative assessment (Black & William, 1998), providing teachers with information about students' learning progress can be characterized as a very promising approach. Research on the approach of Curriculum-Based Measurement (CBM) revealed that progress information is a powerful tool to support effective instruction (Stecker, Fuchs, & Fuchs, 2005). Most studies, however, have been conducted with low-achieving students, and they were limited to only a few students per classroom. These limitations are based on two reasons: First, practicability of learning progress assessment needs to be increased so that the documentation of students' learning progress does not lead to increased effort for teachers. Second, the focus from support for poorly achieving students has to be extended to the need of individualized instruction for students on all levels of skills. Consequently, providing teachers with assessment-based information about students' individual learning growth is fundamental to helping teachers identify students in need of extra support, adapt instruction, and evaluate the effectiveness of classroom instruction (Fuchs & Fuchs, 1998).

Following these considerations, we developed a web-based learning progress monitoring system called "quop". Based on the Curriculum-Based Measurement (CBM) approach by Deno (1985), quop assesses learning progress in reading and mathematics by applying parallel forms of short tests throughout the school year. In contrast to CBM, however, quop was designed to monitor the progress of complete classrooms instead of low-achieving students only.

During the past years, quop has been subject of intensive research following the three research stages proposed by Fuchs (2004): a) analysis of the technical features of the assessments, b) investigation of technical features of slope,

and c) evaluation of its instructional utility. In our presentation, we will give an overview of the principles that drive quop and highlight the adjustments made for learning progress assessment in complete classrooms. Moreover, we will shortly present findings regarding the technical adequacies of the developed test series in reading and mathematics. Our studies show that quop provides reliable, valid, and sensitive test series to assess student growth using equivalent forms of tests. In addition, analyses with regard to growth trajectories reveal that students not only have large interindividual differences concerning their level of achievement, but also show different amounts of learning gains—and even stagnation—over time (Salaschek, Zeuch, & Souvignier, 2014).

The main focus of our presentation will be on the effects of providing teachers with information about students' learning progress. We will present results of three large intervention studies ($N_{\text{students}} = 2477$; $n_{\text{classes}} = 112$) investigating the effects of learning progress assessment compared to a control group with status assessment. In these studies, we evaluated the effects of combining learning progress assessment with either a) teacher training, b) student goal setting, or c) assessment-based differentiated instruction in reading. The results show that providing teachers with information about student learning progress is associated with higher learning growth. This can be considered as a net effect of information about growth rate compared to achievement status alone. One main finding from our studies is that it seems worthwhile to focus on teachers and provide them with additional support in making instructional decisions. Focussing on students in the goal-setting procedure did not lead to higher learning growth compared to the control group and had negative effects on students' intrinsic reading motivation and their self-concept.

Overall, providing teachers with information about student learning progress leads to higher learning growth. The implementation of a classwide learning progress assessment has been found to be feasible with a web-based assessment system.

Monitoring the Social, Motivational, and Self-Regulatory Aspects of Classrooms Across the United States

Hunter Gehlbach

Increasingly research signals the importance of social, motivational, and self-regulatory aspects of students' classroom experiences (Duckworth, Kirby, Gollwitzer, & Oettingen, 2013; Gehlbach et al., in press; Hulleman & Harackiewicz, 2009; Walton & Cohen, 2011). As this research proliferates, interest in measuring these critical dimensions of the classroom grows. Panorama Education is a for-profit survey and data analytics company that focuses many of their data collection efforts around helping schools learn more about these crucial aspects of their classrooms. So what happens when large data sets are collected that allow educational researchers, teachers, principals, and district leaders to see these aspects of different classrooms through the eyes of students? What can be learned about students' perceptions experiences that can be leveraged to improve classroom practices? This session will outline the potential of such data, the challenges that are faced, and spark discussion with a few (hopefully provocative) examples of empirical findings from this growing data set.

Workshop 3: Big Data, Little Data – Potentials and Boundaries of Digitization in Educational Research

Chair: Marc Rittberger

In recent years, digitization in the field of education has reached a new level: digital learning environments track the interactions of learners, digital educational resources can be adapted to individual learning trajectories, and digital devices can record individual behaviors in class room interaction. The increasing use of digital technologies in school and research leads to the ubiquity of data, which is discussed as big data and creates new fields in education such as learning analytics (Siemens 2011, Pardo/Siemens 2014) and educational data mining (Romero/Ventura 2010). Digital technologies have also gained substantial ground in research fields like technology-based assessment, qualitative educational research or digital humanities (Van Ruyskensvelde 2014, Schindler et al. 2013). The workshop will discuss these developments as well as potentials and boundaries of digitization in educational research. Respectively, big data is less perceived as absolute size but as a matter of scale (Borgman 2015), offering the possibility to address added values and restrictions (e. g. privacy) of digital technologies in the breadth of methods and approaches in educational research.

Interaction Logs: A Powerful Tool for Studying Engagement and Learning in a Very Fine-Grained Fashion

Ryan Baker

In recent years, logs of the interaction between students and online learning software have emerged as a powerful tool for tracking the processes surrounding student learning. In this talk, I will discuss the potential of automated detectors of student engagement and learning for understanding these processes better.

These detectors can make inference at a second-by-second level and can be used to track student progress across an entire year. I will illustrate this potential using examples of my group's work to model the contexts which precede and co-occur with moments of shifts in student understanding, and our work to understand the contexts in which positive and negative affect emerge and interact with learning.

How Big Data Presents New Opportunities for Better Research in State and Local Education Offices

Michael Hansen

Translating “research to practice” is a common aspiration in policy; however, actually executing on that promise is a challenge. While the frontiers of research on education policy are steadily expanding thanks to an increasing supply of new and insightful data, practitioners in state and local offices of education are strapped by budget constraints, insufficient technical expertise, and a host of competing priorities. Consequently, the data analysts who are commonly tasked with facilitating the application and implementation of research methodologies and findings to their own states or districts perpetually lag behind, and the gap between research and practice is poised to widen. Moreover, from a macro perspective, the data analyst’s never-ending pursuit is particularly inefficient in education policy since state and local governance structures mean that many of these data analysts exist across the many state and local education agencies in the country and perform similar duties, yet they pursue their own objectives in uncoordinated ways, implying many redundancies of effort.

I argue the data analyst’s position in state and local education offices is an under-appreciated area of potential gains in efficiency due to increasing digitization in education. As state and local databases are moving towards Common Education Data Standards, the time is right to focus efforts that facilitate sophisticated analyses of education data by unsophisticated data analysts. Common data tools would enable state and district analysts to provide more rigorous and timely analyses to policymakers and education leaders, and more informed leadership is expected to trickle down to greater learning and reductions in inequalities.

Scaling up Connections – Collaboration, Interlinking and Mixing of Qualitative and Quantitative Data in a Semantic Research Environment

Christoph Schindler

In recent years, the digitization of science has offered a range of new potentials to interact with research objects. While in quantitative research contexts a data deluge (Hey, Hey 2003) and big data collections have been identified as challenges, the qualitative and hermeneutically oriented research called for a complexity deluge (Dunn 2009). Instead of juxtaposing these research paradigms, the WorldWideWeb and technologies of formalization (e.g. Semantic Web, Wiki) offer the possibility for a shared research platform wherein new forms of connections can be realized: collaborations among researchers, interlinkings of research data and aggregated data like queries and visualizations (e.g. Moretti 2013), or even a mix of quantitative and qualitative data. In this presentation, recent realizations of the research environment Semantic CorA (Ell et al. 2013) in the Educational Sciences (e.g. historical research on educational lexica, class room interaction) will be shown by describing these new potentials of interacting with research data in digital science.

Digitization of Assessments – Between Added Value and Added Problems

Heiko Rölke

Digitization of assessments comes with great promises and opportunities. Gains in efficiency and content validity are just two of those. When put to practice, however, these gains are hard to achieve or sometimes neglected altogether. Based on real-world use-cases, we give examples of practical problems and boundaries and try to find ways of overcoming them.

In principle, digitization even of items and tests from previously existing paper-pencil tests seems like a good idea. This is due to the gains in efficiency: An e-assessment, once it has been set up on a server, can serve any number of participants not in parallel, but without any additional costs for printing and shipping etc. Efficiency gains can also be achieved when looking at single tests or single participants: Using adaptive tests (CAT) fewer items and less time are needed to judge about a test-taker's abilities.

Looking at content validity, not only improvements to existing or already working processes are possible, but entirely new domains can be assessed in natural ways. Examples are ICT skills assessments or assessments of dynamic problem solving.

Often, things do not work out all that well in practice. All kinds of problems happen, ranging from omitting most of the data acquired in the public use files to gaining no extra data at all. Several use cases showing such flaws will be discussed in the talk, from national as well as international assessment studies.

The causes of the problems are manifold, sometimes overlapping, and need to be carefully analyzed on an individual basis, usual suspects being time pressure and data privacy. The talk concludes with an attempt to overcome at least some of the problems by suggesting good practice and future software development needs.

Feature Analysis: Approach to Understand Test Item Infrastructure.

Ayesha Madni, Eva Baker and Kilchan Choi

This presentation will take participants through an informative and experiential process detailing aspects of the feature analysis process as well as results from past and current CRESST projects. Feature analysis is defined as the qualitative rating of items against a set of attributes, followed by a subsequent quantitative analysis to determine how these attributes determine task performance. There are three main parts to the feature analysis process: feature rating and step-by-step analysis, cognitive lab studies, and combining the qualitative feature ratings with quantitative analysis. These three components fulfill the following overarching questions:

- What particular features does each item contain?
- What are the dominant features across items?
- What particular item features increase or reduce difficulty and why?
- What feature combinations contribute to increased and reduced difficulty and why?
- How can features be combined to target learning outcomes and induce key learning processes and experiences?

Features can fall under several categories; including but not limited to cognitive and linguistic demands, content elements, and task characteristics. Similarly, feature rating can apply across tasks. For the current workshop the participants will be provided with example assessment and game tasks and features that require minimal subject matter expertise. The presenters will first guide the participants through an example feature rating task, and subsequently participants will be asked to collaborate on rating an assessment and game task. After the feature rating, the presenters will debrief with participants about the feature analysis approach and lessons learned, as well as provide key insights and results from quantitative analyses including linear logistic test modeling

(LLTM, Fischer, 1973, 2005; also see De Boeck & Wilson, 2004 for more recent updates to this model). This type of modeling addresses a key question: What are the task or task-cluster features that are significantly related to task characteristics and performance?

Poster Session: Presentations on Research Infrastructures in the Field of Education and Educational Data

Large-Scale Data Infrastructure at the Leibniz Institute for Educational Trajectories: The National Educational Panel Study in Germany

Hans-Günther Roßbach and Jutta von Maurice

The Leibniz Institute for Educational Trajectories (LifBi) at the University of Bamberg aims to promote longitudinal studies in educational research in Germany. It thus provides fundamental, transregional, and internationally significant, research-based infrastructure for empirical educational research at its location in Bamberg. One of the primary tasks of LifBi is to carry out the National Educational Panel Study (NEPS) and to provide the international scientific community with comprehensive, free-to-use life-course data on competence acquisition and development, educational processes and decisions, learning environments, and returns to education. With over 60,000 regularly surveyed target persons as well as 40,000 context persons, the NEPS thus opens up substantive possibilities for educational research. Its guiding principle is to ask how competencies unfold over the life course, how they influence (or do not influence) educational careers at various critical points of transition, and how and to what extent competencies are influenced in turn by learning opportunities – not only those resulting from the way teaching and learning processes are shaped in Kindergarten, school, higher education, vocational training and adult education, but also those provided within the family and the peer group. The large-scale assessment of NEPS pools the expertise of an interdisciplinary network of scientists from over 30 research sites across Germany.

U.S. Large-Scale Assessments and the National Center for Education Statistics: NAEP and International Assessments

Sheila Thompson

The National Center for Education Statistics (NCES) is the primary federal entity for collecting and analyzing data related to education. This poster session will present an overview of the National Assessment of Educational Progress (NAEP), which is the largest nationally representative and continuing assessment of what America's students know and can do in various subject areas. Paper-and-pencil assessments are conducted periodically in mathematics, reading, science, writing, the arts, civics, economics, geography, U.S. history, and in Technology and Engineering Literacy (TEL).

Additionally, the following international comparative studies, administered by the International Association for the Evaluation of Educational Achievement (IEA) and the Organization for Economic Cooperation and Development (OCED) in which the United States currently participates will also be presented:

- PIRLS – Progress in International Reading Literacy Study (PIRLS) – focused on the reading literacy of young students. PIRLS collects data on the reading achievement, experiences, and attitudes of fourth-grade students in the United States and students in the equivalent of fourth grade in other participating countries, as well as information on students' classroom and school contexts.
- PISA – Program for International Student Assessment (PISA) – a study of the reading literacy, mathematics literacy, and science literacy of 15-year-old students. It assesses students' applied knowledge and skills to problems within a real-life context. In addition to an assessment of student literacy, PISA collects information on students' experiences and attitudes, as well school contexts

- TIMSS – Trends in International Mathematics and Science Study (TIMSS) - a study of student performance in mathematics and science. TIMSS collects data on student achievement, experiences, and attitudes of students in the United States and students in the other participating countries, as well as information on classroom and school contexts.
- PIAAC – Program for the International Assessment of Adult Competencies (PIAAC) - a study of adult literacy, including reading literacy, numeracy, problem-solving in a technology-rich environment, and component reading literacy skills, as well as the skills adults report using in their jobs. In addition to the assessment of adult literacy, PIAAC collects data on adults' educational and work experiences.
- TALIS – Teaching and Learning International Survey (TALIS) - a study of teachers, teaching, and learning environments, with a particular focus on education workforce issues.

National Center for Research on Evaluation, Standards, and Student Testing (CRESST)

Kilchan Choi, Ayesha Madni and Eva Baker

Founded in 1966, the National Center for Research on Evaluation, Standards, and Student Testing (CRESST) is a leading research organization contributing to improved learning for American children and adults. As part of UCLA's Graduate School of Education & Information Studies, CRESST conducts rigorous research studies, develops innovative assessment and learning systems, forges new methodologies, as well as evaluates education and training programs. Throughout all of its work, the center is committed to leveraging the power of new technologies in order to advance assessment and evaluation practice. The current poster presentation will provide an overview of CRESST's key areas of focus, accomplishments, and practices including research spanning government, military, medical, and pre-K through adult organizations. The poster will specifically represent CRESST's innovations and approaches in taking a project from conception to completion by highlighting use cases across significant projects. To this end, the poster will take the viewer through CRESST's design and development process, and culminate in key evaluation activities delineating CRESST's model-based engineering approach and assessment architecture including ontologies and task specifications. The poster will end with key findings across projects related to design, development, innovation, measurement, and evaluation.

The German Center for International Student Assessment (ZIB): Educational Research with PISA and Beyond

Nina Jude

The German Centre for International Student Assessment (ZIB) was founded in October 2010 by the Federal Ministry of Education and Research (BMBF) and The Standing Conference of the Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (KMK).

Its mission is to establish cutting-edge research in the field of educational research by uniting the competences of three of the top-class institutions in German educational research, namely the School of Education of the Technische Universität München (TUM, Munich), the Leibniz Institute for Educational Research and Educational Information (DIPF, Frankfurt) and the Leibniz Institute for Science and Mathematics Education (IPN, Kiel).

In addition, a synergy results in linking the ZIB to the research data centre (FDZ), which is led by the Institute for Educational Quality Improvement (IQB, Berlin), hosting all national large scale assessment data available for educational research.

The ZIB:

- guarantees the continuous collaboration in international scientific committees in international large-scale assessments
- finances three university chairs for measurement research in Large Scale Assessment
- promotes young scientists in the areas of educational measurement
- leads the national project management of the PISA survey in Germany, including preparation of national reports

Leibniz Education Research Network – LERN

Karin Zimmer and Hans-Günther Roßbach

Educational opportunities are often distributed unevenly; children and adults have difficulty coping with the flood of information they are confronted with; the aims of secondary education and academia are not always clear – the educational sector faces a host of challenges. In order to meet these and to develop solutions, 15 institutes in the German Leibniz Association and associated institutions got together to form the Leibniz Education Research Network – LERN.

LERN bundles and supports the work of its researchers in educational science, subject-matter education, neurosciences, economics, political sciences, psychology and sociology as well as information science and computer science – the first to do so on such a large scale and unique in Germany.

The network's mission is collaborative research, i.e. to combine and develop the individual institutes' specialist knowledge in educational matters to find answers to questions posed by educational policy makers and other stakeholders. As an alliance combining diverse areas of expertise, LERN seeks to identify and tap the potential of education for the benefit of society and the individual, and help it to be used more effectively.

Building Data and Process Infrastructure to Effectively Support Large-Scale Assessment Systems

Lei Wan and Rosemary Reshetar

The College Board's large scale programs included the Advanced Placement Program (AP®) Courses and Exams and the redesigned SAT Suite of Assessments launched in the 2015 - 2016 academic year. The SAT Suite of Assessments is an integrated system made up of these tests: SAT, PSAT/NMSQT and PSAT 10, and PSAT 8/9. The tests are designed to test students in grades 8 through 12 and to measure the essential ingredients for college and career readiness and success, as shown by research. The SAT Suite's progression is reflected in a vertical score scale. Reported scores include subscores and cross-test scores, which provide insight into specific strengths and weaknesses.

AP comprises more than 30 courses and mixed-format or constructed response exams that represent a significant collaboration between colleges and universities and secondary schools. The AP course and exam experiences take place in secondary school classrooms; however, college faculty members work alongside AP teachers to help shape the course and exam content and to score exams. College and university admission and enrollment officials recognize the achievement of AP students, who demonstrate through successful exam scores that they are ready for the challenge of higher education and can, in turn, contribute new thoughts and ideas to the communities at their colleges and universities.

This poster will highlight the recent developments of systems and infrastructure to support the assessment design and development, psychometric systems and research for AP and the SAT Suite of Assessments. For the SAT suite, these include the development of the vertical score scale that will support not only higher education decisions but also instruction and learning; new data infrastructure including state of the art scoring and equating systems and a new item bank and test construction systems; online score reporting

coupled with practice and individualized feedback via Khan Academy. In addition research is underway to link PSAT to international assessments such as PISA and to compile validity evidence for the new tests.

To continually enhance alignment with current best practices in college-level learning, AP is undergoing a number of key changes, including the redesign of several courses in each discipline and the introduction of new courses. AP courses and their respective exams are conceived and developed in parallel processes with courses employing the backward planning model of Understanding by Design®, and the exams employing Evidence-Centered Design. Recently the AP Capstone program which includes the AP Seminar and AP Research courses and through-course portfolio and summative constructed response exams was introduced.

CVs

Eva Baker, CRESST, University of California, Los Angeles



Distinguished Professor in the divisions of Psychological Studies in Education and Social Research Methodology at the UCLA Graduate School of Education and Information Studies, Eva L. Baker has directed the UCLA Center for the Study of Evaluation (CSE) since 1975. She is also Director of the National Center for Research on Evaluation, Standards, and Student Testing (CRESST), a competitively awarded national institution funded by the U.S. Department of Education.

Eva Baker is a member of the National Academy of Education and a recipient of the 2007 ETS Henry Chauncey Award for Distinguished Service to Assessment and Educational Science. She was a congressionally appointed member of the National Council on Education Standards and Testing and chair of the Board on Testing and Assessment, National Research Council, The National Academies (2000-2004). Dr. Baker is a former president of the American Educational Research Association (2006-2007), former president of the Educational Psychology Division of the American Psychological Association, and a former editor of *Educational Evaluation and Policy Analysis*. She was co-chair of the committee to revise the *Standards for Educational and Psychological Testing* (1999).

Eva Baker's research is focused on the integration of instruction and measurement, including design and empirical validation of principles for developing instructional systems, and new measures of complex human performance. She is presently involved in the design of technologically sophisticated testing and evaluation systems of assessment in large-scale environments for both military and civilian education.

Ryan Baker, Teachers College, Columbia University, New York



Ryan Baker is Associate Professor of Cognitive Studies and Program Coordinator for Learning Analytics at Teachers College, Columbia University. He earned his Ph.D. in Human-Computer Interaction from Carnegie Mellon University. Baker was previously Assistant Professor of Psychology and the Learning Sciences at Worcester Polytechnic Institute, and he served as the first Technical Director of the Pittsburgh Science of Learning Center DataShop, the largest public repository for data on the interaction between learners and educational software. He was the Founding President of the International Educational Data Mining Society, and is Associate Editor of the Journal of Educational Data Mining and Associate Editor of the International Journal of Artificial Intelligence in Education. He has published a total of 247 articles with 248 distinct co-authors, and has garnered over 5,000 citations. His research combines educational data mining and quantitative field observation methods in order to better understand how students respond to educational software, and how these responses impact their learning. He studies these issues within intelligent tutors, simulations, multi-user virtual environments, and educational games, within populations from pre-schoolers, to middle school students, to military trainees.

Stefan Brauckmann, University of Klagenfurt



Stefan Brauckmann is holding the chair of quality development and quality assurance in education at the Institute of instructional and school development (IUS) of the University of Klagenfurt, Austria. Before, he had been academic staff member for more than ten years at the German Institute for International Educational Research (DIPF) in Berlin. As a researcher he participated in several international comparative studies, such as the “Education Systems in Canada and Germany – An In-

depth Comparison of System Governance” and “Educational Attainment and Education systems in Europe”. His main academic fields and interests lie within framework conditions to the education system as well as the different governing mechanisms in educational administration, which affect the development of quality assurance in education. Recent research activities focus on the relationship between leadership styles of school principals and their beliefs about contextual and educational governance structures.

Jack Buckley, College Board, New York



Jack Buckley is Senior Vice President of The College Board since 2014. He is responsible for all psychometrics, educational research and evaluation assessment, data services and education membership organization. He is also Research Associate Professor of Applied Statistics at the Department of Humanities and Social Sciences in the Professions at New York University, Steinhardt School of Culture, Education, and Human Development.

Jack Buckley holds doctoral and master’s degrees in political science from SUNY Stony Brook and a bachelor’s degree in government from Harvard.

He has a deep background in education research. Before joining the College Board in 2014, he served as commissioner of the U.S. Department of Education’s National Center for Education Statistics. In that role, he was responsible for the measurement of all aspects of U.S. education, including conducting the National Assessment of Educational Progress and coordinating U.S. participation in international assessments, including PISA, TIMSS, and PIAAC. He was also a senior technical adviser to Department of Education leadership and co-chair of its Data Strategy team. Jack is known in his field for his research on school choice – particularly charter schools – and on statistical methods for public policy and education.

Kilchan Choi, CRESST, University of California, Los Angeles



Kilchan Choi is the CRESST Assistant Director/Principal Scientist for Statistical and Methodological Innovations. His expertise is in the development and application of advanced statistical methodologies and hierarchical modeling to applied problems in multi-site evaluation, growth modeling, and school effectiveness/accountability in a large-scale assessment system. He has developed a new value-added model applied to multiple-school, multiple-cohort longitudinal data in estimating different cohort effects and teacher effects. His current research focuses on integrating item response theory, latent variable regressions, longitudinal analysis, and hierarchical models into a general comprehensive statistical model.

Benó Csapó, University of Szeged



Benó Csapó is a Professor of Education at the University of Szeged and the head of the Doctoral School of Education, the Research Group on the Development of Competencies, Hungarian Academy of Sciences, and the Center for Research on Learning and Instruction he founded in 2003. He was a Humboldt research fellow at the University of Bremen (1989) and at the Center for Advanced Study in the Behavioral Sciences, Stanford, California (1994–95).

He was a member of the Problem Solving Expert Groups that devised the assessment frameworks for the 2003 and 2012 OECD PISA surveys and head of the Technological Issues Working Group in the Assessment and Teaching of 21st Century Skills initiative (2009–2010). He was also a member of the PISA Governing Board (2005–14 and vice chair 2008–14).

He is a member of the Educational Committee of the Hungarian Academy of Sciences (1990–) and the Editor of *Magyar Pedagógia* (1991–). He was twice an elected member of

the Executive Committee of the European Association for Research on Learning and Instruction (1997–2001) and president of the 12th Biennial Conference for Research on Learning and Instruction (Budapest, 2007).

His fields of research include cognitive development, educational evaluation and technology-based assessment.

Natalie Förster, University of Münster



Natalie Förster, PhD, is a postdoctoral researcher at the Institute of Psychology in Education, University of Münster, Germany. She works at the Department of Assessment and Intervention in Education, directed by Professor Elmar Souvignier. Her research interests include the assessment of students'

learning progress and the interplay of student assessment, individualized instruction and student development in the area of reading.

Hunter Gehlbach, University of California, Santa Barbara



Hunter Gehlbach is an Associate Professor at UC-Santa Barbara's Gevirtz Graduate School of Education and the Director of Research at Panorama Education. An educational psychologist by training and a social psychologist at heart, his interests lie in improving the social side of schools. One of

his recent studies helped teachers and students get to know each other better – the downstream consequences of which were a closing of one school's achievement gap (by over 60%).

In addition to this substantive interest, he helps social scientists and practitioners design better questionnaires, with a goal of helping schools improve teacher and student outcomes. He has written about his substantive and methodological interests for outlets ranging from Journal of Educational Psychology and Psychological Assessment to Huffington Post and Education Week.

He holds degrees from Swarthmore College (B.A.), the University of Massachusetts-Amherst (M.Ed. in school counseling), Stanford (M.A. in social psychology; Ph.D. in educational psychology), and completed a post-doctoral fellowship at the University of Connecticut. A former high school social studies teacher and coach, Gehlbach currently serves on the editorial board of Educational Psychology Review and Educational Psychologist and is a member of the Questionnaire Standing Committee for the National Assessment of Educational Progress.

Tanja Graf, Freie Universität Berlin



Tanja Graf is a Research Assistant working on the project “School leadership and school achievement – School leadership measures in consequence of standard based proficiency tests and their effect on school achievement” at Freie Universität Berlin. She is a PhD-candidate with main research interests in feedback research and school improvement research.

Joann Halpern, German Center for Research and Innovation, New York



Joann Halpern is the director of the German Center for Research and Innovation (GCRI) and an adjunct professor of international education at New York University. GCRI, a joint initiative of Germany’s Federal Foreign Office and the Federal Ministry of Education and Research, was created as a cornerstone of the German government’s initiative to internationalize science and research. Before she joined the GCRI, Joann Halpern was director of academic affairs at Global College of Long Island University and from 1996-2001 she was director of international programs at Harz University in Wernigerode, Germany. She also co-founded Knowledge Transfer Beyond Boundaries, an NGO with projects in Cameroon, Nigeria,

Yemen, and Antigua. Halpern received her B.A. from Dartmouth College, her M.A. from Harvard University, and her Ph.D. from New York University. She is a recipient of the Harvard University Award for Distinction in Teaching as well as fellowships from the Fulbright Commission, the National Endowment for the Humanities, the Robert Bosch Foundation, and the German Academic Exchange Service. She serves on the advisory boards of the Technical University of Dortmund, German Accelerator, Charité Entrepreneurship Summit, University Alliance Ruhr, LIU Global and INet NYC.

**Michael Hansen, Brown Center on Education Policy
BROOKINGS, Washington D.C.**



Michael Hansen is a Senior Fellow at the Brookings Institution and the Deputy Director of the Brown Center on Education Policy. A labor economist by training, he has conducted original research on the teacher quality, value-added measurement, teacher evaluation, and teacher responses to incentives and accountability using state longitudinal data systems. Other areas of research include school turnaround and STEM learning. Findings from Michael Hansen's research have received media coverage from prominent outlets including the *Washington Post*, *the Atlantic*, *the Wall Street Journal*, *Politico*, and *Education Week*. His work has also been published in peer-reviewed research journals including *American Economic Review*, *Education Finance and Policy*, *Economica*, *Educational Evaluation and Policy Analysis*, *American Educational Research Journal*, among others. He has worked as Principal Investigator or co-PI on a range of contracts and grants with a variety of funders, including the Institute of Education Sciences, the National Science Foundation, the Knight Foundation, and Teach For America. He holds a Ph.D. in Economics from the University of Washington.

Karin Hebbecke, University of Münster



Karin Hebbecke received her M. Sc. in Psychology (focus area: “learning - development - counselling”) at the University of Münster, Germany in 2014. Since 10/2014 she has worked as a PhD student at the Institute for Psychology in Education and Instruction (IPBE) of the University of Münster.

She is a member of the work unit “Assessment and Intervention in Education”, directed by Professor Elmar Souvignier. Her research interests include the implementation of formative assessment in school with a particular emphasis on learning progress assessment, feedback and diagnosis based individualized instruction in the domain of reading in elementary school.

Nina Jude, DIPF Frankfurt

Nina Jude is a senior researcher at the German Institute for International Educational Research in Frankfurt, Germany (DIPF). She has been involved in large scale assessments since 2001, working on the assessment of cognitive and non-cognitive variables in national and international large scale settings. Her research focuses on the dimensionality of constructs in multilevel-settings, and the relevance of context factors for education.

Nina has graduated at the University of Frankfurt with a master degree and a Ph.D. in Psychology, focussing on educational measurement and quantitative methods.

Since 2007, she has been responsible for managing large scale assessment projects at DIPF. In PISA 2009, Nina has been responsible for the national project management in Germany, representing the national centre for PISA. Since 2012, Nina Jude is the project manager for PISA 2015 (questionnaire framework and development) and PISA 2018 (questionnaire development). She is also coordinating the work of the new German centre for research in international large scale projects (ZIB) at the DIPF.

Eckhard Klieme, DIPF Frankfurt



Eckhard Klieme is Full Professor for Educational Sciences at the Johann Wolfgang Goethe-University in Frankfurt/Main and head of the Center for Educational Quality and Evaluation at the German Institute for International Educational Research (DIPF). From 2004-2008 he served as the Director of the DIPF. He has a strong background in educational measurement, educational effectiveness, quantitative methods, and comparative studies. He graduated from University of Bonn with master degrees both in mathematics and psychology, and a PhD in Psychology. Before joining DIPF, he was a senior researcher at the Institute for Test Development and Talent Research in Bonn (1982-1997), and the Max Planck Institute for Human Development in Berlin (1998-2001). Eckhard has been involved in several large-scale assessment programs, both at a national and an international level. He has been involved in the OECD PISA studies since 1998, has been the chair of the International Questionnaire Expert Group for PISA 2015 and is currently leading the PISA 2018 international questionnaire development at DIPF. He also directed research on instructional quality and school effectiveness, including classroom studies on physics education, simulation-based learning, secondary mathematics and early science education, as well as large scale evaluation programs for school improvement. Eckhard Klieme's research focuses on Educational Effectiveness, School Development, and Assessment of Student Competencies.

Stefan Kühne, DIPF Berlin



Stefan Kühne is scientific coordinator of the German national education report which periodically provides indicator-based information about the general conditions, features, results and outcomes of education processes. His main expertise and research

interests lie in the field of data quality and explanatory power for educational policy, i.e. indicator development with a specific focus on the school system. Recently he investigated the potential of German statistics for flow indicators on school graduation and dropout.

Harm Kuper, Freie Universität Berlin



Harm Kuper is a Full Professor for Continuing Education and Educational Management and was from 2011 – 2014 Dean at the Department of Educational Science and Psychology at Freie Universität Berlin. He is the project leader of “School leadership and school achievement – School leadership measures in consequence of standard based proficiency tests and their effect on school achievement”(08/2013 – 06/2016). His fields of experience are further education and empirical education.

Henry Levin, Teachers College, Columbia University, New York



Henry M. Levin is the William Heard Kilpatrick Professor of Economics and Education at Teachers College, Columbia University. He is Co-Director of the Center for Benefit-Cost Studies in Education, (www.cbcse.org). He is also the David Jacks Professor of Higher Education and Economics, *Emeritus*, at Stanford University where he served from 1968-99 after working as an economist at the Brookings Institution in Washington. From 1978-84 he was the Director of the Institute for Research on Educational Finance at Stanford, a federally-funded R. & D. Center. From 1986-2000 Levin served as the Director of the Accelerated Schools Project, a national school reform initiative for accelerating the education of at-risk youngsters encompassing about 1,000 schools in 41 states.

Levin has held Fulbright Professorships in Barcelona and Mexico and is an Honorary Professor at Beijing Normal University. He has been a fellow of the Center for Advanced

Study in the Behavioral Sciences and the Russell Sage Foundation. He has also been a member and President of the Palo Alto (CA) School Board and was President (2008-09) of the Comparative and International Education Society. He was a member of the Board of Trustees of Educational Testing Service for 15 years.

Levin is a specialist in the economics of education and human resources and has published 20 books and about 300 articles on these and related subjects. At present he is doing research on educational reform, educational vouchers, cost-effectiveness analysis, educational privatization, and benefit-cost studies in education.

Meghan Lockwood, Harvard University, Cambridge



Meghan Lockwood is a doctoral candidate in Education Policy, Leadership, and Instructional Practice at Harvard Graduate School of Education and co-chair of the Data Wise Coach Certification Program. Prior to her graduate studies, Meghan taught middle school social studies and English in Boston and Reading, MA, and English as a Foreign Language in Santiago, Chile. Her research focuses on professional learning, teacher teams, and system-level reform. She holds a BA in Comparative Literature (English and Spanish) from Yale University, and an Ed.M. in Language and Literacy from Harvard Graduate School of Education.

Karen Seashore-Louis, University of Minnesota, Minneapolis



Karen Seashore-Louis is a Regents Professor and the Robert H. Beck Chair in the Department of Organizational Policy, Leadership, and Development at the University of Minnesota. She has also served as the Director of the Center for Applied Research and Educational Improvement at the University of Minnesota, Department Chair, and Associate Dean of the

College of Education and Human Development. Her work focuses on school improvement and reform, school effectiveness, leadership in school settings, and the politics of knowledge use in education. Her recent books include *Aligning Student Support with Achievement Goals: The Secondary School Principal's Guide* (with Molly Gordon, 2006), *Building Strong School Cultures: A Guide to Leading Change* (with Sharon Kruse, 2009), *Linking Leadership to Student Learning* (with Kenneth Leithwood, 2011), and *Educational Policy: Political Culture and Its Effects* (2012). A Fellow of the American Educational Research Association, she also served as the Vice President of Division A, and as an Executive Board member of the University Council for Educational Administration. She has received numerous awards, including the Lifetime Contributions to Staff Development Award from the National Staff Development Association (2007), the Campbell Lifetime Achievement Award from the University Council for Educational Administration (2009), and a Life Member designation from the International Congress for School Effectiveness and School Improvement.

Ayesha Madni, CRESST, University of California, Los Angeles



Ayesha Madni is a CRESST senior researcher. Her research interests include educational games, student motivation, social and emotional learning, and human learning and memory. Her current work involves students' self-efficacy and social and emotional learning within educational games. She also has a strong interest in enhancing performance of students with special needs. Prior to her work at CRESST, she taught at the Rossier School of Education, University of Southern California and worked as a senior researcher for Intelligent Systems Technology Inc. She has also worked as a learning specialist providing targeted interventions to facilitate student learning and motivation across a variety of student populations. She received her doctorate in Educational Psychology from the University of Southern California.

Uwe Maier, University of Education Schwäbisch Gmünd



Uwe Maier is professor of education at the Institute for Education, Department of School Research at the University of Education in Schwäbisch Gmünd. His fields of research are data-based school reform, computer-assisted formative assessment and lesson planning.

Jutta von Maurice, University of Bamberg



Jutta von Maurice studied psychology at the University of Trier. She received her diploma in 1993 with a thesis on the effects of chance events and interests on decision-making behavior in college freshmen. She received her doctorate from the University of Trier in 2004 with a thesis on intergenerational interest relations from the perspective of person-environment fit theory. In 2009 she was appointed as Executive Director of Research of NEPS and has since been responsible for coordinating research activities of the National Educational Panel Study. As of January 2014, she became Executive Director of Research at the Leibniz Institute for Educational Research (LIfBi) at the University of Bamberg. Her research interests are in the fields of vocational psychology, developmental psychology, and quantitative research methods.

Rick Mintrop, University of California, Berkeley



Rick Mintrop is Associate Professor and Director of the Doctoral Program in Leadership for Educational Equity at the Graduate School of Education, University of California, Berkeley. His research focus lies on how educational policies form institutional structures that in turn shape teaching and learning in schools. He examines the issue of school accountability, particularly in

low performing schools and is interested in the tension between student achievement and citizenship, accountability and democratization. His work has recently resulted in the book “Schools on Probation: How Accountability Works (and Doesn’t Work), at Teachers College Press.” Heinrich “Rick” Mintrop has been awarded a Carnegie Corporation scholarship to study school accountability systems comparatively in the United States and Germany. He also has firsthand experience in the field as he worked as a teacher in both the United States and Germany before he entered into his academic career.

Barbara Muslic, Freie Universität Berlin



Barbara Muslic is a Research Assistant working on the project “School leadership and school achievement – School leadership measures in consequence of standard based proficiency tests and their effect on school achievement” at Freie Universität Berlin. She is a PhD-candidate with main research interests in school (leadership) research and organizational research.

Carolin Ramsteck, University of Education Schwäbisch Gmünd



Carolin Ramsteck holds an- M.A. degree in education and business management and is research assistant at the Institute for Education, Department of School Research at the University of Education in Schwäbisch Gmünd. Her fields of research are organisational development and school improvement.

Jean-Paul Reeff, DIPF Frankfurt



Jean-Paul Reeff works as an independent consultant for the DIPF/ICE since December 2005. He holds degrees in psychology, physics and computer sciences, and a PhD in experimental psychology. He has a strong background in assessment and evaluation, as well as in technology-based learning and assessment. His consultancy focuses on initiating large-scale interdisciplinary projects and on acting as a broker among research, policy and practice. Over the past twenty years he served as a consultant to decision makers in different countries and in several international organizations.

Beyond his long-term involvement in many international studies, he has long-term experience with evaluation activities at various national and international levels. For more than ten year he had central evaluation responsibilities at the Luxembourg Ministry of Education. He served for more than twenty years as an evaluation expert to various directorates of the European Commission (Education, Research, Telematics, Industry) and was involved at different levels in OECD evaluation activities. He also serves as an evaluator and evaluation consultant in different countries across the world with a strong focus on education programs.

Rosemary Reshetar, College Board, New York



Rosemary Reshetar is Executive Director, Psychometrics at the College Board and is playing a critical role in developing the internal knowledge base and core capabilities for psychometric and assessment design processes and systems to support major testing programs including AP®, SAT® and P/N®. Her prior experience includes eight years at ETS as a Sr. Psychometrician working on multiple complex assessment programs and increasingly responsible management and director positions, along with eight years as a psychometrician

at the American Board of Internal Medicine. She is an adaptable technical leader with strong industry experience in psychometrics, assessment design, operations and research. Her research interests include development of best practices to support the psychometric quality and validity of score interpretations for large scale and mixed-format assessments.

Marc Rittberger, DIPF Frankfurt



Marc Rittberger is Deputy Executive Director of the German Institute for International Educational Research (DIPF) and Professor of Information Management at the DIPF and the University of Applied Sciences Darmstadt. Since 2005 he is Director of the Information Center for Education at DIPF in Frankfurt. From 2002-2005 he was Professeur Filière Information documentaire at the Haute Ecole de Gestion in Geneva and from 2001-2002 he served as a stand-in professor in Information Science at the Heinrich-Heine-University Düsseldorf. He studied Physics and Information Science, and has a Ph.D. in Information Science.

Marc Rittberger is a member of the Council of the Leibniz-Association (WGL) and the Governing Board of the University Association of Information Science. In addition, he works as a member of the scientific advisory board of the Know Center at Graz, of the German National Library of Economics and of GESIS (Leibniz Institute for the Social Sciences). He is also a member of the Strategic Board on eHumanities at the Federal Ministry of Education and Research (BMBF).

He is in charge of several running research and development projects, most of them funded by the German National Foundation (DFG), the European Commission (EU), the Organisation for Economic Co-Operation and Development (OECD), and the German Ministry of Education and Research (BMBF). In particular, he is closely involved with applied research in the areas of Information Retrieval and Information Quality as well as research & development projects of the Information Center for Education.

Heiko Rölke, DIPF Frankfurt



Heiko Rölke holds a doctoral degree in Computer Science from the University of Hamburg. He works as a senior software architect and group leader at the DIPF, the German Institute for International Educational Research in Frankfurt, Germany. He manages several national and international projects in collaboration with research institutions, governmental agencies and companies as the head of the Technology Based Assessment group at DIPF. Heiko Rölke has in-depth expertise in the development of complex and distributed systems. In recent years, he has designed and developed important parts of the computer-based item development and delivery for PISA 2009, PIAAC, PISA 2012, and the Swiss national school monitoring, amongst several smaller-scale studies. He manages the implementation of the Computer-Based Assessment (CBA) ItemBuilder authoring system and supervised the international work on reengineering and further developing the survey delivery platform TAO, used in the PISA and PIAAC surveys.

Hans-Günther Roßbach, University of Bamberg



Hans-Günther Roßbach is the Director of the Leibniz Institute for Educational Trajectories (LIfBi) at the University of Bamberg. He also holds the Chair of Early Childhood Education at the University of Bamberg. He became Managing Project Director of the National Educational Panel Study in August 2012 before taking on the position of Director in 2014. He studied pedagogy, psychology, and sociology at universities in Bonn, Cologne, and Münster (Dipl.-Päd., 1977; Dr. phil., 1981; Habilitation in educational science with a focus on empirical educational research, 1993). His research mainly focuses on early childhood education, elementary pedagogy, and

longitudinal studies, and in these areas he has published numerous books and articles.

Christoph Schindler, DIPF Frankfurt



Christoph Schindler completed his PhD thesis in Information Science on information practices in educational research. He holds Masters Degrees in Cultural Anthropology, Social Sciences and Information Science. Since 2006, he has been working at the Information Center for Education (IZB) at the German Institute for International Educational Research (DIPF). His research focuses on infrastructures and information practices in educational research and practice. Recently he has realized a range of projects with research environments. He coordinates the field of eHumanities at the IZB.

Birgit Schütze, University of Münster



Birgit Schütze is a postdoctoral researcher at the Institute of Psychology in Education, Department of Assessment and Intervention in Education (Professor Elmar Souvignier), University of Münster, Germany. She studied Psychology at the University of Frankfurt. From 2007-2014 she worked at the German Institute for International Educational Research (Department of Educational Quality and Evaluation; Professor Eckhard Klieme) where she completed her doctoral thesis on competence diagnostics and feedback in 2013. Since 2014 she works at the University of Münster. Her research interests include formative assessment and feedback in mathematics instruction.

Edward S. Shapiro, Lehigh University, Bethlehem



Edward S. Shapiro, Ph.D., currently is Professor of School Psychology and Director, Center for Promoting Research to Practice in the College of Education at Lehigh University, Bethlehem, Pennsylvania. He is the 2006 winner of the Senior Scientist Award given by the Division of School Psychology of the American Psychological Association in recognition of a senior member of the field who has provided a sustained program of outstanding theoretical research. Edward Shapiro is author, co-author, or co-editor of 14 books, including his most recently published fourth edition of *Academic Skills Problems: Direct Assessment and Intervention* and the *Academic Skills Problems Workbook*, both by Guilford Press as well as *Models for Implementing Response to Intervention*. He is best known for his work in curriculum-based assessment and methods for assessing and intervening in academic skills problems with elementary age students. Among his many projects, He recently completed a federal project focused on the development of a multi-tiered, Response-to-Intervention (RTI) model in two districts in Pennsylvania and has recently been awarded a U.S. Department of Education training grant to train school psychologists as facilitators of RTI processes. He currently is co-PI of a Goal 3 IES grant examining the efficacy of implementing the RAMP-UP reading program for middle school students with severe reading disabilities. Edward Shapiro has been working as a consultant with the Pennsylvania Department of Education to facilitate the implementation of the Response to Intervention methodology for the state.

Elmar Souvignier, University of Münster



Elmar Souvignier, PhD, is a professor in the Department of “Assessment and Intervention in Education” at the Institute of Psychology in Education, University of Münster, Germany. His research interests are assessment and intervention in primary and secondary education and college, as well as teacher training and the implementation of research-based reading programs into school practice.

Petra Stanat, Institute for Educational Quality Improvement, Berlin



Petra Stanat is director of the Institute for Educational Quality Improvement (IQB) at the Humboldt-Universität zu Berlin. The IQB is in charge of the national assessments of student achievement in the German school system. After obtaining her PhD in social and personality psychology at the University of Massachusetts at Amherst in 1992, she worked as a research scientist at the Max Planck Institute for Human Development. In this position, she coordinated the PISA 2000 assessment cycle for Germany. Petra Stanat is involved in several professional organizations. She is a member of several advisory boards, such as the Review Board for Education Sciences in the German Science Foundation (DFG). Since 2014, she has been head of the Department Education and Integration of the Berlin Institute for Integration and Migration Research (BIM) at the Humboldt-Universität. In her research, Petra Stanat focuses on questions related to ethnic and social disparities in education, determinants of immigrant students’ educational success, second-language teaching and learning, reading achievement, and large-scale assessment of student achievement.

**Sheila Thompson, National Center for Education Statistics,
Washington**



Sheila D. Thompson is employed at the U.S. Department of Education within the Assessment Division of the National Center for Education Statistics. During her tenure, since 2010, she has served within the International Assessment Branch and her current primary responsibility is focused on her role as the National Research Coordinator for the Progress in International Reading Literacy Study (PIRLS).

Her background experiences include diverse professional experiences related to educational research and assessment including those as Chief Executive Office of Precision Research & Evaluation, LLC; the Center for Research on the Education of Students Placed At Risk (CRESPAR) at Howard University; the Maryland State Department of Education; and the District of Columbia Public Schools.

Sheila Thompson is a former Chair of the Minority Issues and Testing Committee of the National Council on Measurement in Education (NCME). She also served as a member of the Design and Analysis Committee for the National Assessment of Educational Progress (NAEP) and participated as a pre-doctoral fellow in the Summer Fellowship Program in Research for Graduate Students at the Educational Testing Service.

Committed to community service, she is the Secretary of the Board of Directors of Children's Choice, Inc.; and is a member of Delta Sigma Theta Sorority, Inc. She also serves a member of the Board of Stewards and is Commissioner of Christian Education at Reid Temple A.M.E. Church. Additionally, she is an inaugural inductee of the Morgan State University Psychology Department Hall of Fame; is listed in Outstanding Young Women of America; and has been inducted into Promethean Kappa Tau and Psi Chi Honor Societies.

Sheila received the Doctor of Philosophy (Ph.D.) degree from Howard University in Educational Psychology with a specialization in research methodology and evaluation.

Michael Uljens, Åbo Akademi University, Vaasa



Michael Uljens is Chair Professor of General Education (Allgemeine Pädagogik) and Educational Leadership at Åbo Akademi University, Vaasa, Finland (2003-). <http://www.vasa.abo.fi/users/muljens/>

With professor Rose Ylimaki in Arizona he leads a research program on "Discursive and Non-Affirmative Educational Leadership" since 2013. The project works with theoretically bridging and transcending curriculum studies, Didaktik, leadership research as developed in the US and in Europe.

Theoretically the project draws on core concepts (Anerkennung, Aufforderung, Bildungsamkeit/Bildung) in German-Nordic education theory contrasted with post-national theories of (inter)subjectivity as well as on discursive institutionalism (V. Schmidt), policy research and globalization studies. Empirically the project informs research on 1) educational leadership as national curriculum work, 2) regional school turnaround processes, and 3) data-informed school development practices.

Lei Wan, College Board, New York



Lei Wan is a Psychometrician with the College Board. She has a strong background in educational measurement and statistics and nine years of practical experience in large-scale educational assessments at Pearson Educational Measurement and the College Board. She has extensive operational experience with many psychometric activities, including test design, test form construction, item calibration and analysis, equating and scaling, standard setting, computer adaptive testing, and sampling etc.

Annika Wilmers, DIPF Frankfurt



Annika Wilmers works for the office “International Cooperation in Education - ice” at the DIPF since 2009. She holds a degree in Modern History, Medieval History and German Literature, and a PhD in Modern History (University of Tübingen). Since working for ice, Annika concentrated on linking German educational research with international research communities. During the last few years, she was involved in projects that aimed at fostering research exchange between North American and German scholars as well as working for OECD and EU projects, particularly in the field of evidence-informed education policy and practice.

Rose Ylimaki, University of Arizona, Tucson



Rose M. Ylimaki is a Professor and EDL Program Coordinator in the Department of Educational Policy Studies and Practice at the University of Arizona. She locates her work at the intersection of curriculum studies / critical education studies, and educational leadership. She brings her knowledge of complex education ideologies, curriculum theory, policies and practices at international, national, and local (community and school) levels to administrative audiences. Her journal articles appear in *Educational Administration Quarterly*, *Journal of School Leadership*, and the *American Educational Research Journal* among others. She also has two books published by Routledge and one edited volume published by Springer Press. Rose Ylimaki has a forthcoming co-edited volume (with Michael Uljens) in April, 2016 entitled *A Theory of Educational Leadership as Curriculum Work: Towards a Comparative International Dialogue on Curriculum Theory, Leadership and Research*. She teaches courses in leadership, curriculum and politics, and qualitative research methods at the University of Arizona. She is also the primary investigator on an Arizona

Statewide project developing leadership teams for persistently low-performing, culturally diverse schools. Prior to assuming a faculty position at the University of Arizona, she served as a principal and district curriculum administrator in Stevens Point, Wisconsin. Her PhD is in Educational Administration and Curriculum from the University of Wisconsin-Madison.

List of Participants

Name	Organisation	Contact	WS
Baker, Eva	CRESST, University of California, Los Angeles, USA	eva@ucla.edu	3
Baker, Ryan	Teachers College, Columbia University, New York, USA	baker2@tc.colum bia.edu	3
Brauckmann, Stefan	University of Klagenfurt, Austria	Stefan.Brauckma nn@aau.at	1
Buckley, Jack	College Board, New York/Washington, USA	jbuckley@college board.org	Panel
Choi, Kilchan	CRESST, University of California, Los Angeles, USA	kchoi@cse.ucla.e du	WS 3 and Poster
Csapó, Benó	University of Szeged, Hungary	csapo@edpsy.u- szeged.hu	Panel
Förster, Natalie	University of Münster, Germany	natalie.foerster@ uni-muenster.de	2
Gehlbach, Hunter	University of California, Santa Barbara, USA	hgehlbach@educ ation.ucsb.edu	2

Name	Organisation	Contact	WS
Graf, Tanja	Freie Universität Berlin, Germany	tanja.graf@fu-berlin.de	1
Halpern, Joann	German Center for Research and Innovation, New York, USA	halpern@germaninnovation.org	Panel
Hansen, Michael	Brookings Institution, Washington D.C., USA	MHansen@brookings.edu	3
Hebbecker, Karin	University of Münster, Germany	karin.hebbecker@uni-muenster.de	2
Jude, Nina	German Institute for International Educational Research -DIPF, Frankfurt, Germany	jude@dipf.de	Poster
Klieme, Eckhard	German Institute for International Educational Research -DIPF, Frankfurt, Germany	klieme@dipf.de	Panel

Name	Organisation	Contact	WS
Kühne, Stefan	German Institute for International Educational Research -DIPF, Berlin, Germany	kuehne@dipf.de	1
Kuper, Harm	Freie Universität Berlin, Germany	harm.kuper@fu-berlin.de	1
Levin, Henry	Teachers College, Columbia University, New York, USA	levin@exchange.t.c.columbia.edu	Panel
Lockwood, Meghan	Harvard Graduate School of Education, Cambridge, MA, USA	meghan_lockwood@mail.harvard.edu	2
Louis, Karen Seashore	University of Minnesota, Minneapolis, USA	klouis@umn.edu	1
Madni, Ayesha	CRESST, University of California, Los Angeles, USA	madni@cse.ucla.edu	3
Maier, Uwe	University of Education Schwäbisch Gmünd, Germany	Uwe.Maier@ph-gmuend.de	2

Name	Organisation	Contact	WS
Maurice, Jutta von	Leibniz Institute for Educational Research (LifBi), University of Bamberg, Germany	jutta.von-maurice@lifbi.de	Poster
Mintrop, Heinrich	University of California, Berkeley, CA, USA	mintrop@berkeley.edu	1
Muslic, Barbara	Freie Universität Berlin, Germany	barbara.muslic@fu-berlin.de	1
Ramsteck, Carolin	University of Education Schwäbisch Gmünd, Germany	carolin.ramsteck@ph-gmuend.de	2
Reeff, Jean-Paul	German Institute for International Educational Research-DIPF, Frankfurt, Germany	reeff@iim.consulting	3
Reshetar, Rosemary	College Board, New York/Washington, USA	rreshetar@collegeboard.org	Poster
Rittberger, Marc	German Institute for International Educational Research -DIPF, Frankfurt, Germany	rittberger@dipf.de	3

Name	Organisation	Contact	WS
Rölke, Heiko	German Institute for International Educational Research -DIPF, Frankfurt, Germany	roelke@dipf.de	3
Roßbach, Hans-Günther	Leibniz Institute for Educational Research (LifBi), University of Bamberg, Germany	hans-guenther.rossbach@lifbi.de	Poster
Schindler, Christoph	German Institute for International Educational Research -DIPF, Frankfurt, Germany	schindler@dipf.de	3
Schütze, Birgit	University of Münster, Germany	harksb@uni-muenster.de	2
Shapiro, Edward S.	Lehigh University, Bethlehem, Pennsylvania, USA	ess2@lehigh.edu	2
Souvignier, Elmar	University of Münster, Germany	elmar.souvignier@uni-muenster.de	2
Stanat, Petra	Institute for Educational Quality Improvement, Berlin, Germany	Petra.Stanat@iqb.hu-berlin.de	Panel

Name	Organisation	Contact	WS
Thompson, Sheila	National Center for Education Statistics, US Department of Education, Washington, USA	Sheila.Thompson@ed.gov	Poster
Uljens, Michael	Åbo Akademi University, Vaasa, Finland	Michael.Uljens@abo.fi	1
Wan, Lei	College Board, New York/Washington, USA	lwan@collegeboard.org	Poster
Wilmers, Annika	German Institute for International Educational Research (DIPF), Frankfurt, Germany	wilmers@dipf.de	
Ylimaki, Rose	University of Arizona, Tucson, Arizona, USA	rylimaki@email.arizona.edu	1