

21st Century Skills Workshop

Board on Testing and Assessment

The Board on Testing and Assessment was created to assist policymakers and the public by providing scientific expertise around critical issues of testing and assessment in education, the workplace, and the armed services.

Education, Assessment, Testing

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BOTA

The National Academies, Board on Testing and Assessment and The National Academy of Education

Workshop of Assessment of 21st Century Skills Agenda

January 12-13, 2011
Beckman Center
Irvine, California

Wednesday, January 12

9:30 **Opening Remarks**
WELCOME
Stuart Elliott (Director, Board on Testing and Assessment)

[VIDEO](#)

Overview of workshop
Joan Herman (CRESST, Chair of Workshop Steering Committee)

9:40-12:15 **Session 1: Background Information**
Moderators: Joan Herman and Pat Kyllonen (ETS and Workshop Steering Committee)

[VIDEO](#)

(9:40- 10:00) Why Are 21st Century Skills Important?
Richard Murnane, Harvard University

[Presentation](#)

This presentation will address the following issues:

- What is unique in the 21st century that makes these skills especially valuable in the labor market and/or in other life domains (learning, family life, civic engagement)?
- How does the growing use of computers and technology affect the labor market and the demand for 21st century skills?
- What does more recent research suggest about the skills needed to be successful in the 21st century?

(10:00-10:15) How Will You Know if Your Students are 21st Century Ready?

[VIDEO](#)

Deborah Boisvert, Boston Area Advanced Technical Education

[Presentation](#)
[Handout 1](#)

The presenter will respond to the opening presentation, reflecting her work with employers to define, teach, and assess 21st century skills of computer technicians.

[Handout 2](#)

[Handout 3](#)

[VIDEO](#)

(10:15-10:45) The Teaching and Learning of 21st Century Skills

Eric Anderman, Ohio State University

[Paper](#)

[Presentation](#)

This presentation will address the following issues:

- What is known about the extent to which the three skill clusters and/or the skills within them can be taught and learned?
- To what extent are learning, teaching, and assessment of the three skill clusters domain-specific or domain-general?

[VIDEO](#)

(10:45-11:00) Discussion

Moderators will lead a question and answer session with the presenters and audience members.

11:00-11:15

Break

[VIDEO](#)

(11:15-11:35) Approaches to Developing Assessments of 21st Century Skills

Deirdre Knapp, HumRRO

[Presentation](#)

This presentation will address the following issues:

- What are the different approaches to assessment of these skills and what steps are involved in carrying out these approaches?
- What processes are used for identifying the skills to be measured, operationalizing the skills through the test blueprint, and creating assessment tasks and scoring procedures?
- How should the intended uses of the assessment results guide the test development process?
- What steps should be taken to ensure that the assessments are reliable and valid?

(11:35-11:55) Unique Challenges and Opportunities in Assessment of 21st Century Skills

[VIDEO](#)

Speaker: Steven Wise, Northwest Evaluation Association

[Presentation](#)

This presentation will address the following issues:

- What are the unique challenges and opportunities for defining and measuring these constructs, when compared to more traditional academic skills and knowledge?
- How might the results of these assessments be used? Should they be used for high stakes purposes?
- What issues may arise in relation to validity, reliability, and fairness of assessments of these skills?

[VIDEO](#)

(11:55-12:15) Questions and Discussion

12:15-1:15

Lunch in Beckman Center Dining Room

Continued discussion of ideas presented during the morning sessions

1:15-3:45

Session 2: Assessing Cognitive Skills

Moderators: Greg Duncan (University of California, Irvine; Workshop Steering Committee) and Paul Sackett (University of Minnesota; Workshop Steering Committee)

[VIDEO](#)

(1:15-1:45) Defining and measuring cognitive skills

Nathan Kuncel, University of Minnesota

[Presentation](#)

[Paper](#)

This presentation will address the following issues:

- What are 21st century cognitive skills? To what extent do they differ from each other and from general cognitive ability? What are the conceptual differences that are proposed to exist between these constructs?
- What are the existing measures of these constructs, and to what extent do these existing measures match their conceptual specifications?
- What are the relationships between the existing measures of these constructs?

(1:45-2:00) Questions and Discussion

Moderators will lead a question and answer session with the presenters and audience members.

(2:00-3:15) Panel Discussion: Examples of Assessments of Cognitive Skills

Panelists will discuss examples of assessments of cognitive skills. For each example they will address:

- What skill or skills are measured? Why are these skills important?
- What is the purpose of the assessment?
- What strategies were used to develop the assessment and why were these selected?
- What assessment methods are used and why were these selected?
- How is the assessment scored? What data are available on the technical quality of the assessment, including validity, reliability, fairness, and comparability across administrations?
- What data are available on the cost and practical feasibility of the assessment?

[VIDEO](#)

(2:00-2:20) Interactive Problem Solving for PISA 2012

Joachim Funke, University of Heidelberg (by video-conference)

[Presentation](#)

[VIDEO](#)

(2:20-2:40) Operation ARIES!: Learning critical thinking about science with intelligent conversational agents in a game environment

Art Graesser (University of Memphis) and Heather Butler (Claremont McKenna College)

[Presentation](#)

[VIDEO](#)

(2:40-3:00) Intrusive and Unobtrusive Assessment of Entrepreneurial and Technical Skills through Simulation and Gaming

John Behrens, Cisco Systems

[Presentation](#)

[VIDEO](#)

(3:00-3:20) Assessment of Critical Thinking and Problem Solving on the Multistate Bar Exam

Susan Case, National Conference of Bar Examiners

[Presentation](#)

3:20-3:30

Break

[VIDEO](#)

(3:30-4:00) Moderated Discussion

Moderators will explore the following issues with panelists and audience members:

- What are the implications of the presentations (and examples) for the design of 21st century assessments for K-12 and higher education?
- Do common themes or approaches emerge from the examples? How might the non-education examples generalize to education?
- How might 21st century assessments be incorporated into current research efforts, such as the development of assessment systems by the two state consortia)? What functions can/should the assessments serve? How might the results be used?
- What equity and accessibility challenges do these assessments raise?
- What barriers might slow development and/or use of assessments of 21st century skills? How might they be overcome?

4:00-5:00

Synthesis of Key Ideas

Moderator: Joan Herman

[VIDEO](#)

(4:20-4:40) Discussion: *Richard Murnane, Harvard*

Discussants will reflect on the day's discussions and offer their synthesis of the ideas presented. Audience members will be invited to ask questions and share their ideas as well.

5:00

Conclude Formal Agenda for Day 1

5:30

Working Group Dinner at Beckman Center (in Atrium)

Plan for the second day of the workshop

Thursday, January 13

9:00- 11:45

Session 3: Assessing Interpersonal Skills

Moderators: Deirdre Knapp and Juan Sanchez (Florida International University, Workshop Steering Committee)

[VIDEO](#)

(9:00-9:30) Defining and Measuring Interpersonal Skills

Stephen M. Fiore, University of Central Florida

[Presentation](#) [Paper](#)

This presentation will address the following issues:

- What are 21st century interpersonal skills and why are they important?
- How are these skills typically assessed? What are the challenges in assessing them?
- What are some of the assessments available to evaluate these skills?

(9:30-9:40) Questions and Discussion

Panelist will discuss examples of assessments of interpersonal skills. For each example, they will address the following issues:

- What skill or skills are measured? Why are these skills important?
- What is the purpose of the assessment?
- What strategies were used to develop the assessment and why?
- What assessment methods are used and why were these selected?
- How is the assessment scored? What data are available on the technical quality of the assessment, including validity, reliability, fairness, and comparability across

- administrations?
- What data are available on the cost and practical feasibility of the assessment?

(9:40-10:00) Using situational Judgment Tests for Medical School Admissions

[VIDEO](#)

Filip Lievens, Ghent University, Belgium (by video-conference)

[Presentation](#)

(10:00-10:20) On-Line Portfolio Assessments of the 4 C's

[VIDEO](#)

Bob Lenz, Envision Schools

[Presentation](#)

(10:20-10:40) 21st Century Skills in STEM Workforce Training Assessments

[VIDEO](#)

Louise Yarnall, SRI

[Presentation](#)

(10:40-11:00) Assessment Centers 2011: Fifty Years of Best Practice and Today's Innovations

[VIDEO](#)

Lynn Gracin Collins, SH&A/Fenestra

[Presentation](#)

11:00-11:10 Break

[VIDEO](#)

(11:10-11:45) Moderated Discussion

Moderators will explore the following issues with panelists and audience members:

- What are the implications of the presentations (and examples) for the design of 21st century assessments for K-12 and higher education?
- Do common themes or approaches emerge from the examples? How might the non-education examples generalize to education?
- How might 21st century assessments be incorporated into current research efforts, such as the development of assessment systems by the two state consortia)? What functions can/should the assessments serve? How might the results be used?
- What equity and accessibility challenges do these assessments raise?
- What barriers might slow development and/or use of assessments of 21st century skills? How might they be overcome?

11:45-12:45 Working Lunch in Beckman Center Dining Room

Continued discussion of ideas presented during the morning sessions

12:45-3:30 Session 4: Assessing Intra-Personal Skills

Moderators: Pat Kyllonen and Steve Wise

(12:45-1:15) Assessment of Self-Regulation and Related Constructs: Prospects and Challenges

[VIDEO](#)

Rick Hoyle, Duke University

[Paper](#)

[Presentation](#)

The presentation will address the following issues:

- What are 21st century intra-personal skills and why are they important?
- How are these skills typically assessed? What are the challenges in assessing them?
- What are some of the assessments available to evaluate these skills?

(1:15-1:30) Discussion

(1:30-3:30) Panel Discussion: Examples of Assessments of Intra-Personal Skills

Panelists will discuss examples of assessments of intra-personal skills. For each example, they will address the following issues:

- What skill or skills are measured? What are these skills important?
- What is the purpose of the assessment?
- What strategies were used to develop the assessment and why?
- What assessment methods are used and why were these selected?
- How is the assessment scored? What data are available on the technical quality of the assessment, including validity, reliability, fairness, and comparability across administrations?
- What data are available on the cost and practical feasibility of the assessment?

[VIDEO](#)

(1:30-1:50) Integrity Testing for Employee Selection

Paul Sackett, U of Minnesota; Workshop Steering Committee

[Presentation](#)

[VIDEO](#)

(1:50-2:10) Targeting context-specific self-regulated learning (SRL) processes: An overview and illustration of SRL microanalysis

Tim Cleary, U of Wisconsin – Milwaukee

[Presentation](#)

[VIDEO](#)

(2:10-2:30) Assessing behavioral problems that predict poor educational and life outcomes

Candice Odgers, UC Irvine

[Presentation](#)

[VIDEO](#)

(2:30-2:50) Out of the maze? In search of skills for emotional intelligence

Gerald Matthews, U of Cincinnati

[Presentation](#)

2:50-3:00

Break

[VIDEO](#)

(3:00-3:30) Moderated Discussion

Moderators will explore the following issues with panelists and audience members

- What are the implications of the presentations (and examples) for the design of 21st century assessments for K-12 and higher education?
- Do common themes or approaches emerge from the examples? How might the non-education examples generalize to education?
- How might 21st century assessments be incorporated into current research efforts, such as the development of assessment systems by the two state consortia)? What functions can/should the assessments serve? How might the results be used?
- What equity and accessibility challenges do these assessments raise?
- What barriers might slow development and/or use of assessments of 21st century skills? How might they be overcome?

3:30-4:00

Session 5: Reflection and Synthesis

Moderated discussion led by workshop steering committee

4:00

[VIDEO](#)

Closing Remarks, Adjourn

Joan Herman

