

Defining Deeper Learning and 21st Century Skills

Committee

James W. Pellegrino

Chair

James W. Pellegrino is liberal arts and sciences distinguished professor and distinguished professor of education at the University of Illinois at Chicago (UIC). He is co-director of UIC's interdisciplinary Learning Sciences Research Institute. Dr. Pellegrino's current work is focused on analyses of complex learning and instructional environments, including those incorporating powerful information technology tools, with the goal of better understanding. A special concern of his research is the incorporation of effective formative assessment practices, assisted by technology, to maximize student learning and understanding. Dr. Pellegrino has served on numerous NRC boards and committees, including the Board on Testing and Assessment. He co-chaired the NRC committee that authored the report *Knowing What Students Know: The Science and Design of Educational Assessment*. He recently helped the College Board build new frameworks for curriculum, instruction, assessment, and professional development in AP Biology, Chemistry, Physics, and Environmental Science. Dr. Pellegrino earned his B.A. in psychology from Colgate University, Hamilton, New York, and both his M.A. and Ph.D. from the University of Colorado.

Greg J. Duncan

Member

Greg J. Duncan is distinguished professor of education at the University of California, Irvine. He has published extensively on issues of income distribution, child poverty, and welfare dependence. He is co-author with Aletha Huston and Tom Weisner of *Higher Ground: New Hope for the Working Poor and Their Children* (2007) and co-editor with Lindsay Chase Lansdale of *For Better and For Worse: Welfare Reform and the Well-Being of Children and Families* (2001). With Jeanne Brooks-Gunn, he co-edited two books on neighborhood poverty and child development. He continues to study neighborhood effects on the development of children and adolescents and other issues involving welfare reform, income distribution, and its consequences for children and adults. Duncan is a member of the interdisciplinary MacArthur Network on the Family and the Economy. He was elected president of the Society for Research in Child Development for 2009-2011. A member of the National Academy of Sciences, Dr. Duncan currently serves on the steering committee for the BOTA Workshop on Assessment of 21st Century Skills. He previously served as a member of the Panel to Review the National Children's Study Research Plan, and as co-chair of the Committee on Evaluation of Children's Health. He received his Ph.D. in economics from the University of Michigan.

Joan Herman

Member

Joan Herman is Director of the National Center for Research on Evaluation, Standards, and Student Testing (CRESST) at the University of California, Los Angeles. Her research has explored the effects of testing on schools and the design of assessment systems to support school planning and instructional improvement. Her recent work has focused on the validity and utility of teachers' formative assessment practices in mathematics and science. She also has wide experience as an evaluator of school reform and is noted in bridging research and practice. A former teacher and school board member, Herman also has published extensively in research journals and is a frequent speaker to policy audiences on evaluation and assessment topics. She is past president of the California Educational Research Association; has held a variety of leadership positions in the American Educational Research Association and Knowledge Alliance; is a member of the Joint Committee for the Revision of the Standards for Educational and Psychological Measurement; co-chairs the Board of Education for Para Los Niños, and is current editor of Educational Assessment. She served as a member of the NRC Committee on Test Design for K-12 Science Achievement, and the Roundtable on Education Systems and Accountability, the Committee on Best Practices for State Assessment Systems and is chairing the BOTA workshop on 21st Century Skills. Herman received her doctorate of education in learning and instruction from the University of California, Los Angeles.

Margaret A. Honey

Member

Margaret A. Honey joined the New York Hall of Science as president and CEO in November of 2008. She is widely recognized for her work using digital technologies to support children's learning across the disciplines of science, mathematics, engineering and technology. Prior to joining the New York Hall of Science, she was vice president of Wireless Generation, an education technology company. Earlier, she spent 15 years as vice president of the Education Development Center (EDC) and director of EDC's Center for Children and Technology. There, she directed numerous large-scale research projects funded by the National Science Foundation, the Institute for Education Sciences, the Carnegie Corporation, and other organizations. As a member of the Educational Advisory Board of the Partnership for 21st Century Skills, she worked closely with business representatives to define 21st century skills and consider how to teach and assess them. Her activities have included collaborations with public television, investigations of data-driven decision-making tools and practices, and creation of one of the first internet-based professional development programs in the country. She currently serves on the NRC Board on Science Education and recently chaired the Committee on Learning Science: Computer Games, Simulations, and Education. Earlier, she chaired the steering committee for the workshop on IT Fluency and High School Graduation Outcomes. She received her Ph.D. in developmental psychology from Columbia University.

Patrick C. Kyllonen

Member

Patrick C. Kyllonen is the director of the Center for New Constructs at Educational Testing Service (ETS), Princeton, NJ. Before coming to ETS, he was a faculty member at the University of Georgia, and director of the Cognitive Performance Division of the Air Force Research Laboratory. He is the recipient of numerous awards, including one from the technical cooperation program for the design, development, and evaluation of the trait-self-description (personality) inventory for use in 5 countries, has served on the board of several journals, has been a regular reviewer for NSF, IES, and other agencies, and is a fellow of Division 15 of the American Psychological Association. Dr. Kyllonen is known for his work on the measurement of human abilities, working memory, learning and skill acquisition, psychomotor abilities, personality assessment, computer-based testing, and psychometrics. More recently his focus has been on noncognitive assessment. He currently oversees a wide array of research and development projects on measurement of noncognitive abilities at all levels of education, from kindergarten through graduate school. He participated in an expert planning meeting as part of the NRC project, Research on 21st Century Competencies: A Planning Process on Behalf of the Hewlett Foundation, and currently serves as a member of the steering committee for the Workshop on Assessment of 21st Century Skills. Dr. Kyllonen received his Ph.D. in educational psychology in 1984 from Stanford University and his B.A. in experimental psychology from St. John's University.

Henry M. Levin

Member

Henry M. Levin is the William Heard Kilpatrick professor of economics and education at Teachers College, Columbia University, and director of the National Center for the Study of Privatization in Education, a nonprofit, nonpartisan research organization. He is a specialist in the economics of education and human resources, cost-effectiveness analysis, school reform, and educational vouchers. He is currently drafting an invited conference paper on the potential importance of non-cognitive skills, issues of measurement and assessment, and the influence of these skills on adult outcomes. Among his 21 published books are Privatizing Educational Choice with C. Belfield (2005) and Readings in the Economics of Education with C. Belfield (2003). He has served on several NRC committees, including the recent Committee on Strengthening Benefit-Cost Methodology for the Evaluation of Early Childhood Interventions, the Committee on Educational Excellence and Testing Equity (from 2000-2002) and the Panel on Secondary School Education for the Changing Workplace (in the early 1980s). He received his bachelor's degree in marketing and economics from New York University and his Ph.D. in economics from Rutgers University.

Christine Massey

Member

Christine Massey is the director of research and education at the Institute for Research in Cognitive Science at the University of Pennsylvania. She is also director of PENNlincs, which serves as an outreach arm of the Institute, linking recent theory and research in cognitive science to education efforts in public schools and cultural institutions. She has directed major projects that combine research investigating students' learning and conceptual development in science and math with the development and evaluation of new curriculum materials, learning technology, and educational programs for students and teachers. These projects include development of mathematics learning software that incorporates principles of perceptual learning; creation of the Science for Developing Minds curriculum series; development of a robotics curriculum for the middle grades; and kits and exhibit enhancements to support family learning in zoos and museums. She is an Eisenhower Fellow and has also been a fellow in the Spencer Foundation/National Academy of Education's Postdoctoral Fellowship program. Dr. Massey served as a member of the NRC steering committee for the Workshop on the Intersection of Science Education and 21st Century Skills. She earned her Ph.D. in psychology with a specialization in cognitive development at the University of Pennsylvania.

Richard E. Mayer

Member

Richard E. Mayer is professor of psychology at the University of California, Santa Barbara (UCSB), where he has served since 1975. His research interests are in educational and cognitive psychology. His current research involves cognition, instruction, and technology with a special focus on multimedia learning and computer-supported learning. He is past president of Division 15 (Educational Psychology) of the American Psychological Association, past vice president of Division C (Learning and Instruction) of the American Educational Research Association and former editor of the *Educational Psychologist*. From the American Psychological Association, he received the E. L. Thorndike Award for career achievement in educational psychology (in 2000) and the Distinguished Contribution of Applications of Psychology to Education and Training Award (in 2008). He has led many research projects funded by the Institute of Education Sciences, National Science Foundation, and other agencies. He serves on the editorial boards of 14 journals mainly in educational psychology, and is the author of numerous books and articles, including the *Handbook of Research on Learning and Instruction* (editor, with P. Alexander, 2011), *Applying the Science of Learning* (2010) and *Multimedia Learning: Second Edition* (2009). He served on the NRC Committee on Opportunities in Basic Research in the Behavioral and Social Sciences for the U.S. Military and on the Mathematics Learning Study Committee. He received a Ph.D. in psychology from the University of Michigan in 1973.

Kent C. McGuire

Member

C. Kent McGuire was recently appointed president and CEO of the Southern Education Foundation. From 2003-2010, he served as dean of the College of Education and professor in the Department of Educational Leadership and Policy Studies at Temple University. Previously, he was senior vice president at MDRC, where his responsibilities included leadership of the education, children, and youth division. From 1998 to 2001, Dr. McGuire served in the Clinton administration as assistant secretary of education, focusing on research and development. Earlier, he was an education program officer at the Pew Memorial Trusts and at the Eli Lilly Endowment. Dr. McGuire's current research interests focus on the areas of education administration and policy and organizational change. He has been involved in a number of evaluation research initiatives on comprehensive school reform, education finance and school improvement. He has written and coauthored various policy reports, monographs, book chapters, articles, and papers in professional journals. He is a member of the NRC Committee on Independent Evaluation of DC Public Schools and previously served as a member of the Center for Education Advisory Board. He received his doctorate in public administration from the University of Colorado at Boulder in 1991.

P. D. Pearson

Member

P. David Pearson is a professor in the programs of language and literacy and cognition and development at the Graduate School of Education at the University of California, Berkeley, where he served as dean from 2001-2010. His current research focuses on reading instruction and reading assessment policies and practices. Previously, he was dean of the College of Education at the University of Illinois at Urbana-Champaign. A member of the National Academy of Education, he has served as president of the National Reading Conference and on the board of directors of both the International Reading Association and the Association of American Colleges of Teacher Education. Among his honors are the William S. Gray Citation of Merit from the International Reading Association, the Oscar Causey Award for Contributions to Reading Research from the National Reading Conference, and the Alan Purves Award from the National Council of Teachers of English. He is the founding editor of the Handbook of Reading Research, now in its fourth volume, and has served on the editorial boards of many journals including Reading Research Quarterly, Science, Journal of Literacy Research, Review of Educational Research, Journal of Educational Psychology, and Cognition and Instruction. He currently serves on the NRC Panel to Review Alternative Data Sources for the Limited-English Proficiency Allocation Formula. Professor Pearson received his B.A. in history from the University of California at Berkeley, after which he taught elementary school in California for several years, and completed his Ph.D. in reading education at the University of Minnesota.

Edward A. Silver

Member

Edward A. Silver is William A. Brownell collegiate professor in education at the University of Michigan and holds a joint appointment in the School of Education and the Department of Mathematics. He is also currently serving as dean of the School of Education at University of Michigan-Dearborn. He was formerly at the University of Pittsburgh, where he was a professor in the School of Education and a senior scientist at the Learning Research and Development Center. His research interests focus on the teaching, learning and assessment of mathematics, particularly mathematical problem solving. He is also actively involved in efforts to promote high-quality mathematics education for all students, particularly Hispanic and African-American students. Dr. Silver's service with the NRC includes the Mathematical Sciences Education Board, the Study Group on Guidelines for Mathematics Assessment, the Committee on the Foundations of Assessment, and the Committee on the Study of Teacher Preparation Programs in the United States. He received a B.A. in mathematics from Iona College, an M.S. in mathematics from Columbia University, and an M.A and doctorate in mathematics education from Teachers College of Columbia University.