ANDREA A. DISESSA

Professor of the Graduate School Evelyn Lois Corey
Professor Emeritus of Education
Graduate School of Education University of California

Personal

Born:
Citizenship:

Education

Ph.D. in Physics	Massachusetts Institute of Technology, May 1975
A. B. in Physics ***magna cum laude*** ***Phi Beta Kappa***	Princeton University, May 1969

Research Interests

Computers in Education. Learning/Genetic Epistemology. Instruction in Physics and Mathematics. Programming Languages for Non-professionals.

Professional History

June 1972 - June 1982	Member of A.I. Laboratory - Logo Group M.I.T.
Sept. 1975 - June 1977	Special Lecturer, Education M.I.T.
Sept. 1977 - June 1981	Assistant Professor, Education M.I.T.
Sept. 1981 - June 1982	Associate Professor, Education M.I.T.
July 1982 - August 1982	Visiting Researcher Centre Mondial (World Center for Computers and Human Resources), Paris
July 1982 - March 1984	Principal Scientist, Laboratory for Computer Science M.I.T.
April 1984 - Sept. 1985	Senior Scientist, Laboratory for Computer Science Leader, Educational Computing Group M.I.T.

Sept. 1985 - June 1988	Associate Professor, Education U.C. Berkeley
July 1988 -	Professor, Education U.C. Berkeley
Sept. 1988 - Sept. 1989	Chairman, SESAME Graduate Program U.C. Berkeley
July 1989 - July 1991	Associate Dean for Academic Affairs Graduate School of Education, U.C. Berkeley
July 1992 - July 1993	Speaker, Division in Education in Mathematics, Science and Technology, Education, U.C. Berkeley
	Visiting Professor, Media Lab., M.I.T.
Sept. 1993 - Feb. 1994.	Convener, Center for the Study of Critical Transitions. Funded by the Graduate School of Education, U.C. Berkeley, and the Spencer Foundation.
March 1997 - July 2002.	
	Fellow, Center for Advanced Study in the Behavioral Sciences
Sept. 1997 - June 1998	Chair, Cognition and Development, Education, U.C. Berkeley
July 1998 - July 2000	Visiting Professor, Danish Pedagogical University, Copenhagen, Denmark
Jan 2006 - Dec 2007	Chair of the Faculty, Graduate School of Education.
Sept. 2005 - July 2007	Speaker, Education in Mathematics, Science and Technology Program, Education, U.C.
July 2006 - July 2007	
	Berkeley
Sept. 2007 - June 2008	Fellow, Center for Advanced Study in the Behavioral Sciences

Consulting Record (major items)

July 1980 - Dec. 1980	Texas Instruments, Dallas, TX
Sept. 1981 - Dec. 1981	Logo Computer Systems, Montreal, Quebec
Jan. 1982 - Sept. 1982	Bank Street College of Education, NY
April 1982 - Sept. 1985	Children's Television Workshop, Software Division Senior Consultant and Advisor

March 1983 - May 1983	Logo Computer Systems, Scientific Advisory Council Member
Jan. 1987 - June 1994	Affiliated Research Scientist, Institute for Research on Learning, Palo Alto, CA.

Awards and Honors

Fellow of the American Educational Research Association, 2008-present.
Fellow, Center for Advanced Study in the Behavioral Sciences, 2007-2008.
Appointed Evelyn Lois Corey Professor of Education, 2003.
Walker-Ames Lecturer, University of Washington. Seattle, WA, February 17-21, 2003.
Chancellor's Professor of Education, 1998-2001.
Fellow, Center for Advanced Study in the Behavioral Sciences, 1997-98
Elected to Membership, National Academy of Education, 1995.
Australian Council for Educational Research / Australian Telecom Sunrise Fellow. Melbourne, Australia, May, 1990.

Professional

Associate Editor, ***Journal for STEM Education Research*** (2017-preset)

Editor in Chief, ***Cognition and Instruction*** (2007-2012).
Editorial Board of ***Cognition and Instruction*** (1993-present).
Executive Editorial Board of the ***International Journal of Computers for Mathematical Learning*** (1999-2010).
Editorial Board of the ***International Journal of Computers for Mathematical Learning*** (1995-2010).
Contributing editor of the ***Journal of Mathematical Behavior*** (1982-2007).
Editorial Board of the ***Journal of Science Education and Technology*** (1993-2015).
Editor for ***Instructional Science*** (1984-1989).
Editorial Board for ***Instructional Science*** (1989-1994).
Editorial Board for the ***Journal of the Learning Sciences*** (1990-2000).
Editorial Board for ***Interactive Learning Environments*** (1990-1999).
Editorial Board of the ***Journal of Interactive Learning Research*** (1997-2002).
Editorial Board of Advisors, Technology and Education Newsletter, Lawrence Erlbaum Associates (1986-1990).
Member, National Research Advisory Board, Model Technology School Project (one of four funded by the California State Government), Alhambra School District, Los Angeles, CA (1987-1989).
Member, National Advisory Board, Science Modeling Project, NSF sponsored project, Technical Education Research Centers, Cambridge, MA (1987-1988).
Member, Advisory Board, Reasoning Under Uncertainty, NSF sponsored project, BB&N, Cambridge, MA (1988-1989).
Member, Advisory Board, Measuring and Modeling, NSF sponsored project, Technical Education Research Centers, Cambridge, MA (1989-1992).
Founding Member of the Advisory Board for the SIG in Education in Science and Technology (1989-2007).
Member, National Advisory Board, Center for Development of Teaching, Educational Development Center, Newton, MA. 1992-1996.
Affiliated Researcher, School Mathematics and Science Achievement Center, University of Wisconsin—Madison, 1996-2001. (Department of Education)
Member, Advisory Board, ChemSense Project. (NSF-sponsored project, SRI International) 1999-2005.

Member, Advisory Board, Handheld Assessment Project. (NSF-sponsored project, SRI International) 2001-2005.
Senior Researcher, Center for Diversity in Mathematics Education, 2001-2003. (NSF, $10,000,000 collaborative center)
Member, Advisory Board, Computationally-Enhanced Construction Kits: Integrating Tangible and Computational Media for Construction and Design. (NSF-Sponsored Project, University of Washington and University of Colorado). 2003 – 2006.
Member, External Review Committee, Learning Lab Denmark Math and Science Consortium. April 28-May1, 2004.
Member, Advisory Board. "Toward a new conceptualization of what constitutes progress in learning physics: Resource, frames, and networks." NSF-sponsored project, University of Maryland. 2006-2008.
Member, Advisory Board for "Tangibility for the Teaching, Learning, and Communicating of Mathematics," NSF sponsored consortium project, Vanderbilt, San Diego State University, U. Wisconsin (Madison), University of Illinois (Chicago). 2009-2012.
Member, Advisory Board for "SiMSAM: Bridging Student, Scientific, and Mathematical Models with Expressive Technologies," NSF-sponsored project, Michelle Wilkerson PI, Tufts University. 2012 – 2015.
Member, Advisory Board for "An Interdisciplinary Study of Learning: Student Understanding of Linear Algebra in Physics, NSF Career Grant, Megan Wawro PI, Virginial Polytechnic Institute. 2015 – present.
Member, Advisory Board for "Advancing Secondary Mathematics Teachers' Quantitative Reasoning," NSF Career Grant, Kevin Moore PI, U. Georgia. 2016 – present.

Selected Sponsored Projects and Grants

"An Educational Computing Environment for 1990," (PI) National Science Foundation, $1,000,000 1985-1988.

"Models of Learning with a Computational Medium," (PI) National Science Foundation, $1,000,000 1988-1993.

"The Dynamics of Local Change in Intuitive Conceptions of Physics," (PI) The Spencer Foundation, $350,000 1991-1996.

Gift of computers from Sun Microcomputer, approximately $70,000, 1992.

"From Pictures to Scientific Representations: An Investigation of Children's Meta-Representational Competence," (PI) National Science Foundation, $750,000, 1996-2000.

"Reforming Education through Science and Design: A Ph.D. Training Initiative" (co-PI with Marcia Linn and Michael Ranney), National Science Foundation, $560,000 over 5 years, 1996-2002.

Subcontract from the National Center for Improving Student Learning and Achievement to work on technology-enhanced science education at the middle school level. About $300,000, 1998-2001.

Spencer Mentor Program, (PI) The Spencer Foundation, $50,000, 1997-1999.

"Understanding the Educational Implications of Component Software and the World Wide Web," (PI) National Science Foundation, $450,000, 1999-2003.

"Patterns of change and control: Specifying 'what to teach' on the basis of scientific research," (PI) The Spencer Foundation, $480,000, 2004-2009.

"Pathways to Equitable Science Instruction Based on Culturally Common Intuitive Knowledge," (PI) The Spencer Foundation, $500,000, 2010-2013.

"Integrating Knowledge Analysis and Interaction Analysis Approaches to Learning and Conceptual Change." (PI) AERA Research Conference Award, $40,000, 2010-2011.

"Reconceptualizing Computer Science Education: Integrating Student's Prior Knowledge into Pedagogy (Co-PI with Michael Clancy), $200,000, 2010-2012.

"Collaborative Research: Forging Identity and Community in Physics: Evaluation and Dissemination of Compass." (PI: Berkeley portion of collaborative grant with University of Maryland.) National Science Foundation, $100,000, 2014-1017.

Organization Membership

National Academy of Education
American Educational Research Association.
Cognitive Science Society.
International Society of the Learning Sciences.
Jean Piaget Society.
Mathematical Association of America.
National Consortium on Uses of Computers in Mathematical Sciences Education, Steering Committee Member (1984-1986).

Service

Government:

Conference on Future Funding for Computers in Education (U.S. Department of Education), Carnegie Mellon University and University of Pittsburgh, Pittsburgh, PA, November 20-24, 1982.

Commissioned report and presentation on technology and education to the Committee on Mathematics, Science and Technology of the Commission on Behavioral and Social Sciences and Education, National Academy of Sciences, October, 1984. (An abridged version published in ***Journal of Research in Science Education*** as "The third revolution is computers and education.")

Panel on Information Technology in Precollege Education, a Research Briefing for the Office of Science Technology Policy, the National Science Foundation and Selected Federal Departments, by the Committee on Science, Engineering and Public Policy, National Academy of Sciences, 1984.

Panel on Science Achievement Tests for the Committee on Indicators of Precollege Science and Mathematics Education, National Research Council, Oct. 11-12, 1985.

Panel on Strategic Planning for National Utilization of Advanced Technology for Improving Precollege Science and Mathematics Education for the National Science Foundation, Washington, D.C., December, 1985.

Planning Meeting on the Incorporation of Emerging Technologies into Engineering Education. National Research Council, Board on Engineering Education. Irvine, CA, July 20-22, 1992.

Presentation to The Committee on Information Technology Literacy, The Computer Science and Telecommunications Board (CSTB) of the National Research Council. Washington, D.C. April 4, 1998.

NSF/IERI Roundtable on Technology in Education. Washington, D. C., October 31 - November 1, 1999.

Other National:

American Institute of Physics/American Association of Physics Teachers - Introductory University Physics Project. St. Louis meeting, Feb. 23-25, 1989. Denver meeting, Nov. 10-12, 1989.

Chair, Special Interest Group in Science and Technology Education, American Educational Research Association (1992-93). (Chair-elect, 1991-92; Chair, 1992-93; Past Chair, 1993-94)

Panel on a proposed Science Study project for the Committee on Science Education, National Research Council, Washington, D.C., Nov. 9-10, 2002.

National Academy of Education Post-Doctoral Fellowship Selection Committee. 2004–2008.

AERA Mentor for Junior Faculty, AERA Annual Meeting, 2009.

External Review Committee, University of Colorado Institute of Cognitive Science, Boulder, CO, March 21 – 23, 2012.

National Academy of Education, Research Advisory Committee. 2012-2015.

Reviewing

Journals:

Artificial Intelligence Journal
American Educational Research Journal
Communications of the Association of Computing Machinery
Cognition
Cognitive Science
Cognition and Instruction
Cognitive Development
Cognitive Psychology
Developmental Psychology
Education Evaluation and Policy Analysis
Human Development
Interactive Learning Environments
International Journal of Science Education
International Journal of STEM Education
International Journal of Computers for Mathematical Learning
Journal of Research in Science Teaching

Journal of Experimental Child Psychology
Journal of College Mathematics
Journal of Experimental Psychology: General
Journal of Research in Science Teaching
Journal of Research in Mathematics Education
Journal of the Learning Sciences
Physical Review Special Topics: Physics Education Research
Science
Science and Education

Publishers:

M.I.T. Press
Bradford Books
Addison-Wesley
Benjamin-Cummings
Lawrence Erlbaum Associates
Scholastic Productions, Scientific advisor for "The Magic Schoolbus"

Foundations and Funding Agencies:

National Science Foundation (Materials Development, Knowledge and Database Systems, Interactive Systems, Memory and Cognitive Processes, Research on Learning and Education, Graduate Training Programs (GRT, IGERT), and other Programs).
Panel for the Program in Teaching and Learning, National Science Foundation, Washington, D.C.: 4 panels, 1991-1993.
United States-Israel Binational Science Foundation.
Israel National Science Foundation.
The Spencer Foundation (Major Grants, Post-Doctoral Fellowships)
Federal Government of Brazil.
NSF Review Panels: IGERT, ROLE (3 panels). 1999-2002.
Czech Science Foundation.

Conferences:

National Logo Conference Program Committee, 1984, 1985.
Program Committee for the American Association of Artificial Intelligence Annual Conference, 1987.
Program Committee for "Toward a Scientific Practice of Science Education," Berkeley, CA, January, 1987 (NSF Sponsored).
Program Committee for the International Conference on Intelligent Tutoring Systems, Montreal, June, 1988.
Reviews for the American Educational Research Association Annual Conference, 1986-present.
Program Committee for the Conference on Learning Sciences, Chicago, August, 1991.
Co-Organizer and Program Committee, NATO Advanced Workshop on the Design of Computational Media to Support Exploratory Learning. Asilomar, CA, October, 1993.
Program Committee for the Conference on Learning Sciences, Chicago, July, 1996.
Program Committee for the International Conference on Computer Support for Collaborative Learning 1997, University of Toronto, Fall 1997.
Program Committee for the IEEE End-User Programming Workshop. Stresa Italy, June, 2001.

Organizational Committee for "Fostering the Coevolution of mathematical learning practices and technologies." Institute of Education, University of London, London, England, March, 2001.

Program Committee for the Fifth International Conference of the Learning Sciences, Seattle, Washington, October, 2002.

Program Committee for the Annual Meeting of the Cognitive Science Society, Boston, August, 2003.

Organizing Committee for the AERA-sponsored Workshop "Integrating Knowledge Analysis and Interaction Analysis Approaches to Studying Learning and Conceptual Change." May-June, 2011.

Publications

Books and Monographs:

Abelson, H. and diSessa, A. A. (1981). ***Turtle Geometry: The computer as a medium for exploring mathematics.*** Cambridge, MA: MIT Press. Subsequently produced in paperback (1985); editions translated into Spanish, Italian, Japanese, Hungarian and Polish.

Gardner, M., Greeno, J. G., Reif, F., Schoenfeld, A., diSessa, A. A. & Stage, E., (1990). ***Toward a Scientific Practice of Science Education***, Hillsdale, NJ: Lawrence Erlbaum. Edited Volume.

diSessa, A. A. (1993). Toward an epistemology of physics. ***Cognition and Instruction***, **10** (2-3), 105-225; Responses to commentary, 261-280. (***Cognition and Instruction,*** Monograph No. 1.) The monograph includes: an introduction by Editor Lauren Resnick; commentary by F. Marton, N. Ueno, M. Chi and J. Slotta; and my responses (Between brain and behavior: Response to Ference Marton; The pot calls the kettle unsituated: Response to Naoki Ueno; Ontologies in pieces: Response to M. Chi and J. Slotta).

diSessa, A. A., Hoyles, C., Noss, R., with Edwards, L. (1995). ***Computers and Exploratory Learning***. Berlin: Springer Verlag. Edited Volume.

diSessa, A. A. (2000). ***Changing Minds: Computers, Learning, and Literacy***. Cambridge, MA: MIT Press.

diSessa, A. A., Levin, M., & Brown, N. (2016). ***Knowledge and Interaction: A synthetic agenda for the learning sciences***. New York, New York: Routledge.

Gueudet, G., Bosch, M., diSessa, A., Kwon, O. N., Verschaffel, L. (2016). ***Transitions in mathematics education***. ICME-13 Topical Surveys (G. Kaiser, Series Ed.). Switzerland: Springer International.

Research Journal Articles:

diSessa, A. A. (1974). A quantization of fields with mass in two-dimensional Euclidian space. ***Physical Review C,*** 2926-2932.

diSessa, A. A. (1974). Quantization on hyperboloids and full space-time field expansion. ***Journal of Mathematical Physics***, ***15,*** 1892-1900.

Abelson, H., diSessa, A. A., and Rudolph, L. (1975). Velocity space and the geometry of planetary orbits. ***American Journal of Physics, 43***, 579-589.

diSessa, A. A. (1980). Momentum flow as an alternative perspective in elementary mechanics. ***American Journal of Physics, 48***, 365-369.

diSessa, A. A. (1980). Computation as a physical and intellectual environment in learning physics. Invited article for special issue of ***Computers and Education***, ***4***(1), 67-75.

diSessa, A. A. (1981). An elementary formalism for general relativity. ***American Journal of Physics, 49***, 401-411.

diSessa, A. A. (1982). Unlearning Aristotelian physics: A study of knowledge-based learning. ***Cognitive Science, 6,*** 37-75.

diSessa, A. A. (1985). A principled design for an integrated computational environment. ***Human-Computer Interaction, 1***(1), 1-47.

diSessa, A. A. (1986). Artificial worlds and real experience. Invited article for a special issue on Artificial Intelligence and Education, ***Instructional Science, 14***(3-4)***,*** 207-227. (Appeared previously as "Computers and experience in learning science," in ***Theoretical Papers from Logo 85***, MIT, Cambridge, MA, July, 1985.)

diSessa, A. A. and Abelson, H. (1986). Boxer: A reconstructible computational medium. Invited paper for a special issue on Teaching Programming, ***Communications of the ACM, 29***(9), 859-868.

diSessa, A. A. (1987). The third revolution in computers in education. ***Journal of Research in Science Teaching, 24***(4) 343-367. (This is an edited version of a report of the same name commissioned by the Committee on Mathematics, Science and Technology of the Commission on Behavioral and Social Sciences and Education, National Academy of Sciences, October, 1984.)

diSessa, A. A., Abelson, H., & Ploger, D. (1991). An Overview of Boxer. ***Journal of Mathematical Behavior***, ***10***(1), 3-15. This is the lead chapter in a special issue devoted to work on Boxer, composed of 5 papers from our group.

Adams, S. and diSessa, A. A. (1991). Learning by cheating: Children's inventive use of a Boxer microworld. ***Journal of Mathematical Behavior***, ***10***(1), 79-89.

diSessa, A. A. , Hammer, D., Sherin, B. & Kolpakowski, T. (1991). Inventing graphing: Meta-representational expertise in children. ***Journal of Mathematical Behavior***, ***10***(2), 117-160.

Smith, J. P., diSessa, A. A., & Roschelle, J. (1993). Misconceptions reconceived: A Constructivist analysis of knowledge in transition. ***Journal of the Learning Sciences***, ***3***(2), 115-163.

Sherin, B., diSessa, A. A., & Hammer, D. M. (1993). Dynaturtle revisited: Learning physics through collaborative design of a computer model. ***Interactive Learning Environments***, *3*(2), 91-118.

Linn, M. C., diSessa, A., Pea, R. D., & Songer, N. B. (1994). Can research on science learning and instruction inform standards for science education? ***Journal of Science Education and Technology***, ***4***(3), 7-15.

diSessa, A. A. (tr. A. Chioccariello) (1995). Insegnare il Moto con Boxer. ***Technologie Didattiche***, n. 7, 21-32. (Revised and translated version of "The Many Faces of a Computational Medium," in diSessa, et al., ***Computers and Exploratory Learning***.)

diSessa, A. A. (1996). Faculty Opponent Review: On Mole and Amount of Substance: A Study of the Dynamics of Concept Formation and Concept Attainment. ***Pedagogisk Forskning i Sverige***. 1(4), 233-243.

diSessa, A. A. & Sherin, B. (1998). What changes in conceptual change? ***International Journal of Science Education***, ***20***(10), 1155-1191.

Friedman, J. & diSessa, A. A. (1999). What should students know about technology? The case of scientific visualization. ***International Journal of Technology and Science Education***, ***9***(3), 175-196.

diSessa, A. A. & Sherin, B. (2000). Meta-Representation: An Introduction. ***Journal of Mathematical Behavior, 19***(4), 385-398***.*** (Introductory article in a special issue on meta-representational competence consisting of 5 papers from our NSF-sponsored project work.)

Cobb, P., Confrey, J., diSessa, A., Lehrer, R., & Schauble, L. (2003). Design Experiments in Education Research. ***The Educational Researcher***, ***32***(1), 9-13.

Bamberger, J., & diSessa, A. (2003). Music as embodied mathematics: A study of a mutually informing affinity. ***International Journal for Computers and Mathematics Learning***, ***8***, 123-160.

diSessa, A. A. (2004). Meta-representation: Native competence and targets for instruction. ***Cognition and Instruction***, ***22***(3), 293-331.

diSessa, A. A., & Cobb, P. (2004). Ontological innovation and the role of theory in design experiments. ***Journal of the Learning Sc***iences, ***13***(1), 77-103.

diSessa, A. A. (2004). Introduction to the special issue on component computing in education. ***Interactive Learning Environments***, ***12***(1-2), 1-6.

diSessa, A. A., Azevedo, F., & Parnafes, O. (2004). Issues in component computing: A synthetic review. ***Interactive Learning Environments***, ***12***(1-2), 109-159.

diSessa, A. A. (2004). Reflections on component computing from the Boxer Project's perspective. ***Interactive Learning Environments***, ***12***(1-2), 161-165.

diSessa, A. A., Gillespie, N., & Esterly, J. (2004). Coherence vs. fragmentation in the development of the concept of force. ***Cognitive Science***, ***28***, 843-900.

Parnafes, O, & diSessa, A. A. (2005). Relations between types of reasoning and computational representations. ***International Journal for Computers and Mathematics Learning***, ***9***(3), 251-280.

diSessa, A. A. (2007). Changing conceptual change. ***Human Development***, ***50***(1), 39-46.

diSessa, A. A. (2007). An interactional analysis of clinical interviewing. ***Cognition and Instruction***, ***25***(4), 523-565.

diSessa, A. A. (2008). A "theory bite" on the meaning of scientific inquiry: A companion to Kuhn and Pease. ***Cognition and Instruction***, ***26***(4), 560-566. DOI: 10.1080/07370000802391760

Levrini, O., & diSessa, A. A. (2008). How students learn from multiple contexts and definitions: Proper time as a coordination class. ***Physical Review Special Topics: Physics Education Research***, ***4***, 010107.

Azevedo, F. S., diSessa, A. A., & Sherin, B. (2012) An evolving framework for describing student engagement in classroom activities. ***Journal of Mathematical Behavior***, ***31***, 270–289. doi: 10.1016/j.jmathb.2011.12.003

Kapon, S., & diSessa, A. A. (2012). Reasoning through instructional analogies. ***Cognition and Instruction***, ***30***(3), 261-310.

Parnafes, O., & diSessa, A. A. (2013). Microgenetic learning analysis: A methodology for studying knowledge in transition. ***Human Development***, ***56***(5), 5-37.

diSessa, A. A. (2014). The construction of causal schemes: Learning mechanisms at the knowledge level. ***Cognitive Science***, ***38***(5), 795-850.

diSessa, A. A. (2017). Conceptual change in a microcosm: Comparative analysis of a learning event. ***Human Development***, ***60***(1), 1-37. doi: 10.1159/000469693

diSessa, A. A. (2017). Une introduction accessible a la "Connaissance Par Morceaux": modelisation des types de connaissances et de leurs roles dans l'apprentissage (Ghislaine Gueudet, avec Andrea diSessa, François Coquet, Gérard Sensevy et Andrée Tiberghien, Trans.). ***Éducation & Didactique, 11***(2), 215-231. (Translation of the book chapter: A friendly introduction to "Knowledge in Pieces," in ***Invited lectures from the 13th International Congress on Mathematical Education.)***

diSessa, A. A. (2018). Computational literacy and "The Big Picture" concerning computers in mathematics education. ***Mathematical Thinking and Learning***, ***20***(1), 3-31. (Special issue on "Computational Thinking and Mathematics Learning.") doi: 10.1080/10986065.2018.1403544

diSessa, A. A. (in press). Gaming the future: Science and practice in advancing constructionism. ***British Journal of Educational Technology***.

Book Chapters:

diSessa, A. A. (1978). On learnable representations of knowledge: A meaning for the computational metaphor. In J. Lochhead and J. Clement (Eds.), ***Cognitive Process Instruction*** (pp. 239-266). Franklin Institute Press.

diSessa, A. A. (1983). Phenomenology and the evolution of intuition. In D. Gentner and A. Stevens (Eds.), ***Mental Models.*** Hillsdale, NJ: Lawrence Erlbaum, 15-33.

diSessa, A. A. (1985). Learning about knowing. In E. Klein (Ed.), ***Children and Computers*** (pp. 97-124), New Directions for Child Development No. 28. San Francisco: Jossey-Bass Inc.

diSessa, A. A. (1986). Models of computation. In D. A. Norman and S. W. Draper (Eds.), ***User Centered System Design: New Perspectives on Human-Computer Interaction*** (pp. 201-218)**.** Hillsdale, NJ: Lawrence Erlbaum.

diSessa, A. A. (1986). Notes on the future of programming: Breaking the utility barrier. In D. A. Norman and S. W. Draper (Eds.), ***User centered system design: New perspectives on human-***

computer interaction (pp. 125-152). Hillsdale NJ: Lawrence Erlbaum. (An extended version of a paper that originally appeared in ***Pre-Proceedings of Logo 84,*** Cambridge, MA, June, 1984.)

diSessa, A. A. (1986). Phenomenology and the evolution of intuition. In C. Janvier (Ed.), ***Problems of representation in the teaching and learning of mathematics.*** Hillsdale, NJ: Lawrence. (Selections from and commentary on the paper by the same name, previously published by Lawrence Erlbaum in ***Mental Models,*** 1983.)

diSessa, A. A. (1986). Principles of design for an integrated computational environment for education. In B. Sendov and I. Stanchev (Eds.), ***Children in an information age: Tomorrow's problems today*** (97-109). Selected papers from the international conference, Varna, Bulgaria, May 1985. NY: Pergamon. An abridged version appears in ***COM 3, Journal of the Computer Education group of Victoria, Australia***, ***11***(4), 1985.

diSessa, A. A. (1987). Artificial worlds and real experience. In R. Lawler and M. Yazdani (Eds.) ***Artificial intelligence and education*** (55-77). Norwood, NJ: Ablex. (Reprinted from the article of the same name which appeared in ***Instructional Science, 14,*** 1986.)

diSessa, A. A. (1987). Reference and data construction in Boxer. In M. J. Tauber and P. Gorny (Eds.), ***Visual Aids in Programming*** (pp. 151-162)**.** Heidelberg: Springer.

diSessa, A. A., and Ploger, D. (1987). Cognition and science education. Commissioned by the American Association for the Advancement of Science for the National Forum for School Science yearbook, ***The Year in School Science*** (pp. 15-39)**.** Washington, D.C.: AAAS.

diSessa, A. A. (1988). Knowledge in pieces. In G. Forman and P. Pufall (Eds.), ***Constructivism in the Computer Age*** (pp. 49-70)**.** Hillsdale, NJ: Lawrence Erlbaum.

diSessa, A. A. (1988). What it will mean to be educated in 2020. In R. Nickerson & P. Zodhiates (Eds.), ***Technology in Education: Looking Toward 2020*** (pp. 43-66). Hillsdale, NJ: Lawrence Erlbaum.

diSessa, A. A. & Abelson, H. (1989). Boxer: A reconstructible computational medium. In E. Soloway and J. C. Spohrer (Eds.) ***Studying the Novice Programmer*** (pp. 467-481). Hillsdale, NJ: Lawrence Erlbaum. (Reprinted from the article of the same name in the ***Communications of the ACM***, 1986.)

diSessa, A. A. (1990). Social niches for future software. In M. Gardner, J. Greeno, F. Reif, A. Schoenfeld, A. diSessa & E. Stage (Eds.), ***Toward a Scientific Practice of Science Education,*** Hillsdale, NJ: Lawrence Erlbaum, 301-322.

diSessa, A. A. (1991). New intelligence with information technology. In H. Rowe (Ed.) ***Intelligence: Reconceptualization and Measurement,*** Hillsdale, NJ: Lawrence Erlbaum, 245-265.

diSessa, A. A. (1991). Local sciences: Viewing the design of human-computer systems as cognitive science. In J. M. Carroll (Ed.), ***Designing Interaction: Psychology at the Human-Computer Interface***. NY: Cambridge University Press, 162-202.

diSessa, A. A. (1991). Epistemological micromodels: The case of coordination and quantities. In J. Montangero & A. Tryphon (Eds.), ***Psychologie génétique et sciences cognitives*** (pp. 169-194). Volume from the Eleventh Advanced Course. Geneva: Archives Jean Piaget.

diSessa, A. A. (1992). Images of learning. In E. De Corte, M. C. Linn, H. Mandl, and L. Verschaffel (Eds.), ***Computer-based learning environments and problem solving***. Berlin: Springer, 19-40.

diSessa, A. A. (1994). Speculations on the foundations of knowledge and intelligence. In D. Tirosh (Ed.), ***Implicit and Explicit Knowledge: An Educational Approach*** (pp. 1-54). Norwood, NJ: Ablex.

diSessa, A. A. (1994). Comments on Ed Dubinsky's chapter. (The theory and practice of capitalizing on diverse views concerning learning.) In A. Schoenfeld (Ed.), ***Mathematical thinking and problem solving*** (pp. 248-256)**.** Hillsdale, NJ: Lawrence Erlbaum Associates,.

diSessa, A. A., (1995). The many faces of a computational medium. In A. diSessa, C. Hoyles, R. Noss, with L. Edwards (Eds.), ***Computers and Exploratory Learning*** (pp. 337-359). Berlin: Springer Verlag.

diSessa, A. A., (1995). Epistemology and systems design. In A. diSessa, C. Hoyles, R. Noss, with L. Edwards (Eds.), ***Computers and Exploratory Learning*** (pp. 15-29). Berlin: Springer Verlag.

diSessa, A. A., Hoyles, C., Noss, R., and Edwards, L. (1995). Computers and exploratory learning: Setting the scene. In A. diSessa, C. Hoyles, R. Noss, with L. Edwards (Eds.), ***Computers and Exploratory Learning*** (pp. 1-12). Berlin: Springer Verlag.

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diSessa, A. A. (2020). Constructionism – A partitioning of concerns. In B. Tangney, J. Byrne, & C. Girvan (Eds.), ***Proceedings of the 2020 Constructionism Conference*** (pp. 11-14). Dublin, Ireland: Dublin University, Trinity College. URI: hdl.handle.net/2262/92768

Other Publications:

diSessa, A. A. and White, B. (1982, August). Learning physics from a dynaturtle. ***BYTE Magazine***, 324.

diSessa, A. A. and Globerson, T. (1984, June). The effect of age and cognitive style on children's intuitions of motion. A paper presented at ***Logo 84,*** Cambridge, MA.

diSessa, A. A. (1986). From Logo to Boxer. ***Australian Educational Computing***, **1** (1), 8 – 15. (A version also appeared in ***Lectures at the Monash Mathematics Education Centre,*** Monash University, Clayton Victoria Australia.)

Ploger, D., & diSessa, A. A. (1987). Rolling dice: Exploring probability in the Boxer computer environment. Boxer Technical Report E1. Berkeley, CA: School of Education, University of California.

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diSessa, A. A. (1989). Beyond problem solving. ***The Educator***. **3**(3), 8-11.

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diSessa, A. A. (1990). The Computer Revolution in the Classroom, ***Teaching at Berkeley***, No. 23, p. 3.

Hammer, D., & diSessa, A. A. (1990). Children are not abstractions. ***The Physics Teacher***, 28(7), 440. Letter to the Editor.

diSessa, A. A. (1996). [For the Campus Computing and Communications Policy Board, Instructional Technology Subcommittee] Steps Toward Becoming a Technologically Wise University: Strategic Planning for Technology's Use in Instruction. http://socrates.berkeley.edu/~cccpb-it/

diSessa, A. A. (1999). How should students learn? ***Journal of Computer Documentation***, ***23***(2), 14-18.

diSessa, A., A. (1999). Twenty reasons why you should use Boxer (Instead of Logo). ***The Logo Exchange***, ***17***(3), 7-19. (Reprinted from the paper of the same name published in the Sixth European Logo Conference.)

diSessa, A. A., (2001). Inventing graphing: A video case study. Unpublished CD ROM. The Boxer Group, University of California, Berkeley.

diSessa, A. A. (2001). Overview of Component Project Profiles. Web-posted Technical Report. University of California, Berkeley: The Boxer Project. ftp://soe.berkeley.edu/pub/boxer/Distribution/Overview_of_Profiles.pdf

Parnafes, O., & diSessa, A. A. (2001). A Profile of the ESCOT Educational Component Software Project. Web-posted Technical Report. University of California, Berkeley: The Boxer Project. ftp://soe.berkeley.edu/pub/boxer/Distribution/ESCOT_Profile.pdf

diSessa, A. A. (2001). Component Computing in a Computational Medium. Web-posted Technical Report. University of California, Berkeley: The Boxer Project. ftp://soe.berkeley.edu/pub/boxer/Distribution/Boxer_Profile.pdf

diSessa, A. A. (2008). A note from the editor. ***Cognition and Instruction***, ***26***(4), 427-429.

diSessa, A. A. (2009). A new approach to conceptual change? … Maybe: A comment on Amin. Human Development (Letter to the Editor; July 1, 2009), 1-6.

diSessa, A. A. (2012). Editor's Note. ***Cognition and Instruction***, ***30***(4), 311.

diSessa, A. A., & Parnafes, O. (March 2013). This is about the ways in which theories are developed! Response to commentaries by Ackermann, Karmiloff-Smith, Fazio & Siegler. ***Human Development*** (Letters to the Editor), 2-6.

diSessa, A. A. (2015). Alternative conceptions and p-prims. In R. Gunstone (Ed.), ***Encyclopedia of Science Education*** (pp. 33-37). Dordrecht, The Netherlands: Springer.

diSessa, A. A. (December 2017). You can't do everything at once: Responses to the commentaries by Amin and Gupta. ***Human Development*** (Letters to the Editor).

Li, Y., Schoenfeld, A., diSessa, A., Graesser, A., Benson, L., English. L., Duschl, R. (2019). On thinking and STEM education. ***Journal for STEM Education Research***. doi: 10.1007/s41979-019-00014-x

Li, Y., Schoenfeld, A., diSessa, A., Graesser, A., Benson, L., English. L., Duschl, R. (2020). Computational thinking is more about thinking than computing. ***Journal for STEM Education Research***. doi: 10.1007/s41979-020-00030-2

Mørch, A., Kafai, Y. (2022). Computational Thinking as a Social Movement. (Interview with Andrea diSessa) ***KI - Künstliche Intelligenz***. https://doi.org/10.1007/s13218-022-00754-w

Invited Lectures, Presentations, Meetings (1997 – Present)

Computational Media and New Literacies: Learning More and Better; also seminar on Learning Motion with Boxer. Ohio State University "Technology for Communities of Learning" Seminar Series, Columbus, Ohio, February 17-18, 1997

Computational Media and New Literacies: Cognitive, Social and Material Perspectives.

Cognitive Science Department, University of California San Diego, La Jolla, CA, February 28, 1997.

Computational Media and New Literacies: Cognitive, Social and Material Perspectives; also several informal seminars. Florida Atlantic University, Boca Raton and Davie campuses. March 13-15, 1997.

American Educational Research Association Annual Meeting, Chicago, March 27, 1997.

From Pictures to Scientific Representations: Studies in Meta-Representational Competence. Chair and Organizer (symposium session).

Meta-Representational Competence in Image Processing: The Role of Technology (with Jeffrey Friedman). Paper presented at the symposium, From Pictures to Scientific Representations: Studies in Meta-Representational Competence.

Does the Mind Know the Difference Between the Physical and Social Worlds? Invited plenary presentation at the Jean Piaget Society annual meeting. Santa Monica, CA, June 19, 1997.

Open Toolsets: New Ends and New Means in Learning Mathematics and Science with Computers. Invited plenary presentation at the 21st Conference of the International Group for the Psychology of Mathematics Education. Lahti, Finland, July 15, 1997.

Twenty Reasons You Should Use Boxer. EuroLogo 97. Budapest, Hungary, August 22, 1997.

Open Toolsets: A Technological Basis for Really Improved Learning. Computer Science, University of Colorado, Boulder, CO, September 24, 1997.

What Does It Mean to Know? National Academy of Education Annual Meeting, Boulder, CO, September 26, 1997.

What Do Just Plain Folks Know About Physics? Center for Advanced Study in the Behavioral Sciences, Stanford, CA, February 23, 1998.

Comments on Computational Literacies. National Research Council, Computer Science and Telecommunications Board, Committee on Information Technology Literacy, Washington, D.C., April 3, 1998.

American Educational Research Association Annual Meeting, San Diego, CA, April 13-17, 1998.

From Pictures to Scientific Representations II: Investigating and Fostering Students' Representational Competence. Chair (symposium session).

Challenges and Opportunities of a Modeling Curriculum. Commentator (symposium session).

Using Science and Design Experiments to Understand Innovative Uses of Technology in Classrooms. Commentator (symposium session).

Disney/UCLA Learning Lab Workshop. UCLA School of Education, LA, CA, April 19, 1998.

Meta-Representation: Native Competence and Technological (and other) Support for Learning. Freudenthal Institute, Utrecht, The Netherlands, June 17-19, 1998.

Learning to "See" Like a Scientist. International Association of Applied Psychology. San Francisco, August 13, 1998.

National Academy of Education Annual Meeting, Palo Alto, October 15, 16, 1998.
(Commentator, Spencer/NAE Fellows session.)

What Changes in Conceptual Change? European Association for Research on Learning and Instruction, Workshop on Conceptual Change. Cercidilla, Spain, Nov. 5-7, 1998.

Computational Media and New Literacies: Cognitive, Social and Material Perspectives. Cognition and Development Seminar, University of California, Berkeley. April 12, 1999.

American Educational Research Association Annual Meeting, Montreal, April 19-23, 1999.

Islands of Truth and Wisdom: How Many Epistemologies Do We Need? Organizer, Chair, and Participant (invited symposium session).

Students' Criteria for Representational Adequacy. Paper presented in the symposium "Teaching and Learning about Representations."

Why Cognitive Ecology is a Good Idea. Paper presented in the symposium "Surveying the Conceptual Landscape: New Views of Conceptual Change.

What Do "Just Plain Folks" Know about Physics? Aoyama Gakuin University, Tokyo, Japan, May 25, 1999.

What Changes in Conceptual Change? Keio University, Tokyo, Japan, May 26, 1999.

A Span of "Concepts": From P-Prims to Coordination Classes. Keio University, Tokyo, Japan, May 26, 1999.

Foundations of Conceptual Knowledge in Physics. Kyoto University, Kyoto, Japan, May 29, 1999.

NSF REPP Principal Investigators' Meeting. NSF, Arlington, VA, June 3-5, 1999.

What Cognitive Science Says about Learning (with Technology). NSF Workshop on Improving Undergraduate Education in the Mathematical and Physical Sciences Through Use of Technology. Arlington, VA, July 21, 1999.

Why the Concept of "Concept" Just Won't Do It: The Importance of Theory. American Association of Physics Teachers/Physics Education Research Conference, San Antonio, Texas, August 9, 1999.

Making Programming Easier. MindFest. MIT Media Lab, Cambridge, MA, October 23, 1999.

From Microworlds to Tool Sets: Why the Form of Software Matters. I3 Spring Days. Athens Greece, March 1, 2000.

Tracking the Inscrutable Knowledge Element: Revisiting the Problem of Knowledge at the Beginning of the 21st Century. Spencer/National Academy of Education Post-Doctoral Fellows Retreat, Cambridge, MA, March 10, 2000.

What Changes in Conceptual Change? Lawrence Hall of Science, Berkeley, CA, April 20, 2000.

American Educational Research Association Annual Meeting, New Orleans, April 24-28, 2000.

Researching Model-Based Instruction in Middle School Mathematics and Science: Discussion of a Collaborative Reform Effort. Commentator (symposium).

Designing Knowledge Representations and Epistemic Practices for Science Learning. Commentator (interactive symposium).

Multiple Perspectives on the Development of Multiplicative Reasoning. Commentator (symposium).

NSF ROLE Program Review Panel. Washington, D.C., June 25-27, 2000.

A Complex Systems Approach to Conceptual Change. Annual Meeting of the Cognitive Science Society. Philadelphia, August 13, 2000.

NSF IGERT Panel Review. Alexandria, VA, September 25-26, 2000.

Open Toolsets and Collaborative Design of Educational Learning Software. The Concord Consortium. Concord, MA, September 27, 2000.

Computational Media and New Literacies: Cognitive, Social and Material Perspectives. Tufts University. Medford, MA, September 27, 2000.

Inventing Graphing; A Video Case Study of Collaborative Design of Representations. NCISLA Case Study Workshop. Ashland, MA, November 1-3, 2000.

Computational Media and New Literacies: Cognitive, Social and Material Perspectives. Northwestern University. Evanston, Illinois, November 17, 2000.

Workshop on Component Computing in Education. (Sponsored by the SRI ESCOT Project.) Half Moon Bay, CA, January 7-10, 2001.

ROLE PI Meeting. National Science Foundation, Alexandria, VA, January 11-12, 2001.

Computational Media and New Literacies. American Association for the Advancement of Science. San Francisco, CA, February 19, 2001.

American Educational Research Association Annual Meeting, Seattle, WA, April 10-13, 2001.

Distributed Development: Social Perspectives on Computational Literacies. In "Turning Points in Educational Technology" (symposium).

Using a Case Study to Make General Points about Students' Intuitive Epistemologies. In "Intentional Conceptual Change" (symposium).

The Meaning of Force: Investigating Children's Changing Understanding Across Time and Context. N. Gillespie, A. diSessa, & J. Esterly. In "Student Learning and Understanding of Science" (symposium).

Constructing Process: Varieties of Programming Experience. Chair and Commentator (symposium).

International Journal for Computers and Mathematical Learning, Executive Editorial Board Meeting (conference planning), Sintra, Portugal, April 27-29, 2001.

Computational Media and New Literacies. Artificial Intelligence and Education Conference Keynote Address, San Antonio, Texas, May 23, 2001.

Advisory Panel, NSF-sponsored project: Technology & Model-Based Conceptual Assessment. Columbus, Ohio, May 28-29, 2001.

Meta-Representational Competence: An Introduction. Jean Piaget Annual Meeting, Berkeley, CA, June 1, 2001.
How Students Think about Physics When You Aren't Watching. Norwegian Physical Society Annual Meeting, Trondheim, Norway, June 14, 2001.
Computational Media and New Literacies: New Foundations for Thinking and Learning. Plenary Address at the Norwegian Physical Society Annual Meeting, Trondheim, Norway, June 14, 2001.

Fostering the Coevolution of Mathematical Learning Practices and Technologies, International Workshop. Institute of Education, University of London, London, UK, Sept. 6-9, 2001.
German-American International Conference: Research on Learning Technologies and Technology-Supported Education, Tübingen, Germany, May 11-12, 2001.
A Theory of Concepts: Theoretical and Practical Perspectives. Invited talk at the Annual Meeting of the American Association of Physics Teachers, Philadelphia, PA, January 21, 2002.
Workshop on Design Experiments, NSF-sponsored, Santa Fe, NM, March 14-17, 2002.

American Educational Research Association Annual Meeting, New Orleans, April 1-5, 2002.

Critical Issues in Component Computing, with F. Azevedo and O. Parnafes. In "Component Computing: Fad or Fabulous Innovation" (symposium).
Component Computing: Fad or Fabulous Innovation, symposium, chair and organizer.

What is the Form of Students' Ideas about Force?, with N. Gillespie and J. Esterly. In "The Nature of Students' Scientific Knowledge: Origins, Development, and Pedagogical Goals" (symposium).

The Nature of Students' Scientific Knowledge: Origins, Development, and Pedagogical Goals, symposium, chair and organizer.
Design Experimentation Research Methods: Advancing Theories of Context, Learning, and Design, symposium, discussant.

German-American International Conference: Research on Learning Technologies and Technology-Supported Education, Tampa Bay, FL, May 6-7, 2002.
Computational Media and New Literacies: The Big Picture for Learning with Computers. Information and Communication Technologies in Education: 3rd Hellenic Conference. University of the Aegean, Rhodes, Greece, Sept. 28, 2002.

Computational Media and New Literacies: Cognitive, Social and Material Perspectives. Walker-Ames public talk. University of Washington, Seattle, Feb. 18, 2003.
Computational Media and New Literacies: Cognitive, Social and Material Perspectives. Closing Plenary at CAL03 (Computer Aided Learning), Belfast, Ireland, April 10, 2003.

International School of Physics "Enrico Fermi," Italian Physical Society. Varenna, Italy, July 15-25, 2003.

How Should We Go About Attributing Knowledge to Students?

Contextuality, Coordination, and Conceptual Change

Principles for Teaching Physics with Computers

Naïve Meanings of Force: Coherence vs. Fragmentation. ***Annual Conference of the Cognitive Science Society***, Boston, MA, August 2, 2003.

National Academy of Education Annual Meeting and Post-Doctoral Fellows Retreat (roundtable leader), Boston, October 16-18, 2003.

Coherence vs. Fragmentation in Conceptual Development. Learning Lab Denmark, Copenhagen, April 28, 2004.

New Literacies—Halves and Wholes: What is Really Important about New Media? Keynote address for the symposium On-line Mathematical Investigation as a Narrative Experience. University of Western Ontario, London, Ontario, Canada, June 11, 2004.

Within Epsilon of Not Programming. Panel on "The Educational Value of Programming." International Conference on the Learning Sciences, Santa Monica, CA, June 25, 2004.

What Coordination Has to Say about Transfer. American Association of Physics Teachers (Physics Education Research), Sacramento, CA, August 5, 2004.

Talks as part of PhD course I was in charge of at the Learning Lab Denmark, Copenhagen, Denmark, March 21-22, 2005.

What (and Why) Is Design-Based Research in Education?

A Personal View of Science and Design in the Real World: Issues from the Margin.

The Patterns Project: Explorations in the Foundations of Curriculum. Learning Lab Denmark, Copenhagen, Denmark, March 29, 2005.

American Educational Research Association Annual Meeting, Montreal, Canada, April 10-15, 2005.

Making Meaning with Representations: Contrasting Perspectives (symposium). Commentator.

On the Nature of Students' Knowledge: Contrasting Epistemologies in Science and Mathematics Education Research (symposium). Commentator.

Differing Conceptualizations of Concepts: International Society of the Learning Sciences Panel. Presenter/Panel-member.

Can Students Discover Foundational Models of Science and Mathematics? ORD2005, Ghent, Belgium, May 31, 2005.

Design-Based Research: Theory and Practice. Keynote address, ORD2005, Ghent, Belgium, May 31, 2005.

Meta-Representation and Meso-Genesis. Jean Piaget Society Annual Meeting, Vancouver, Canada, June 4, 2005.

Computational Media and New Literacies. Keynote address. Children's Learning in a Digital World Conference. Brock University, St. Catherines, Ontario, Canada, August 19, 2005.

Workshop on Boxer and Learning. Learning Lab Denmark, Danish Pedagogical University, Copenhagen, Jan. 10, 2006.

Some Unusual Perspectives on Engagement. Serious Play Seminar Series, Danish Pedagogical University, Copenhagen, January 11, 2006.

Computational Media and the Theory of Literacy. Center for Science Education, Copenhagen University, Copenhagen, January 12, 2006.

Managing Complexity: The Dialectic of Simplification and Complexification. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, April 7, 2006.

Situated or Situative: A Dialectical Approach to Cognition. (A tribute to Jim Greeno) Paper presented at the Association for Psychological Science. New York, May 28, 2006.

Where is the Creativity in Learning Science Concepts? Paper presented at the annual meeting of the Jean Piaget Society. Baltimore, June 3, 2006.

The Role of Abstract Knowledge in Accounts of Situated Learning. Paper presented in the symposium "What Is a Situation: A Constructivist Critique of Authentic Inquiry." International Conference of the Learning Sciences, June 29, 2006.

An Introduction to Coordination Classes. Paper presented in the symposium "Theory in Pieces: The Communal Development of a Theory." International Conference of the Learning Sciences. Bloomington, IN, June 30, 2006.

Design-Based Research: Theory and Practice; The Patterns Project as Design-Based Research. Talks at the London Knowledge Lab, University of London. London, UK, November 2-3, 2006.

Coordination Classes: A Theory of Concepts. Learning Research and Development Center, Pittsburgh, PA, December 11, 2006.

The Patterns Project: Intuitive Knowledge as a Foundation for Conceptual Competence in Science. Carnegie Mellon University, December 12, 2006.

The Latest on the War Between the "Theory Theory" and "Knowledge in Pieces". Department of Psychology, UC Santa Cruz, February 12, 2007.

New Horizons in Representational Literacy. Learning Lab Denmark, Copenhagen, March 6, 2007.

Thinking Through Representations: A Knowledge-in-Pieces Epistemological Perspective. Symposium: Commentator. American Educational Research Association Annual Meeting, Chicago, April 2007.

Why Do Mathematics and Science Education Research Look Different? Public talk as part of Distinguished Visitor activities. Center for Research in Mathematics and Science Education. San Diego State University, San Diego, CA, May 4-5, 2007.

The Patterns Project: Intuitive Knowledge as a Foundation for Conceptual Change. Cognitive Science Colloquium. TERC, Cambridge, MA, May 29, 2007.

Workshop on learning and new technology, Open Learning Initiative, Carnegie Mellon University, Pittsburgh, PA, July 1-2, 2007.

Advisory Board Meeting for NSF-sponsored project on framing and learning in physics. University of Maryland, College Park, July 16-17, 2007.

The Nature of Intuitive Knowledge and Its Role in Learning Science. Center for Advanced Study in the Behavioral Sciences, Stanford, CA, April 2, 2008.

The Construction of Causal Schemes. Vanderbilt University, Nashville, Tennessee, Feb. 10, 2009.

New Media and Computational Literacies. NRC/AAAS Workshop on Computational Thinking. Washington, DC, Feb. 19, 2009.

The Construction of Causal Schemes. University of Washington, Seattle, WA, March 6, 2009.

Sessions at American Educational Research Association, San Diego, April 13-17, 2009.

Knowledge Analysis Workshop. Participant, panel discussion.

Modeling Micro-Processes of Learning and Conceptual Change. Structured poster session: introduction and commentator.

Levrini, O., & diSessa, A.: How Humble Theory and Analysis of Classroom Data Improve Each Other. Poster in "Modeling Micro-Processes of Learning and Conceptual Change" session.

Knowledge in Pieces and Instruction. In the symposium "Designing for Conceptual Change." European Association for Research in Learning and Instruction, Amsterdam, The Netherlands, August 28, 2009.

The Future of STEM Curricula and Instructional Design. NSF-Sponsored conference on emerging prospects for curricula and materials in science education. Landsdowne Resort, VA. December 1-3, 2009.

Comparing Theories of Conceptual Change: An Empirical Study. European University of Cyprus, Nicosia, January 29, 2010.

How Students Really Learn: A "Knowledge in Pieces" View of Instruction. European University of Cyprus, Nicosia, January 30, 2010.

Sessions at American Educational Research Association, Denver, April 30 – May 4, 2010.

Studying Motivation and Learning Online: Prospects and Challenge (symposium). Chair and discussant.

Dialectical Approaches to Cognition (symposium). Organizer and chair.

A reinterpretation and critique of Latour's externalist theory of reference. Paper presented in the symposium "Dialectical Approaches to Cognition."

Knowledge Transformation, Design, and Technology (symposium). Discussant.

Presentations at the 7th Biennial Meeting of the European Association for Research on Learning and Instruction, Special Interest Group on Conceptual Change. Leuven Belgium, May 24-27, 2010.

Studying Knowledge in Transition: Presenting Microgentic Learning Analysis (with Orit Parnafes). Paper presented in the symposium "Developing theories of learning and conceptual change: Reflections on the dialog between data analysis and theory building."

Plenary debate with Stella Vosniadou. Instructional Implications of Theories of Conceptual Change.

Knowledge in Pieces and the Study of Interaction. Presentation at the Annual KiP (Knowledge in Pieces) Workshop. Chicago, June 29, 2010.

Comments on Representational Practices and Modeling in the Disciplines. Discussant of the Symposium on Representational Practices and Modeling in the Disciplines. International Conference of the Learning Sciences, Chicago, June 30, 2010.

Advisory Board Meeting, NSF-sponsored project on mathematics via programming robots. Tertl Studios, Montpelier, VT, Sept. 30 – Oct. 1, 2010.

How Students Can Learn Science on the Basis of "Misconceptions." Tufts University, Center for Engineering Education and Outreach. Medford, MA, October 4, 2010.

Kapon, S. & diSessa, A.: On the Role of Prior Knowledge In Analogical Reasoning. In the symposium: "Examining Analogical Reasoning in the Process of Learning Science." American Educational Research Association Annual Meeting, New Orleans, April 8-12, 2011.

Planning Meeting: Project to Explore Uses of Data Captured from Adaptive Educational Technologies. National Academy of Education, Washington, DC, May 12, 2011.

How We Should Construe Cultural Diversity for the Purposes of Equitable Education. Invited plenary address at the Jean Piaget Society Annual Meeting, Berkeley, CA, June 3, 2011.

Comments on Science Curriculum as a Cultural Knowledge Domain. In the symposium "The growth and development of knowledge: Cultural genetic epistemology," Jean Piaget Annual Meeting, Berkeley, CA, June 2, 2011.

Presentations at the AERA Workshop on the "Integration of Knowledge Analysis and Interaction Analysis in Conceptual Change and Learning," Jun 5-8, 2011.

Overview of Knowledge Analysis and Knowledge in Pieces. Plenary.

Panel on Epistemological Issues

Panel on Methodological Issues.

Sessions at the Biennial Meeting of the European Association for Research on Learning and Instruction. Exeter, England, August 30 – September 3, 2011.

How High-Resolution Accounts of Knowledge Can Help Us Understand Learning. In the symposium on "Deconstructing Knowledge Construction: Multiple Perspectives on Identifying Knowledge Elements."

Kapon, S, & diSessa, A. A. Learning from analogies: A High Resolution Account of Knowledge in Development and Use. In the symposium on "Deconstructing Knowledge Construction: Multiple Perspectives on Identifying Knowledge Elements."

Panel member in "How to Publish in a Scholarly Journal."

Sessions at the annual meeting of the American Educational Research Association, Vancouver, BC, Canada. April 12 – 17, 2012.

Pre-conference workshop: "Integrative Approaches to the Analysis of Cognition and Learning." Co-organizer.

diSessa, A. A., Greeno, J. G., & Michaels, S.: Interaction Meets Knowledge: Revoicing in a Clinical Interview. Paper presented in the symposium "Integrating issues of Knowledge and Interaction in Analyses of Cognition and Learning."

Levin, M. & diSessa, A.: A Coordination Class Theory Lens on Disciplined Perception. Paper presented at the 8th International Conference on Conceptual Change (Biennial Meetings of the EARLI Special Interest Group on Conceptual Change). Trier, Germany, Sept. 1-4, 2012.

Modeling Conceptual Change at the Knowledge Level. Invited talk at the Workshop on Modeling Conceptual Change. Helsinki, Finland, Feb. 21, 2013.

Advisory Board Meeting. NSF-sponsored project "SimSAM: Bridging Student, Scientific and Mathematical Models with Expressive Technologies. Tufts University (Medford, MA), Feb. 25, 2013.

Knowledge in Pieces: How to Analyze the Process of Learning at High Resolution. Keynote address at the annual Research in Undergraduate Mathematics Education conference. Denver, CO, Feb. 27, 2014.

How Students Can Learn Science on the Basis of "Misconceptions." Colloquium in the Learning Sciences, Northwestern University, Evanston IL, May 15, 2014.

Five Powerful Ideas in Technology and Education. Opening Keynote, first "New Developments in Science and Technology Education" conference. Corfu, Greece, June 15, 2014.

Disciplined Perception as Seen through the lens of Coordination Class Theory. Paper presented in the symposium "Integrating Perspectives of knowledge and interaction: Is the whole greater

than the sum of the parts?" International Conference of the Learning Sciences. Boulder, CO, June 25, 2014.

Sessions at the Special Interest Group on Conceptual Change (SIG3 of the European Association for Research on Learning and Instruction), Bologna, Italy, August 26-29, 2014:

> Anticipating the Death of Conceptual Change. Presented at the Symposium on "The Life and Death of Conceptual Change: Content Analyses and Reflections on the Paradigm."
>
> Finding Identity. Commentary on the symposium "The Interplay between Identity and Conceptual Change: Productive Synergies and New Directions for Research."

diSessa, A. A., Greeno, J., Michaels, S., & O'Connor, C., Revoicing in Clinical Interviewing: Interaction Meets Knowledge. Presented in the symposium "A Conceptual and Empirical Exploration of the Concept of "Revoicing," at The 4th Congress for the International Society for Cultural and Activity Research. Sydney, Australia, Sept. 30, 2014.

Advisory Board Meeting. NSF-sponsored project "SimSAM: Bridging student, scientific and mathematical models with expressive technologies. Tufts University (Medford, MA), Nov. 17-18, 2014.

Talks series on the "knowledge in pieces" perspective as Velux Visiting Professor, Institut for Naturfagenes Didaktik (Department of Science Education), University of Copenhagen. Three two-hour talks:

> High-resolution accounts of knowledge and learning: The p-prims model of intuitive knowledge. Sept. 22, 2015.
>
> The coordination class model of concepts. Sept. 24, 2015.
>
> Methodology and further example studies: Design-based research and Microgenetic learning analysis. Sept. 30, 2015.

Dialectical approaches to cognition: The Knowledge and Interaction Project (KAIA). London Knowledge Laboratory. London, UK, Oct. 7, 2015.

Momentum flow as an alternative perspective in Newtonian mechanics. Niels Bohr Institute, Copenhagen, Denmark, Oct. 21, 2015.

How students can learn science on the basis of Misconceptions. UCSD, La Jolla, CA, Feb. 8, 2016.

Advisory Board Meeting. NSF-sponsored project: Interdisciplinary Study of Learning: Student Understanding of Linear Algebra in Physics." Arlington, VA, June 16, 2016.

Advisory Board Meeting. NSF-sponsored project: "Advancing Secondary Mathematics Teachers' Quantitative Reasoning." Berkeley, CA, July 8, 2016.

Talks at the International Congress of Mathematics Education, Hamburg Germany, July 24 – 31, 2016.

> False Choices in Research Paradigms: Integrating Studies of Knowledge and Social Interaction. (Early Researchers Day)

Knowledge in Pieces: A Framework for Studying Knowledge at High Resolution. Invited Lecture. (Invited talk)
Continuity versus Discontinuity in Learning Difficult Concepts. As part of a plenary panel.

Learning Science on the Basis of "Misconceptions": A High-Resolution Account of Knowledge and Learning. Technical University of Hamburg, Hamburg Germany, July 28, 2016.
Integrating Study of Knowledge and Social Interaction. Vanderbilt University, Nashville, TN, Feb. 16, 2016.
Considering Major Shifts in Physics Instruction. Conference on Foundations and Frontiers of Physics Education Research, Bar Harbor, Maine, June 22, 2017.
What If Your Project's Timeline Is 100 Years?: Big Ideas in Technology and Education. Keynote Address: Interaction Design for Children, ACM conference, Stanford, CA, June 28, 2017.
Workshop on How Students Learn Computer Science: Research. Google, Mountain View, CA, March 7-8, 2018.
Talks at the Psychology of Programming Interest Group Annual Workshop. London, UK, Sept. 5-7, 2018.

The Multiple Psychologies of Programming (Invited Talk)

"Hands On" with Boxer (Demonstration)

Learning Science on the Basis of "Misconceptions": A High-Resolution Account of Knowledge and Learning. Workshop on Conceptual Change. Hanse Wissenschaftskolleg (Institute for Advanced Study), Delmenhorst, Germany, November 28-30, 2018.

Scientific Foundations for Revolutionizing Physics Education. Physics Education for the 21st Century: "Visualizations," Institute of Physics (co-sponsored by the Royal Society), London, March 8, 2019.

Knowledge in Pieces: Principles; Futures and Collaborative Prospects. At the Knowledge in Pieces Community Workshop. Annual Meeting of the American Educational Research Association, Toronto, CA, April 4, 2019.

Computational Literacy: The Very Idea. Keynote plenary at the Inaugural Symposium of the Center for Computer Science and Learning Sciences, Northwestern University, Evanston, IL, April 19, 2019.

Computational Literacy: The very Idea. Webinar talk for the Mathematics Knowledge Network, Western University, Ontario, Canada, May 15, 2019.
A Critical Overview of the Landscape of AI and Education. Webinar talk for the Mathematics Knowledge Network, Western University, Ontario, Canada, May 15, 2019.

Diversity in Patterns of Theory Building. Presentation in the symposium on "The Interplay Between Educational Designs and Developing Theories of Learning." European Science Education Research Association Annual Meeting, Sept. 3, 2019, Bologna, Italy.

Computational Media: The Very Idea. Zoom webinar, Mathematics/Physics Seminar. Rochester Institute of Technology, May 5, 2021.

A Robust Theory of Physical Intuition: From Tracking Learning to Instructional Design. Discipline-based STEM Education Research Webinar. Cardiff / University College London, November 17, 2021.

Computational Literacy – A New Literacy for Learning and Working. Webinar, NICE (National Initiative on Cybersecurity Education), Feb. 15, 2022.

The Boxer Experience. Invited keynote address at the "Boxer Salon" Workshop, at <Programming> 2022. Porto, Spain (and online), March 21, 2022.

Television and Radio Appearances

Interview for ***Educational Computing***, PBS, aired in 1985.

Panel on the future of computers in Education, Bulgarian Television, 1985.

Interview for ***New Frontiers in Science***, RAI Italian Television, 1987.

Radio Interview on Australian Broadcasting Corporation, August, 1988.

Interview for BBC/Open University course on computers and education, September, 1989.

Interview for PBS/KQED TechNation, September 1, 2000.

Interview concerning "laptop schools," TechTV, April, 2004.

On-Line Video

Talks on "Computational Literacy & Mathematics Education" and "AI in Education." May 2019. http://mkn-rcm.ca/andy-disessa-webinars-may-2019/