

# Alan M. Lesgold

## *Curriculum Vitae*

*Home Address*  
1255 Murdoch Road  
Pittsburgh, PA 15217  
(412) 687-9826

*Campus Address*  
5616 Posvar Hall, School of Education  
University of Pittsburgh  
Pittsburgh, PA 15260  
(412) 648-1773  
FAX: (412) 648-1825

Electronic Mail: AL+@PITT.EDU

### **Education and Degrees**

B.A., Psychology (with high honor), Michigan State University, June, 1967.

A.M., Psychology, Stanford University, September, 1968.

Ph.D., Psychology, Stanford University, June, 1971.

### **Experience**

- 2000- Professor and Dean, School of Education, University of Pittsburgh.
- 1997-2000 Executive Associate Director, Learning Research and Development Center (LRDC), University of Pittsburgh. 1986-1997 Associate Director.
- 1985- University of Pittsburgh, Professor of Psychology and Intelligent Systems (Intelligent Systems appointment since 1987).
- 1971- Senior Scientist (formerly Research Associate), LRDC.
- 1986-1995 Co-Director, Graduate Program in Intelligent Systems Studies, Faculty of Arts and Sciences, University of Pittsburgh.
- 1983-1985 University of Pittsburgh, Director, Learning Skills Research Unit, LRDC.
- 1982-1983 Acting Associate Director, LRDC.
- 1980-1985 University of Pittsburgh, Research Associate Professor of Psychology. 1978-1980: Research Assistant Professor of Psychology. 1971-1978: Assistant Professor of Psychology.
- 1977-1983 Co-Director of the LRDC Computer Facility.

### **Awards and Affiliations**

Lifetime National Associate of the National Academies, National Research Council, 2004. Doctor Honoris Causa, Open Universiteit Nederland, September, 1999. 1995 Educom Medal for contributions to educational technology (awarded by Educom on recommendation of American Psychological Association). 2001 American Psychological Association Award for Distinguished Contributions of Applications of Psychology to Education and Training. 2004 Human Relations Awardee, Pittsburgh Chapter, American Jewish Committee. 2005 Power of One award, GLSEN. Fellow (Division of Experimental Psychology, Division of Educational Psychology, and Division of Applied Experimental and Engineering Psychologists), American Psychological Association, 1972-present. Fellow, American Psychological Society, 1988-present. Fellow, American Educational Research Association, 2008-present.

1983 President, Society for Computers in Psychology (formerly the National Conference for the Use of On-Line Computers in Psychology), 1981 Program Chair, Member, Steering Committee.

1988-1997 Secretary/Treasurer, Cognitive Science Society. 2002-2006 President, Applied Cognitive Psychology Division, International Association of Applied Psychology.

Alternate, Spencer Fellowship, National Academy of Education, 1976. Member, Sigma Xi. NSF Graduate Fellowship, Stanford, 1970-1971. NIMH Traineeship in General and Experimental Psychology, Stanford, 1967-1970. Phi Kappa Phi, Michigan State University, 1967. Psi Chi, Michigan State University, 1965. Honors College, Michigan State University, 1964-1967. Michigan State University Merit Scholarship, 1963-1967.

### **Community Service**

Chair, National Research Committee on Learning Sciences: Foundations and Applications to Adolescent and Adult Literacy, 2009-2011. Member, Pennsylvania Virtual High School Study Commission, 2008-2009. Governor appointee, 2005-6, Pennsylvania Training America's Teachers Commission. Board member: Pittsburgh Regional Center for Science Teaching, Jewish Learning Commission of United Jewish Federation, A+ Schools. 2005-present: First Vice President and then President, Pennsylvania Regional Board, Union for Reform Judaism, 2006-present. President, 2002-2004, Rodef Shalom Congregation. Member, 2006-present, Board of YouthWorks. Member, 2005-present: Board of A+ Schools. 2006-present: Member, executive committee, high school task force, Pittsburgh Public Schools, 2006-2008.

### **Professional Service**

Co-Editor, *Machine-Mediated Learning* (1991- 1996). Editorial boards, *Interactive Learning Environments* (currently), *Journal of the Learning Sciences* (currently), *Journal of Educational Psychology* (1983-5), *Behavior Research Methods and Instrumentation* (1986-1989, 1992- ), *Review of Research in Education* (1987-1989). Editor, Ablex book series on applications of cognitive science (with Vimla Patel).

Reviewer, *American Educational Research Journal*, *American Psychologist*, *Brain and Behavior Sciences*, *Child Development*, *Cognitive Science*, *Journal of Experimental Psychology*, *Journal of Experimental Child Psychology*, *Journal of Research in Personality*, *Journal of Verbal Learning and Verbal Behavior*, *Memory and Cognition*, *Psychological Review*, *Reading Research Quarterly*, *Review of Educational Research*.

Reviewer, National Science Foundation, National Institute of Education, National Library of Medicine, Province of Quebec, Canadian National Research Council, Wadsworth Publishing Company, Worth Publishing Company, Lawrence Erlbaum Associates, Prentice-Hall, Brooks-Cole, Cambridge University Press, MIT Press, Ben Franklin Technology Center of Western Pennsylvania.

Program evaluator, McGill University. Program evaluator, Army Research Institute. Consultant, joint National Institute of Education and Army Research Institute project on future development issues for computer-based instruction.

Chair, U. S. Department of Education Conference on Research on Computers in Education, November, 1982.

Consultant, Office of Educational Research and Improvement, U. S. Department of Education.

Consultant, Educational Testing Service, 1996. Member, ETS Visiting Panel for Research, 1984-1994 (chair during 1992-4).

Consultant, National Institute of Education, Educational Policy.

Consultant, HumRRO, basic skills and technical training.

Consultant, Organization for Economic Cooperation and Development.

Report on the outcome of an international meeting I helped to organize which resulted in a series of recommendations to OECD for actions that would increase international cooperation in research on computers in education. Served as General Rapporteur for a series of working groups on computer applications in education that preceded a meeting of National Representatives of the OECD countries in September, 1986. Also served as General Rapporteur for that conference and edited the book reporting its conclusions.

Member, Advisory Panel for Computers in Education, Stevens Institute of Technology, 1985-91.

Commissioned paper, National Academy of Sciences Committee on Military Performance Testing, 1985.

Consultant, Rothschild Foundation (Yad HaNadiv), Geneva and Jerusalem. 1986.

I served, at the request and with the sponsorship of the Rothschild Foundation, on an Enquiry Commission for the Foundation and the Ministry of Education and Culture of the State of Israel. Our task was to determine next steps to be taken in improving the Israeli education system, attending especially to possibilities for individualized instruction and for effective use of new information technologies. A written report was produced.

Member, Academic Advisory Committee, Center for Educational Technology, Ramat Aviv, Israel, 1986-90. Continuing as a periodic consultant.

Member, Advisory Panel, Assessment of Computer Uses in U.S. Schools. United States Congress, Office of Technology Assessment, 1986-88.

Member, advisory panel, National Science Foundation Science and Engineering Education Directorate, advanced technology, materials production and dissemination, 1987-90, 1992- .

Author of white paper on intelligent training systems research possibilities for Information Science and Technology Committee, Defense Advanced Research Projects Agency, 1988.

Author of planning paper for Agency for Instructional Technology, 1989.

Member, Committee on Strategic Technologies for the Army, Board on Army Science and Technology, National Academy of Sciences, 1989-93.

Consultant, Federal Aviation Administration, Air Traffic Training Program Division, air traffic controller training, 1989.

Consultant, United Nations Development Programme, 1990. Presentation of workshops on intelligent training systems at National Center for Software Technology, Bombay.

Member, Assessment Committee, Secretary's Committee on Acquiring Necessary Skills. U. S. Department of Labor, 1990-1991.

Consultant, Westinghouse Electric Corporation Science and Technology Center, training studies for Nuclear Regulatory Commission, 1991-1993.

Member, IEA National Steering Committee for Computers in Education International Comparisons. 1992-4.

Member, Board on Testing and Assessment, National Research Council, 1993-1998.

Member, Soldier Systems Panel, Army Research Laboratory Technical Assessment Board, National Research Council, 1996-1998.

Member, Oversight Committee on work force retraining, Working Together Consortium, Pennsylvania Economy League, 1996-7.

Chair, Roundtable on Learning, Work, and Assessment, National Research Council, 1997-1998.

Member of various University of Pittsburgh committees and task forces relating to research development and academic computing issues. Provost's appointee to the University Research Council (1984-88) and to the Executive Committee for Academic Computing (1984-6). Chair, College of Arts and Sciences Natural Science General Education Committee (1989-90). Chair, Education School Dean Search Committee, 1991-1992. Member, Advisory Council on Instructional Excellence, 1998- .

### **Sponsored Research Activity**

- 1971-1994: Research supported by contracts between NIE (and predecessors) and University of Pittsburgh, Learning Research and Development Center.
- 1976-1978: With Robert Glaser and James Pellegrino; NATO Award for conference on Cognitive Psychology and Instruction, Amsterdam, 1977.
- 1976-1978: NSF Instructional Scientific Equipment Grant.
- 1978-1981: With James Greeno: Accepted for participation in the SUMEX-AIM computer system for artificial intelligence research related to medical topics. Participation included coverage of all computer and telecommunications costs.
- 1979-1980: With Robert Glaser: Contract from Defense Advanced Research Projects Agency (ARPA) to study skill acquisition and maintenance.
- 1980-1983: With Robert Glaser: Contract from Office of Naval Research (ONR) to study skill acquisition and maintenance.
- 1982-1984: With Isabel Beck and Robert Glaser: Grant from Buhl Foundation for work on computer-based reading instruction.
- 1983-1986: With Robert Glaser and David Bartholomae: Grant from Ford Foundation to develop word processing and text analysis tools for remedial college writing courses, using a data base of errors made in these students' essays.
- 1983: Equipment grant from the Department of Defense to provide artificial intelligence hardware (Lisp engines) needed for prototype intelligent tutor development.
- 1983-1990: Contract from Office of Naval Research to coordinate and develop resources for the network of Lisp engines awarded by DOD and to build prototype examples of intelligent tutoring systems.
- 1983-1985: With Lloyd Bond and Robert Glaser: Contract with Air Force Human Resources Laboratory to analyze cognitive requirements of certain Air Force technical specialties and recommend cognitively-based trainee selection procedures and curriculum modifications.
- 1983: With Norman Bardsley and Wayne Baughman: Microcomputer equipment grant from Digital Equipment Corporation.
- 1984-1990: Development of new approaches to technical training based upon present cognitive task analyses and using intelligent tutoring systems. From The Air Force Human Resources Laboratory through a task contractor. (1984-1986 jointly with Robert Glaser; 1987-1989 jointly with Susanne Lajoie).
- 1985: Second equipment grant from the Department of Defense to provide additional artificial intelligence hardware (Lisp engines) for prototype intelligent tutor development and related research.
- 1985: Substantial additional equipment grant from Digital Equipment Corporation for microcomputers, a VAX-11/750, and Ethernet network tools and equipment.

- 1985: Small grant from System Development Foundation to support incidental costs of the tutoring systems development efforts.
- 1985-1987: (With Jeffrey Bonar) Contracts with Air Force Human Resources Laboratory (through a task contractor) to develop three intelligent tutoring systems for use in a selection research program.
- 1985: (With Harry Pople, Gordon Banks, Jerry May, J. P. Kearns, and Sigfried Treu) Major grant of artificial intelligence work stations and servers from Xerox Corporation.
- 1986-1988: Contract from the Office of Naval Research to study impasses in learning and how they can be avoided.
- 1986-1990: (With a number of colleagues from the University of Pittsburgh and Carnegie-Mellon University) University Research Initiative contract in the area of artificial intelligence.
- 1986-1987: MCC Corporation. Support of a graduate position (working on intelligent tutoring systems at LRDC) for the new Intelligent Systems Studies program.
- 1987: Comite Conjunto Hispano-Norteamericano para la Cooperacion Cultural y Educativa. Support of a cooperative training seminar for the National Center for Educational Research and Documentation (C. I. D. E.) of Spain.
- 1987: Additional equipment grant of Documenter System and laser printer from Xerox corporation.
- 1988-1990: McDonnell Foundation. Argumentation in mathematics and social science.
- 1989-1992: Mellon Foundation. Work on tools for argumentation funded as part of a broad grant to the Learning Research and Development Center.
- 1990-1992: Office of Naval Research University Research Initiative. Hierarchical Group Decision Making: A Multidisciplinary Approach. With John Levine and Kathleen Carley.
- 1991-1994: United States Air Force. Contract for further work on intelligent training systems for technical jobs (with Sandra Katz).
- 1991-1992: Consortium of Sloan Foundation, Heinz Foundation, Pew Charitable Trust, and other sources. Providing content design for a program to integrate high school studies, apprenticeship studies in the machinist trades, and junior college courses. Part of a joint effort with the Commonwealth of Pennsylvania, Jobs for the Future, the U. S. Department of Labor, and several foundations.
- 1992-1995: National Science Foundation. Tools for Thinking About Complex Issues in Science and Public Policy (with Johanna Moore and Arlene Weiner).
- 1994-1996: Office of Naval Research. Conference grant. Training in basic electricity and electronics.
- 1995-1997: Advanced Research Projects Agency. Intelligent learning systems technology for DoD dependent schools. With Dan suthers, Arlene Weiner, and Sandy Katz.
- 1995-1997: Office of Naval Research (through Imetrix and BBN). Teaching collaboration among workers controlling remotely operated underwater vehicles. With Sandy Katz.
- 1996: World Bank. Job analysis of task manager job and design of intelligent training system.
- 1996-1997: Department of Labor. Cognitive extensions of the O\*Net model (with Lauren Resnick).
- 1997-1999: Intel Corporation. Joint Development of intelligent coached apprenticeship technology.

- 1997-1998: Russell Sage Foundation. Organizational Facilitation of Job-Related Learning: A Cognitive Science of Work Force Development (With Lia diBello, Ann Majchrzak, Gary Olson, and Steve Reder).
- 1997-2002: National Science Foundation. A Center for the Study of Tutoring (With Kurt VanLehn, John Anderson, et al.).
- 1998-2003: Department of Education. Technology Innovation Challenge Grant (With Lauren Resnick, Anthony Alvarado and Daniel Suthers). Prime grantee is New York City Community District #2. Main activity is at Pitt.
- 1999: U.S. Air Force (via Modus Operandi, Inc.). Improved methods for Cognitive Task Analysis.

## Publications

- Bower, G.H., Clark, M.C., Lesgold, A.M., & Winzenz, D. (1969). Hierarchical retrieval schemes in recall of categorized word lists. *Journal of Verbal Learning and Verbal Behavior*, 8, 323-343.
- Bower, G.H., & Lesgold, A.M. (1969). Organization as a determinant of part-to-whole transfer in free recall. *Journal of Verbal Learning and Verbal Behavior*, 8, 501-506.
- Bower, G.H., Lesgold, A.M., & Tieman, D.G. (1969). Grouping operations in free recall. *Journal of Verbal Learning and Verbal Behavior*, 8, 481-493.
- Lesgold, A.M., & Bower, G.H. (1970). Inefficiency of serial knowledge for associative responding. *Journal of Verbal Learning and Verbal Behavior*, 9, 456-466.
- Lesgold, A.M. (1972). Pronominalization: A device for unifying sentences in memory. *Journal of Verbal Learning and Verbal Behavior*, 11, 316-323.
- Lesgold, A.M., & Goldman, S.R. (1973). Encoding uniqueness and the imagery mnemonic in associative learning. *Journal of Verbal Learning and Verbal Behavior*, 12, 193-202.
- Lesgold, A.M. (1974). Variability in children's comprehension of syntactic structures. *Journal of Educational Psychology*, 66, 333-338.
- Lesgold, A.M., McCormick, C., & Golinkoff, R.M. (1975). Imagery training and children's prose learning. *Journal of Educational Psychology*, 67, 663-667.
- Lesgold, A.M., Levin, J.R., Shimron, J., & Guttman, J. (1975). Pictures and young children's learning from oral prose. *Journal of Educational Psychology*, 67, 636-642.
- Levin, J.R., Bender, B.G., & Lesgold, A.M. (1976). Pictures, repetition, and young children's oral prose learning. *AV Communications Review*, 24, 367-380.
- Perfetti, C.A., & Lesgold, A.M. (1979). Coding and comprehension in skilled reading. In L.B. Resnick & P. Weaver (eds.), *Theory and practice of early reading*. Hillsdale, NJ: Erlbaum.
- Perfetti, C.A., & Lesgold, A.M. (1977). Discourse processing and sources of individual differences. In P. Carpenter & M. Just (Eds.), *Cognitive processes in comprehension*, Hillsdale, NJ: Erlbaum.
- Lesgold, A.M., DeGood, H., & Levin, J.R. (1977). Pictures and young children's prose learning: A supplementary report. *Journal of Reading Behavior*, 9, 353-360.
- Lesgold, A.M., & Fitzhugh, R.J. (1977). An on-line laboratory for teaching and research. *Behavior Research Methods and Instrumentation*, 9, 184-188.
- Lesgold, A.M., Pellegrino, J.W., Fokkema, S.D., & Glaser, R. (Eds.). (1978). *Cognitive Psychology and Instruction*. New York: Plenum.

- Glaser, R., Pellegrino, J.W., & Lesgold, A.M. (1978). Some directions for a psychology of instruction. In A.M. Lesgold, J.W. Pellegrino, S.D. Fokkema, & R. Glaser (Eds.), *Cognitive psychology and instruction*. New York: Plenum.
- Glaser, R., Lesgold, A.M., & Pellegrino, J.W. (1978). A letter to be read in a future time. *Educational Psychologist, 13*, 79-85.
- Lesgold, A.M., & Perfetti, C.A. (1978). Interactive processes in reading comprehension. *Discourse Processes, 1*, 323-336.
- Levin, J. R., & Lesgold, A. M. (1978). On pictures in prose. *Educational Communications and Technology, 26*, 233-243.
- Vesonder, G.T., Lesgold, A.M., & Wolf, R. (1978). The use of microprocessors in a time-shared computer facility for research, development, and teaching. *Behavior Research Methods and Instrumentation, 10*, 4, 510-515.
- Lesgold, A.M., Roth, S.F., & Curtis, M.E. (1979). Foregrounding effects in discourse comprehension. *Journal of Verbal Learning and Verbal Behavior, 18*, 291-308.
- Fox, J.L., Jr., Wolf, R.V., & Lesgold, A.M. (1979). Microprocessor uses in a time-shared facility. *Behavior Research Methods and Instrumentation, 11*, 271-280.
- Lesgold, A.M., & Curtis, M.E. (1981). Learning to read words efficiently. In A.M. Lesgold & C.A. Perfetti (Eds.), *Interactive processes in reading*, Hillsdale, NJ: Erlbaum.
- Lesgold, A.M., & Perfetti, C.A. (1981). Interactive processes in reading: Where do we stand. In A.M. Lesgold & C.A. Perfetti (Eds.), *Interactive processes in reading*, Hillsdale, NJ: Erlbaum.
- Lesgold, A.M., & Perfetti, C.A. (Eds.). (1981). *Interactive processes in reading*, Hillsdale, NJ: Erlbaum.
- Lesgold, A.M. (1981). Cognitive simulation modeling on the VAX-11. *Behavior Research Methods and Instrumentation, 13*, 192-194.
- Lesgold, A.M. (1981). Instructional principles for computer-based learning. In M.R. Pitts (Ed.), *A bright promise but a dim future: Researchers examine potential of educational technology*. Washington, DC: Council for Educational Research and Development.
- Lesgold, A. M. (in press). Microcomputers in instructional research. Paper presented at the 1982 University of Arizona conference on Microcomputers in Education. In D. Craighead (Ed.), *Best of Microcomputers in Education*, Potomac, MD: Computer Science Press.
- Lesgold, A.M., & Resnick, L.B. (1982). How reading disabilities develop: Perspectives from a longitudinal study. In J.P. Das, R. Mulcahy, & A.E. Wall (Eds.), *Theory and Research in Learning Disabilities*, New York: Plenum.
- Lesgold, A.M. (1983). A rationale for computer-based reading instruction. In A.C. Wilkinson (Ed.), *Classroom computers and cognitive science*. New York: Academic Press.
- Lesgold, A.M. (1982). Computer games for the teaching of reading. *Behavior Research Methods and Instrumentation, 14*, 224-226.
- Lesgold, A.M. (1984). Acquiring expertise. In J. R. Anderson & S. M. Kosslyn (Eds.), *Tutorials in learning and memory: Essays in honor of Gordon Bower*. San Francisco, W. H. Freeman.
- Lesgold, A. M. (1983). When can computers make a difference? *Theory into Practice, 22*, 247-252.
- Lesgold, A. M. (1983). Experiences in Building a Simulation Environment. *Behavior Research Methods and Instrumentation, 15*, 284-288.

- Lesgold, A., & Reif, F. (1983). *Computers in Education: Realizing the Potential. Report of a Research Conference*. Washington, D.C.: Office of the Assistant Secretary for Educational Research and Improvement, U. S. Department of Education. [U.S. Government Printing Office 1983-381-054-134 and 1983-381-054-135]
- Lesgold, A. M. (1982, November). Paradigms for computer-based education. A paper commissioned by the Office of Educational Research and Improvement, U. S. Department of Education. [Published as part of Lesgold and Reif, 1983.]
- Lesgold, A. (1983). Intelligence: The Ability to Learn, Or More? A Review of Handbook of Human Intelligence by Robert S. Sternberg. *Contemporary Education Review*, 2, 111-120.
- Lesgold, A.M. (1984). Human skill in a computerized society: Complex skills and their acquisition. *Behavior Research Methods, Instruments & Computers*, 16, 79-87. [Presidential address to the Society for Computers in Psychology.]
- Lesgold, A.M., Resnick, L.B., & Hammond, K. (1985). Learning to read: A longitudinal study of word skill development in two curricula. In G. Waller and E. MacKinnon (Eds.), *Reading Research: Advances in Theory and Practice*. New York: Academic Press.
- Lesgold, A. M. (1986). Computer resources for learning. *Peabody Journal of Education*, 62, 2, 60-74.
- Lesgold, A., & Hammond, K. L. (1985). Do We Look for Independence or Near Decomposability. (Commentary on an article by Humphreys & Evett.) *Brain and Behavior Sciences*, 8, 716-717.
- Lesgold, A., Rubinson, H., Feltovich, P., Glaser, R., Klopfer, D., & Wang, Y. (1988). Expertise in a Complex Skill: diagnosing X-ray Pictures. In Chi, M. T. H., Glaser, R., and Farr, M. (Eds.), *The nature of expertise*. Hillsdale, NJ: Erlbaum.
- Lesgold, A. M. (1986). Critical research issues in the implementation of the next generation of educational technology. *Machine-Mediated Learning*, 1, 4, 373-381.
- Lesgold, A.M. (forthcoming). Reading Is a Redundant Collection of Complex Skills. In Rand Spiro (Ed.), *Reading Research into the 90's*. Hillsdale, NJ: Erlbaum. [n.b. This book's completion has been delayed indefinitely by the editor. Copy of chapter available upon request.]
- Lesgold, A. M. (1988). Problem solving. In R. J. Sternberg & E. E. Smith (Eds.), *The psychology of human thought*, Cambridge University Press.
- Lesgold, A. M. (1986, March). Preparing Children for a Computer-Rich World. *Educational Leadership*, 43, 6, 7-11.
- Glaser, R., Lesgold, A., & Lajoie, S. (1987). Toward a Cognitive Theory for the Measurement of Achievement. In R. R. Ronning, J. Glover, J. C. Conoley, & J. C. Witt. *The influence of cognitive psychology on testing*. Hillsdale, NJ: Erlbaum.
- Lesgold, A. M. (1987). Intelligent Computer-Based Instruction. *Encyclopedia of Artificial Intelligence*. New York: Wiley.
- Lesgold, A. (1987). Intelligenter computerunterstuetzter Unterricht. In H. Mandl & H. Spada (Eds.), *Wissenpsychologie: Ein Lehrbuch*. Munich: Psychologie Verlagsunion, Urban und Schwarzenberg.
- Glaser, R., Lesgold, A. M., & Gott, S. (1991). Implications of Cognitive Psychology for Measuring Job Performance. In A. K. Wigdor & B. F. Green, Jr. (Eds.), *Performance assessment for the workplace: Technical issues* (pp. 1-26). Washington, DC: National Academy Press.
- Lesgold, A. M. (1986, November). Intelligent Tutoring Systems for Professionals. In H. Stone (Ed.), *Proceedings of the IEEE Fall Joint Computer Conference*, Dallas, TX, pp. 18-23.

- Lesgold, A.M. (Ed.). (1987). *Information technologies and basic learning*. Paris: Organisation for Economic Co-operation and Development. [Also published in French by OECD]
- Lesgold, A.M. (1987). Information technologies and basic learning: Main issues and future prospects. In A. M. Lesgold, A.M. (Ed.), *Information technologies and basic learning*. Paris: Organisation for Economic Co-operation and Development.
- Mandl, H., & Lesgold, A. (Eds.) (1988). *Learning issues for intelligent tutoring systems*. New York: Springer-Verlag.
- Lesgold, A. (1988). Toward a theory of curriculum for use in designing intelligent instructional systems. In H. Mandl & A. Lesgold (Eds.), *Learning issues for intelligent tutoring systems*. New York: Springer-Verlag.
- Lesgold, A., Bonar, J. G., & Ivill, J. (1989). Toward intelligent systems for testing. In L. B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in Honor of Robert Glaser*. Hillsdale, NJ: Erlbaum.
- Rabinowitz, M., Lesgold, A., & Berardi, B. (1988). Modeling task performance: Rule-based and connectionist alternatives. In M. Rabinowitz (Ed.), *Computer simulations as research tools*. Special issue of *International Journal of Educational Research*, 12, 35-48.
- Lesgold, A. (1988). The integration of instruction and assessment in business/military settings. *Proceedings of the 1987 ETS Invitational Conference*. Princeton, NJ: Educational Testing Service.
- Lesgold, A. (1987). Intelligent tutoring systems: practice opportunities and explanatory models. In J. Barrett and J. Hedberg (Eds.), *Using computers intelligently in tertiary education*. (Proceedings of the 1987 meeting of the Australian Society for Computers in Learning, Sydney, December, 1987), pp. 7-24. Kensington, New South Wales: University of New South Wales, Continuing Education.
- Frederiksen, N., Glaser, R., Lesgold, A. M., & Shafto, M. (Eds.) (1990). *Diagnostic monitoring of skill and knowledge acquisition*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lesgold, A., & Glaser, R. (Eds.) (1989). *Foundations for a psychology of education*. Hillsdale, NJ: Erlbaum.
- Lesgold, A., Lajoie, S., Logan, D., & Eggan, G. (1990). Applying cognitive task analysis and research methods to assessment. In N. Frederiksen, R. Glaser, A. M. Lesgold, & M. Shafto (Eds.), *Diagnostic monitoring of skill and knowledge acquisition*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lesgold, A. (1989). Context-specific requirements for models of expertise. In D. A. Evans & V. L. Patel (Eds.), *Cognitive science in medicine: Biomedical modeling*. (Pp. 373-400). Cambridge, MA: MIT Press.
- Lesgold, A. M., Lajoie, S. P., Bunzo, M., & Eggan, G. (1992). SHERLOCK: A coached practice environment for an electronics troubleshooting job. In J. Larkin & R. Chabay (Eds.), *Computer assisted instruction and intelligent tutoring systems: Shared issues and complementary approaches* (pp. 201-238). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lesgold, A. (1990). Tying development of intelligent tutors to research on theories of learning. In H. Mandl, E. De Corte, S. N. Bennett, & H. F. Friedrich (Eds.), *Learning and instruction: European research in an international context*. Vol. 3. Oxford: Pergamon.
- Gabrys, G., & Lesgold, A. (1989, September). Coherence: Beyond constraint satisfaction. Invited commentary on an article by Thagard. *Brain and Behavior Science*.

- Lajoie, S., & Lesgold, A. (1989). Apprenticeship training in the workplace: Computer coached practice environment as a new form of apprenticeship. *Machine-Mediated Learning*, 3, 7-28.
- Lesgold, A., & Lajoie, S. (1991). Complex problem solving in electronics. In R. Sternberg & P. A. Frensch (Eds.), *Complex problem solving: Principles and mechanisms*. Hillsdale, NJ: Erlbaum.
- Lesgold, A., Chipman, S., Brown, J. S., & Soloway, E. (1990). Prospects for information science and technology focused on intelligent training systems concerns. *Annual Review of Computer Science*. Pp. 383-394. Palo Alto, CA: Annual Review Press.
- Keith, W., Weiner, A., & Lesgold, A. (1989). Argument comprehension: Some preliminary findings. In B. E. Gronbeck, R. S. Bjork, D. S. Gouran, D. W. Parson, & M. O. Sillars (Eds.), *Spheres of argument*, Proceedings of the 6th SCA/AFA conference on argumentation, pp. 584-591. Annandale, VA: Speech Communication Association.
- Hativa, N., & Lesgold, A. (1991). The computer as tutor: Can it adapt to the individual learner? *Instructional Science*, 20, 49-78.
- Lesgold, A. (1990). Intelligent computer aids for practice of complex troubleshooting. *Proceedings of the 1990 FAA Symposium on Training Technology*. Oklahoma City: Federal Aviation Administration Academy.
- Lesgold, A. (1994). Assessment of intelligent training technology. In E. Baker and H. O'Neil, Jr. (Eds.), *Technology assessment: In Education and Training (vol. 1)* pp. 97-116. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lesgold, A., Eggan, G., Katz, S., & Rao, G. (1992). Possibilities for assessment using computer-based apprenticeship environments. W. Regian & V. Shute (Eds.), *Cognitive approaches to automated instruction* (pp. 49-80). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lajoie, S. P., & Lesgold, A. M. (1992). Dynamic assessment of proficiency for solving procedural knowledge tasks. *Educational Psychologist*, 27, 365-384.
- Lesgold, A. (1991). Research methodology in the postinformatic age. *Behavior Research Methods, Instruments, and Computers*, 23, 109-111.
- Hativa, N., Sarig, O., & Lesgold, A. (1991). Timing students' answers in CAI. *Journal of Computer-Based Instruction*, 18, 19-29.
- Katz, S. & Lesgold, A. (1991). Modeling the student in Sherlock II. In J. Kay & A. Quilici (Eds.), *Proceedings of the IJCAI-91 Workshop W.4: Agent modelling for intelligent interaction* (pp. 93-127). Sydney, Australia.
- Katz, S., & Lesgold, A. (1993). The role of the tutor in computer-based collaborative learning situations. In S. Lajoie & S. Derry (Eds.), *Computers as cognitive tools* (pp.289-317). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lesgold, A. (1993). Information technology and the future of education. In S. Lajoie & S. Derry (Eds.), *Computers as cognitive tools*(pp. 369-383). Hillsdale, NJ: Lawrence Erlbaum Associates.
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