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EDUCATION

- Ph.D., Psychology, University of Michigan, 1970.
- M.A., Communication Sciences, University of Michigan, 1962.
- B.B.A., Accounting, University of Michigan, 1959.

PROFESSIONAL EXPERIENCE

- PROFESSOR EMERITUS, Learning Sciences, Northwestern University, 2005-present.
- VISITING SENIOR LECTURER, Harvard Graduate School of Education, 2005-2006.
- PROFESSOR, Learning Sciences, Northwestern University, 1989-2005.
- VISITING SCHOLAR, Harvard Graduate School of Education, 2001-2005.
- RESEARCH PROFESSOR, School of Education, Boston College, 1998-2001.
- CO-DIRECTOR, US Department of Education, Center for Technology in Education, 1991-1994.
- PRINCIPAL SCIENTIST, BBN Technologies, 1982-1997.
- SENIOR SCIENTIST, BBN Technologies, 1967-1982.

HONORS AND PROFESSIONAL SOCIETIES

- National Academy of Education, 1992-present
- Fellow of the American Association for Artificial Intelligence, 1990-present (founding fellow)
- Fellow of the Cognitive Science Society, 2006-present
- Fellow of the American Educational Research Association, 2008-present (founding fellow)
- Fellow of the American Association for the Advancement of Science, 2002-present
- American Men and Women of Science, 1992-present
- Who's Who in America, 1995-present
- Who's Who in American Education, 1995-present
- Who's Who in Science and Engineering, 1992-present
- Who's Who in Technology Today, 1990-present
- Guggenheim Fellowship, Oxford University, UK, 1974
- Sloan Fellowship, University of California, Berkeley, 1980
- Chairman, Cognitive Science Society, 1979-1980 (first chairman)
- Member of the Board, Cognitive Science Society, 1979-1987
- Editor, *Cognitive Science*, 1976-1980 (founding editor)
- Editorial Board, *Discourse Processes*, 1977-1987
- Editorial Board, *Cognitive Science*, 1980-2000
- Editorial Board, *Cognition and Instruction*, 1981-present
- Editorial Board, *Interactive Learning Environments*, 1989-1994
- Editorial Board, *Journal of the Learning Sciences*, 1990-2008
- Board of Reviewing Editors, *Educational Researcher*, 1986-1989

PROFESSIONAL RESPONSIBILITIES AND PROJECTS

- Dr. Collins received his doctorate in Psychology at the Human Performance Center of the University of Michigan. His work there was in human information processing with Dr. P.M. Fitts, and then in language and memory with Drs. E. Martin and A.W. Melton. Before that, he received a Master's degree in Communication Sciences where he acquired a background in artificial intelligence, mathematical logic, and linguistics.
- Dr. Collins is best known in psychology for his work on semantic memory and mental models, in artificial intelligence for his work on plausible reasoning and intelligent tutoring systems, and in education for his work on inquiry teaching, cognitive apprenticeship, situated learning, epistemic forms, design research, and systemic validity in educational testing
- At BBN, Dr. Collins' major research interests were in cognitive information processing and education. His reaction-time experiments with Dr. M. R. Quillian at BBN on human question-answering provided a new experimental approach for psychologists to investigate semantic information processing. This research launched the now

extensive research on semantic memory in psychology. In 2008 he was chosen by French psychologists as one of 37 living scholars who have had the most impact on the field of psychology.

- From 1970 to 1975 Dr. Collins directed a project with the late Dr. Jaime R. Carbonell on the SCHOLAR CAI system. SCHOLAR was the first example of an intelligent tutoring system, where knowledge was structured like human memory so that it could be used in a variety of ways. On this project Dr. Collins developed techniques for analyzing human dialogues to determine how human tutoring and inferential question-answering strategies could be embedded in SCHOLAR.
- From 1975-1979 Dr. Collins directed a project to develop an intelligent tutoring system (WHY system) that used a Socratic (or inquiry) method for tutoring causal knowledge and reasoning. In conjunction with this project he developed a formal theory of Socratic tutoring in computational form, derived from analyses of a variety of inquiry teaching dialogues.
- From 1980-1988, Dr. Collins directed a project to study people's mental models of complex systems for the Office of Naval Research. This project attempted to determine the different kinds of models people have of systems, and how understanding of such systems can best be taught.
- With Jan Hawkins, Dr. Collins co-directed from 1991-1994 the Center for Technology in Education centered at Bank Street College of Education, for which he conducted research to evaluate the effects of using technology in schools and to develop a new technology-based system for assessing student performance. As part of the effort to develop technology-based assessment, he worked with John Frederiksen at ETS to develop a video portfolio system to assess mathematics teaching for the National Board for Professional Teaching Standards.
- From 1992-1995 Dr. Collins worked on the Co-NECT School project for the New American Schools Development Corporation. The project's goal was to design a school for the twenty-first century and to implement the design in a number of sites around the country. Dr. Collins was in charge of the assessment effort for the project for the first three years, which implemented a system based on portfolios and performance assessments for accountability purposes.
- Dr. Collins finished a book in 2009 with a former student Richard Halverson entitled *Rethinking Education in the Age of Technology: The Digital Revolution and Schooling in America*. He is recently finished a related book entitled *What's Worth Teaching: Rethinking Curriculum in the Age of Technology*. The book considers the effects of technology on society and the implications of these effects for the design of the school curriculum.

BOOKS

Bobrow, D. G. & Collins, A. (Eds.) (1975). *Representation and Understanding: Studies in Cognitive Science*. New York: Academic Press.

Ortony, A., Clore, G. L. & Collins, A. (1988) *The Cognitive Structure of Emotions*. Cambridge, UK: Cambridge University Press.

Collins, A. & Smith, E. E. (Eds.) (1988) *Readings in Cognitive Science*. San Mateo CA: Morgan-Kaufmann.

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JOURNAL ARTICLES, BOOK CHAPTERS, AND CONFERENCE PROCEEDINGS PAPERS

Martin, E., Roberts, K. H. & Collins, A. (1968). Short-term memory for sentences. *Journal of Verbal Learning and Verbal Behavior*, 7, 560-566.

Nickerson, R. S., Markowitz, J. & Collins, A. (1969). Effects of uncertain warning signals on reaction time. *Perception and Psychophysics*, 5, No. 2, 107-112.

Collins, A. & Quillian, M. R. (1969). Retrieval time from semantic memory. *Journal of Verbal Learning and Verbal Behavior*, 8, 240-247. Reprinted in G. F. Luger (Ed.) (1995), *Computation & Intelligence* (pp.192-202). Cambridge MA: MIT Press. (Citation classic.)

Collins, A. & Quillian, M. R. (1970). Facilitating retrieval from semantic memory: The effect of repeating part of an inference. *Acta Psychologica*, 33, 304-314. Reprinted in A.F. Sanders (Ed.), *Attention and Performance III*.

Collins, A. & Quillian, M. R. (1970). Does category size affect categorization time? *Journal of Verbal Learning and Verbal Behavior*, 9, 432-438.

Collins, A. & Quillian, M. R. (1972). Experiments on semantic memory and language comprehension. In L.W. Gregg (Ed.), *Cognition in learning and memory* (pp.117-138). New York: John Wiley.

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Carbonell, J. R. & Collins, A. (1973) Natural semantics in Artificial Intelligence. In *Proceedings of the Third International Joint Conference on Artificial Intelligence*, Stanford University, 344-351. Reprinted in the *American Journal of Computational Linguistics*, 1, Mfc. 3, 1974.

Collins, A. (1974). Decrements in tracking and visual performance during vibration. *Human Factors*, 15(4), 379-393.

Collins, A., Carbonell, J. R. & Warnock, E. H. (1975). Semantic inferential processing by computer. In J. Rose (Ed.), *Advances in cybernetics and systems*. London: Gordon & Breach.

Collins, A., Warnock, E. H. & Passafiume, J. J. (1975) Analysis and synthesis of tutorial dialogues. In G.H. Bower (Ed.), *Advances in learning and motivation*, (Vol. 9), (pp. 49-87) New York: Academic Press.

Collins, A. & Loftus, E. F. (1975) A spreading activation theory of semantic processing. *Psychological Review*, 82, 407-428. Reprinted in A. Collins & E. Smith (Eds.), (1988) *Readings in Cognitive Science* (pp. 126-154). San Mateo CA: Morgan Kaufmann. (Citation classic – 3rd most cited paper in *Psychological Review* history)

Collins, A., Warnock, E. H., Aiello, N., & Miller, M. L. (1975). Reasoning from incomplete knowledge. In D. Bobrow & A. Collins (eds.), *Representation and understanding* (pp. 383-415). New York: Academic Press.

Collins, A. (1977). Processes in acquiring knowledge. In R. C. Anderson, R. J. Spiro, & W. E. Montague (Eds.), *Schooling and the acquisition of knowledge* (pp. 339-363). Hillsdale, NJ: Lawrence Erlbaum Associates.

Collins, A. & Adams, M. J. (1977) Comparison of two teaching strategies in computer aided instruction. *Contemporary Educational Psychology*, 2, 133-148.

Stevens, A. & Collins, A. (1977). The goal structure of a Socratic tutor. *Proceedings of Association for Computing Machinery National Conference*, Seattle, Washington.

Collins, A., Brown, J. S. & Harris, G. (1978) Artificial intelligence and learning strategies. In H. F. O'Neil (Ed.), *Learning strategies* (pp.107-139). New York: Academic Press.

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Stevens, A. & Collins, A. (1980). Multiple conceptual models of a complex system. In R. Snow, P. Federico, & W. Montague (Eds.), *Aptitude learning and instruction: Cognitive processing analysis*. Hillsdale, NJ: Lawrence Erlbaum Associates, 177-197.

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Collins, A. (1990, April) *Generalizing from situated knowledge to robust understanding*. Paper presented at the annual meeting of the American Educational Research Association, Boston.

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