Dr. Iris Tabak

Department of Education and Program of Science & Technology Teaching
Ben Gurion University of the Negev
P.O. Box 653
Beer Sheva, 84105

itabak@bgumail.bgu.ac.il

08-646-1836 (phone)
08-647-2897 (fax)

Education

1999 (December)	**Ph.D., Learning Sciences**; Northwestern University
1991	**B.S.E, Computer Engineering**; The University of Michigan - Ann Arbor

Research Interests

- Develop models of development of epistemic, strategic and conceptual scientific knowledge
- Design technological supports for complex reasoning in naturalistic settings
- Develop models of knowledge construction through distributed mediating agents in communities of practice, particularly, K-12 classrooms

Fellowships and Awards

2001	NARST Outstanding Doctoral Research Award
2000 - 2003	Rashi-Guastalla Fellowship for the Advancement of Science Education
1998 - 1999	Spencer Dissertation Year Fellowship
(1998)	Northwestern University Dissertation Year Fellowship (declined for Spencer(
1996 (summer)	Summer Program in Research for Graduate Students, ETS
1995 - 1997	NSF Training Grant Fellowship
1994 - 1995	NSF Graduate Fellowship for Women and Minorities in Engineering
1985	Best Instructor Award, army service, IDF, Israel

Grants

2001 - 2001	Seed Grant, Faculty of Humanities and Social Sciences, BGU
1999 - 2000	Center for Innovative Learning Technologies Seed Grant (with Linn and Eylon)
1998 - 1999	Northwestern University Dissertation Grant

Professional Appointments

2001	Review Board, Journal of the Learning Sciences

Dr. Iris Tabak

Dissertation Research

Thesis — **"Unraveling the Development of Scientific Literacy: Domain-specific Inquiry Support in a System of Cognitive and Social Interactions."**
Draws on sociocultural and cognitive theory in the design and empirical study of instructional supports for student-directed inquiry in science classrooms. Examines how high school students' conceptions, skills and strategies develop through interactions with peers, teachers and softtware..

Software — **"Observational Investigation Platform"**
Software framework for problem scenarios where students conduct naturalistic studies of populations. Pedagogical approach of *domain-specific strategic support*combines disciplinary knowledge with general strategies to guide the analysis and synthesis of primary data. Scenarios implemented: The Galapagos Finches and The Florida Panthers.
Adopted by the center for Learning Technologies in Urban Schools (LeTUS), currently used in Chicago Public Schools.as part of the center's education reform initiatives.
Peer reviewed and published in:
(2001). The BioQuest Library VI. John R. Junck (Ed.). Academic Press.

Committee — Brian J. Reiser (chair); Kenneth D. Forbus; Dedre Gentner; Carol D. Lee

Research Experience

2000 - ongoing — **Ben Gurion University of the Negev, Beer Sheva: Lecturer, Department of Education and Program of Science and Technology Teaching**
- Studies on supporting inquiry-based science with low achieving low literacy students
- Studies on motivation and science education
- Studies on concomitant changes in conceptual, strategic and epistemic knowledge in the context of inquiry-based learning in science education

1999 - 2000 — **University of California, Los Angeles: NIMH Postdoctoral Fellow in Applied Human Development; Faculty mentors: Yasmin Kafai, Deborah Stipek**
- Examine teacher practices in a technology-supported classroom (Kafai's KIDS project)
- Examine development of scientific critiquing skills using Web-based tools (in collaboration with Marcia Linn and Bat Sheva Eylon)

1995 - 1999 — **Northwestern University: Research Assistant for Brian Reiser**
BGuILE, learning environments to support student-directed inquiry
- Developed computer-based learning environment, and supervised development team
- Collaborated with teachers on design of curriculum and materials for a unit on evolution
- Developed and conducted interviews and classroom observations
- Qualitative and quantitative data analysis
- Co-authored grant proposal to McDonnell foundation, awarded 1998

1996 (summer) — **Educational Testing Service**: **Research Fellow for Ann Kindfield**
Assessment of Genscope (BBN), visualization tool for Mendelian Genetics.
- Analyzed pre- post- tests for genetics concepts
- Developed instruments assessing understanding of scientific models

1993-1994 — **Educational Testing Service**: **Senior Research Assistant for Drew Gitomer**
HyDRIVE, intelligent tutoring system for troubleshooting aircraft hydraulics.
- Designed and implemented modules in HyDRIVE
- Developed content materials for the system

1989-1992 **The University of Michigan**: **Research Assistant for Elliot Soloway**
GPCeditor, environment for learning software design; MFB, interactive multimedia training package (for Apple Computer, Inc.)
- Conducted and analyzed verbal protocol (think aloud) sessions
- Recommended improvements for the design of the software

Teaching experience

'01- ongoing **Lecturer for Classroom Discourse: Face to Face vs. Technology Supported**, graduate course, Ben Gurion University of the Negev, Beer Sheva, Israel

'00- ongoing **Lecturer for Cognitive Approaches to Science Education**, graduate course, Ben Gurion University of the Negev, Beer Sheva, Israel

'00- ongoing **Lecturer for Design of Computer-based Learning Environments (Practicum on School-based interventions)**, graduate seminar, Ben Gurion University of the Negev, Beer Sheva, Israel

09/98-05/00 **Guest lectures in graduate seminars in Educational Technology,** UCLA, CA

1/98-3/98 **Teaching assistant for Design of Learning Environments**, graduate seminar, MS.Ed, Ph.D and MA students. Instructor Brian Reiser. Northwestern University, Evanston, IL.

9/96-12/96 **Teaching assistant for Learning in Context: Cognitive Science Foundations of the Learning Sciences**, two sections, graduate and undergraduate seminars. Instructor Louis Gomez. Northwestern University, Evanston, IL.

1/96-3/96 **Teaching assistant for Science Education: Theory and Practice**, graduate seminar. Instructor Brian Reiser. Northwestern University, Evanston, IL.

1/96-2/96 **Co-instructor in Explorations in Ecology and Evolution**, biology enrichment class (middle school), Center for Talent Development, Northwestern University, Evanston, IL.

1/92 - 5/92 **Assistant instructor for Pascal course**, Community High School, Ann Arbor, MI.

9/88 - 5/89 **Teacher of Hebrew**, Beth Israel religious school, Ann Arbor, MI.

8/84 - 6/86 **Instructor for Infantry and Instruction Techniques**, army service IDF, Israel.

Teacher Professional Development

7/97 Co-instructor in "BGuILE, using the Finch Scenario in High School Classrooms" CoVis Summer Teacher Workshops**,** Evanston, IL.

7/95 Co-organizer and instructor, two week workshop with local teachers developing complementary activities for the BGuILE investigation software.

Professional Experience and Service

Reviews for Journal of the Learning Sciences and AERA Annual Meeting

Co-chair and session organizer AERA 1999, AERA 2002

Participant in thesis workshop at the Spencer Fellowship Winter Forum (February 1999). Faculty mentors: James Greeno, Rogers Hall, Geoffrey Saxe, and Marcia Linn

Participant in Doctoral Consortium, CSCL 1997. Faculty mentors: Tom Duffy, Barry Fishman, Louis Gomez, Mark Guzdial, and Nancy Songer

Dr. Iris Tabak

Workshops coordinator, 1991 National Educational Computing Conference

- Supervised development and distribution of multimedia composition software
- Participated in organizing and leading workshops (22 sessions)

Demonstration suite, 1990 National Educational Computing Conference

- Brochure production and demonstrations

Dr. Iris Tabak

Publications

Tabak, I., Reiser, B. J., (submitted). Software-Realized Inquiry Support for Cultivating a Disciplinary Stance.

Neuman, Y., Tabak, I., (submitted). Inconsistency as an Interactional Problem: A Lesson from a Former Israeli Prime Minister.

Neuman, Y., Weinstock, M., Tabak, I., (submitted). Missing the Point or Missing the Norms?: On Epistemological Norms as Predictors of Students Ability to Identify Fallacious Arguments.

Tabak, I., Reiser, B. J., (in preparation). A Distributed-Scaffolding Framework to Promote Inquiry-Based Science Learning.

Tabak, I. (in preparation). Steering The Course of Dialogue in Inquiry-Based Science Classrooms.

Tabak, I. (in preparation). Models of Domain Literacy, Differential Scaffolding, and their Influence on Student-Directed Inquiry Processes.

Reiser, B. J., Tabak, I., Sandoval, W. A., Smith, B., Steinmuller, F., Leone, T. J., (2001) BGuILE: Stategic and Conceptual Scaffolds for Scientific Inquiry in Biology Classrooms. In S.M. Carver & D. Klahr (Eds.). Cognition and Instruction: Twenty five years of progress. Mahwah, NJ: Erlbaum

Tabak, I., & Reiser, B. J. (1997). Complementary Roles of Software-Based Scaffolding and Teacher-Student Interactions in Inquiry Learning. In R. Hall, N. Miyake, & N. Enyedy (Eds.), *Proceedings of Computer Support for Collaborative Learning '97*, (pp. 289-298), Toronto, Canada.

Tabak, I., Smith, B. K., Sandoval, W. A., & Reiser, B. J. (1996). Combining General and Domain-Specific Strategic Support for Biological Inquiry. In C. Frasson, G. Gauthier, & A. Lesgold (Eds.), *Intelligent Tutoring Systems: Third International Conference, ITS '96*, (pp. 288-296), Montreal, Canada: Springer-Verlag.

Tabak, I., Sandoval, W. A., Smith, B. K., Agganis, A., Baumgartner, E., & Reiser, B. J. (1995). Supporting Collaborative Guided Inquiry in a Learning Environment for Biology. In J. L. Schnase & E. L. Cunnius (Eds.), *Proceedings of CSCL '95: The First International Conference on Computer Support for Collaborative Learning*, (pp. 362-366). Bloomington, IN: Erlbaum.

Guzdial, M., Soloway, E., Blumenfeld, P., Hohmann, L., Ewing, K., Tabak, I., Brade, K., & Kafai, Y. (1992). The Future of CAD: Technological Support for Kids Building Artifacts. In D. Balestri, S. Ehrmann, & D. L. Feguson (Eds.), *Learning to Design, Designing to Learn: Using Technology to Transform the Curriculum* Norwood, NJ: Ablex.

Soloway, E., Guzdial, M., Brade, K., Hohmann, L., Tabak, I., Weingrad, P., & Blumenfeld, P. (1992). Technological Support for the Learning and Doing of Design. In M. Jones & P. H. Winne (Eds.), *Foundations and Frontiers of Adaptive Learning Environments* New York, NY: Springer-Verlag.

Presentations

Tabak, I. (2002). Navigating the Tension between Engineered and Emergent Activity Structures: Some Challenges in Working Towards a Theory of Context. *To appear in the 2002 Annual Meeting of the American Educational Research Association*, New Orleans, LA.

Tabak, I. (2001). Teacher and Software as Interrelated Agents in a Distributed Scaffolding System to Support Inquiry. King's College, London; Technion, Haifa; Weizmann Institute, Rehovot.

Tabak, I. (2001). Old Wine in New Bottles: Towards a Practice-based Definition of a Culture of Inquiry in Science Classrooms. Paper presented at the *2001 Annual Meeting of the American Educational Research Association*, Seattle, WA.

Tabak, I. & Reiser, B.J., (2000) Exploring a Range of Student-Directed Inquiry Processes and their Influence on the Construction of Scientific Conceptions. *In 2000 Annual Meeting of the National Association for Research in Science Teaching*, New Orleans, LA.

Tabak, I., & Reiser, B. J. (1999). Steering The Course of Dialogue in Inquiry-Based Science Classrooms. In *1999 Annual Meeting of the American Educational Research Association*, Montreal, Canada.

Presentations (continued)

Tabak, I., Reiser, B.J., Spillane, J.P. (1999). BGuILE: Teachers, Students and Materials Interacting to Construct Biological Knowledge. Poster presentation at *CILT99 The 1999 Annual CILT Conference*, San Jose, CA.

Tabak, I., & Reiser, B. J. (1998). BGuILE: Developing Strategic and Conceptual Knowledge in Technology-Supported High School Biology Classes. In *1998 Annual Meeting of the National Association for Research in Science Teaching*, San Diego, CA.

Tabak, I., Sandoval, W. A., Smith, B. K., Steinmuller, F., & Reiser, B. J. (1998). BGuILE: Facilitating Reflection as a Vehicle Toward Local and Global Understanding. *1998 Annual Meeting of the American Educational Research Association*, San Diego, CA.

Sandoval, W. A., Tabak, I., Smith, B. K., Steinmuller, F., & Reiser, B. J. (1998). BGuILE: Iterative Design of a Technology-Supported Biological Inquiry Curriculum. *1998 Annual Meeting of the American Educational Research Association*, San Diego, CA.

Reiser, B. J., Sandoval, W. A., Smith, B. K., & Tabak, I. (1998). Teachers' Support of Students' Biological Inquiry: Making Use of Artifacts of Students' Reasoning. *1998 Annual Meeting of the American Educational Research Association*, San Diego, CA

Reiser, B. J., Tabak, I., Sandoval, W. A., & Steinmuller, F. (1998). Teaching Evolutionary Reasoning and Argumentation. *Twentieth Annual Meeting of the Cognitive Science Society*, Madison, WI.

Tabak, I., & Reiser, B. J. (1997). Domain-Specific Inquiry Support: Permeating Discussions with Scientific Conceptions. In *Proceedings of From Misconceptions to Constructed Understanding*, Ithaca, NY.

Tabak, I., Smith, B. K., Sandoval, W. A., & Agganis, A. (1996). BGuILE: Supporting Inquiry in a Learning Environment for Biology. In *1996 Annual Meeting of the American Educational Research Association*, New York, NY.

Guzdial, M., Soloway, E., Hohmann, L., Tabak, I., Brade, K., Konemann, M., Walton, C., & Robinson, B. (1992). Student Outcomes Using the GPCeditor. *Annual Meeting of the American Educational Research Association*, San Francisco, CA.

Hayes, P. J., Tabak, I., & Soloway, E. (1989). Consistency and Salience: Interface Issues in Macintosh Fundamentals and Beyond. Apple Computer, Inc., Cupertino, CA

Hayes, P. J., & Tabak, I. (1989). MFB: Navigational Issues in a HyperText Training System. *HCI Workshop at the Cognitive Science and Machine Intelligence Lab (CSMIL)*, The University of Michigan, Ann Arbor, MI

Tabak, I. 1996 - 1999, yearly presentations in the Learning Sciences sponsored brown bag colloquium.

Technical and Research Reports

Hibino, S., Tabak, I., & Soloway, E. (1992). Key Criteria for User Training: Approachability, Proficiency and Applicability. Unpublished manuscript. The University of Michigan, Ann Arbor.

Soloway, E., Hayes, P. J., & Tabak, I. (1989). Final Project Report: Facilitating Enhanced Learning in Macintosh Fundamentals and Beyond. Apple Computer, Inc., Cupertino, CA.