CURRICULUM VITAE

Name: Prof. Anat Zohar

HIGHER EDUCATION

1991	Ph.D. Hebrew University of Jerusalem, Science Education (Summa Cum Laude). Supervisor: Prof. Pinchas Tamir
1982	M.Sc. Hebrew University of Jerusalem, Genetics (with distinction). Supervisor: Professor Giora Simchen
1979	BA Hebrew University of Jerusalem, Philosophy and Biology and teachers' certificate

APPOINTMENTS AT THE HEBREW UNIVERSITY

2010-	**Full Professor**, School of Education, Hebrew University
2004- 2010	Associate Professor, School of Education, Hebrew University
1998-2004	Senior Lecturer, School of Education, Hebrew University
1995-199	Lecturer, School of Education, Hebrew University
1993-1994	Research Associate, Dept. of Science Education, Hebrew University
1990-1991	Instructor, Dept. of Science Education, Hebrew University
1985-1989	Teaching and Research Assistant, Dept. of Science Education, Hebrew University
1980-1982	Teaching Assistant, Dept. of Genetics, Institute of Life sciences, Hebrew University

SERVICE IN OTHER PROFESSIONAL, ACADEMIC AND RESEARCH INSTITUTIONS

2014-2015	Consultant, Israel Ministry of Education.
2010-	Faculty. Mandel Leadership Institute, Jerusalem, Israel.
2009-2010	**Membe**r, School of Social Science, **Institute for Advanced Study, Princeton, NJ**
2006 - 2009	**Director of pedagogical affairs, Israel Ministry of Education. Initiator and implementer of the "Pedagogical Horizons" programs designed to foster higher order thinking across the curriculum in all Israeli schools**.
2004	Visiting scholar. Teachers College, Columbia University
1999-2000	Visiting Scholar. Graduate School of Education, Harvard University.
1994-1995	Lecturer, Dept. of Science and Technology Education, Technion, Israel Institute of Technology
1991-1993	Research Associate, Developmental Psychology, Teachers College, Columbia University
1992-1993	Consultant, ETS (Educational Testing Service), Princeton, NJ
1991-1993	Post - Doctoral Research Fellow, Developmental Psychology,

Teachers College, Columbia University. Host: Prof. Deanna Kuhn

ADDITIONAL SELECTED ACTIVITIES

Professional and Public Services in Israel (To avoid conflict of interests I was required to resign from all the activities I had been involved in when I began my work at the Israeli Ministry of Education on Sept 1st, 2006).

2010-	**Faculty, Mandel Institute for Educational Leadership**.
2014-2015	Committee member. Committee of quality control- evaluating schools of education in Israeli universities. Committee for Higher Education (CHE)
2013-	Member of Steering Committee- the Movement for Empowering the Human Spirit through Education.
2013-2014	Consultant. Center for Educational Technology (MATACH), consulting on the design of PISA science simulations.
2012-2013	Committee member. Steering committee overseeing the study "Assessment of implementing the National ICT program". RAMA, Israeli Authority for Research and Evaluation in Education.
2011-2014	Knowledge and Information. Research Group in Education, Van-Leer Institute.
2007 – 2009	Member, Board of Directors, Avnei Rosha (Israeli Institute for the Development of School Principals).
2006-2009	Member, Board of Directors, RAMA (Israel Authority for Research and Evaluation).
2005- 2006	Academic advisor of a new series of 1st -6th grade science textbook. "Reches Educational Enterprises".
2005- 2006	Member of academic committee of "RAMA" (National committee for measurement and assessment).
2005- 2006	**Chair**: Steering committee "Encouraging girls in science and technology education". Israeli Ministry of Education.
2005- 2006	**Chair:** Steering committee "TIMSS 2007". Israeli Ministry of Education
2004- 2006	Member of Steering committee for the 2006 PIZA study in Israel. Israeli Ministry of Education.
2002- 2006	Member of steering committee for "Education for Gifted Children". Israeli Ministry of Education.
2002- 2005	**Chair**. Steering committee for designing performance assessment tasks in Science and Technology in elementary schools. Israeli Ministry of Education.
2002- 2006	Consultant for issues of Gender Equity in Israeli Schools. Israeli Ministry of Education.
2001- 2005	**Chair**. Steering committee for research project "Studying the status of Inquiry Learning in Elementary Schools". Office of Chief Scientist, Israeli Ministry of Education.

2001- 2002   Member of Committee for "Investigating Gender Stereotypes in Textbooks". Committee appointed by the Ministeress of Education, Mrs. Limor Livnat.

List of Publications

Prof. Anat Zohar

School of Education, Hebrew University

Last update: January, 2016

a. Doctoral Dissertation

1. **Zohar, A**. (1990). Identifying Difficulties in the Abilities for Causal Reasoning and Distinguishing Between Causal and Teleological explanations and the Design of a Usable Diagnostic Test Utilizing a Microcomputer. Supervisor: Prof. P. Tamir. Unpublished Doctoral Dissertation, approved by the Hebrew University of Jerusalem, 1991 (141 pages + Appendix) (Hebrew)
Parts of the Ph.D. dissertation were revised, extended and published in articles # 16, 17 19.

b. Books

2. **Zohar, A**. (1996). Learning, thinking and learning to think. Jerusalem: The Branco Weiss Institute for the Development of Thinking (In Hebrew, 179 pages).
3. **Zohar, A.** (2004). Higher order thinking in science classrooms: Students' learning and teacher' professional development. The Netherlands: Kluwer Academic Press (260 pages).
4. Weinberger, J**.** and **Zohar, A**. (2005). Developing students' thinking: a challenge in pre-service teacher education. Tel Aviv: The Mofet Institute (In Hebrew, 191 pages).
5**. Zohar, A.** (2013). It's not all about test scores: Reviving Pedagogical Discourse. Bnei Brak: Poalim - Hakibutz Hameuchad (in Hebrew, 262 pages).

c. Edited books

6. . **Zohar, A.** (Editor) (2006). Teaching and learning by inquiry: an ongoing challenge. Jerusalem: Magnes (In Hebrew, 341 pages).
7. **Zohar, A.** and Y. J. Dori (eds.). (2012). Metacognition in science education: Trends in current research. NY., NY: Springer (276 pages).

d. Chapters in Edited, peer-refereed books

8. **Zohar, A.** (2000). Inquiry learning as higher order thinking: Overcoming cognitive obstacles. In: Minstrell, J. and van Zee, E. H. (eds.). Inquiring into inquiry learning and teaching in science. (pp. 405-424). Washington DC: American Association for the Advancement of Science (AAAS).
9. Weinberger, Y., and **Zohar, A**. (2000). Higher order thinking in science teacher education in Israel. In: Abell, S. K. (Ed.). Science teacher education: an international perspective, Dordrecht, London, Boston: Kluwer Academic Press.
10. **Zohar, A**. (2006). Introduction. In: Zohar, **A.** (Editor) (2006). Teaching and learning by inquiry: an ongoing challenge. Pp. 1-12. Jerusalem: Magnes
11. **Zohar, A**. (2006). Inquiry learning, higher order thinking skills and metacognition. In: Zohar, **A.** (Editor) (2006). Teaching and learning by inquiry: an ongoing challenge. Pp. 57-84. Jerusalem: Magnes
12. **Zohar, A**. (2008). Science teacher education and professional development in argumentation. In: Erduran, S. and Jiménez-Aleixandre, María Pilar (Eds.).

Argumentation in science education: Perspectives from classroom-based research, Chapter 12, pages 245-268: Springer

13. Barzilai, S., & Zohar, A. (2009). The role of epistemic thinking in online learning. In Eshet, Y., Caspi, A., Eden, S., Geri, N. and Yair, Y. (eds.), Learning in the Technological Era: Proceedings of the 4th Chais Conference on instructional technologies research (pp. 29-33). Ra'anana, Israel: The Open University of Israel

14. Barzilai, S. and **Zohar, A**. (2011). "How do you know?" epistemology and individual learning from on- line information sources. In: Chen, D. and Koretz, G. (Eds.). On-line learning and instruction, pp. 77-100. Or Yehuda: The Center for Academic Studies (in Hebrew).

15. **Zohar, A.** (2012). Explicit teaching of meta-strategic knowledge: Definitions, student's learning, and teachers' professional development. In: **Zohar, A.** and Y. J. Dori (Eds.). Metacognition in science education: Trends in current research. Ch. 9, pages 197-224. NY., NY: Springer.

16. **Zohar, A**, and Y. J. Dori . (2012). Introduction. In: **Zohar, A.** and Y. J. Dori (Eds.). Metacognition in science education: Trends in current research, pages 1-20. NY., NY: Springer.

17**. Zohar, A**. (2013). Education for thinking in Civics educations. In: Avnon, D. (Ed.). Civic Education in Israel, pp. 45-61. Tel Aviv: Am Oved.

18**. Zohar, A**., & Barzilai, S. (2015). Metacognition and teaching higher order thinking (HOT) in science education. In R. Wegerif, James, L. L. and Kaufman, C. (Eds.). *The Routledge International Handbook of Research on Teaching Thinking*, pages 229-242.

19. Barzilai, S., & **Zohar, A**. (2016). Epistemic (meta) cognition: Ways of thinking about knowledge and knowing. In J. A. Greene, W. A. Sandoval & I. Bråten (Eds.), *Handbook of epistemic cognition*. Oxon, UK: Routledge, pages 410-424.

20. **Zohar, A**. (2016). Knowledge, information and thinking abilities in 21st century schools. In: Beck, S. (Ed.). Knowledge and information. Pp. 85-113. Tel-Aviv: Mofet. (in Hebrew).

21. Zohar, A. (In Press). Wide scale implementation through capacity building of senior leaders: the case of teaching thinking in Israeli schools. In D. Hung., S. S. Lee., Y. Toh., L.K. Wu., & A. Jamaludin (Eds.), Innovations in educational change - Cultivating ecologies for schools (pp. xx-xx). Singapore: Springer.

Refereed Articles

22**. Zohar, A.** & Tamir, P. (1986) A new instrument to assess the inquiry characteristics of science computer software. Journal of Computers in Mathematics and Science Teaching, *6*, 44-47.

23. Tamir, P. & **Zohar, A**. (1991) Anthropomorphism and teleology in reasoning about biological phenomena. Science Education, *75,* 57-67.

24**. Zohar, A**. & Tamir, P. (1991). Assessing students' difficulties in causal reasoning in biology- a diagnostic instrument. Journal of Biology Education, *25*, 302-307.

25. **Zohar, A**. & Tamir, P. (1993) Incorporating critical thinking within a regular highschool biology curriculum. School Science and Mathematics, *93*, 136-140.

26 . Friedler, Y., **Zohar, A**. & Tamir, P. (1993) Anthropomorphic and teleological explanations: do they depend on age and /or biological training? <u>International Journal of Science Education</u>, *15*, 439-443.

27**. Zohar, A**., Weinberger, Y. & Tamir, P. (1994). The effect of the biology critical thinking project on the development of critical thinking. <u>Journal of Research in Science Teaching</u>, *31*, 183-196.

28. **Zohar, A**. (1994). Teaching a thinking strategy: transfer across domains and self learning versus class-like setting. <u>Applied Cognitive Psychology, 8</u>, 549-564.

29. **Zohar, A.** (1995). Reasoning about interactions between variables. <u>Journal of Research in Science Teaching</u>, *32,* 1039-1063.

30.   **Zohar, A**. (1996). Transfer and retention of reasoning skills taught in biological contexts. <u>Research in Science and Technological Education,</u> *14,* 205-219.

31. Kuhn, D., Garcia-Mila, M., **Zohar, A**. & Anderson, C. (1995). Strategies of Knowledge Acquisition. <u>Monographs of the Society for Research in Child Development (MSRCD)</u>, *60*, 1-128.

32. **Zohar, A**. (1998). Result or Conclusion? Students' Differentiation between experimental results and conclusions. <u>Journal of Biological Education</u>, *32*, 53-59.

33. **Zohar, A**., Schwartzer, N. and Tamir, P. (1998). Assessing the cognitive demands required of students in class discourse, homework assignments and tests. <u>International Journal of Science Education</u>, *20*, 769-782.

34. **Zohar, A**. & Ginossar, S. (1998). Lifting the taboo regarding teleology and anthropomorphism in biology education- heretical suggestions. <u>Science Education</u>, *82,* 679-697.

35. **Zohar, A**. (1999). Teachers' metacognitive knowledge and instruction of higher order thinking. <u>Teaching and Teachers' Education</u>, *15*, 413-429.

36. **Zohar, A.** (2000). Teachers' metacognitive knowledge regarding teaching of reasoning skills. <u>Dapim,</u> *30*, 10-33.

37. **Zohar, A.,** Vaaknin, E., & Degani, A. (2001). Teachers' beliefs about low achieving students and higher order thinking. <u>Teaching and Teachers' Education</u>, *17*, 469-485.

38. **Zohar, A.** and Nemet, F. (2002). Fostering students' knowledge and argumentation skills through dilemmas in human genetics. <u>Journal of Research in Science Teaching</u>, *39,* pp. 35-62.

39.   **Zohar, A.** (2002). Teachers' pedagogical knowledge and instruction of higher order thinking. <u>Megamot</u> *42*, pp. 3-26 (In Hebrew).

40.   **Zohar, A.** and Sela, D. (2002). Her physics, his physics: gender issues in Israeli advanced placement physics classes. <u>International Journal of Science Education</u>, *25,* 245-268.

41.   **Zohar, A**. and Dori, Y. J. (2003). Higher Order Thinking Skills and Low Achieving Students: Are they Mutually Exclusive? <u>The Journal of the Learning Sciences</u>, *12,* 145-182.

42**. Zohar, A**. (2004). Elements of pedagogical knowledge in the context of teaching higher order thinking. *Journal of Science Teacher Education. 15, 293-312.*

43. **Zohar, A.,** & Bronstein, B. (2005). Physics Teachers' knowledge and beliefs

regarding girls' low participation rates in advanced physics classes. International Journal of Science Education, *27, 61-78*.

44. **Zohar, A**. & Aharon-Kravetsky, S. (2005). Exploring the effects of cognitive conflict and direct teaching for students of different academic level. Journal of Research in Science Teaching, 42, 829-855.

45**. Zohar, A**. & Schwartzer, N. (2005). Assessing teachers' pedagogical knowledge regarding issues pertaining to instruction of higher order thinking. International Journal of Science Education, 27, 1595-1620.

46. **Zohar, A.** (2006). The nature and development of teachers' meta-strategic knowledge in the context of teaching higher order thinking. *The Journal of the Learning Sciences, 15,* 331-377.

47. **Zohar, A.** (2006). Higher order thinking in science classrooms: goals, means and research findings. Ensecanza de las Ciencias, 24, 157-172 (In Spanish).

48. **Zohar, A.** (2006). Connected knowledge in science and mathematics education. International Journal of Science Education, *28,* 1579-1600.

49. Barzilai, S. and **Zohar, A**. (2006). How does Information Technology shape thinking? Thinking Skills and Creativity, 1, 130-145.

50. **Zohar, A**. and Gershikov, A. (2008). Gender and performance in mathematical tasks: does the context make a difference? International Journal of Science and Mathematical Education, 6, 677-693.

51. Barzilai, S. and **Zohar, A**. (2008). Is information acquisition still important in the information age? Education and Information Technologies*, 13*, 35-53.

52. **Zohar, A. (2008).** Teaching thinking on a national scale: Israel's pedagogical horizons. Thinking Skills and Creativity, 3, 77–81.

53**. Zohar, A**. and Peled, B. (2008). The effects of explicit teaching of metastrategic knowledge on low- and high-achieving students. Learning and Instruction, 18, 337-353.

54. **Zohar, A**. and Ben David Adi (2008). Explicit teaching of meta-strategic knowledge in authentic classroom situations. Metacognition and Learning, 3, 59-82.

55**. Zohar, A.** and Ben David, Adi (2009). Paving a clear path in a thick forest: a conceptual analysis in a metacognitive component. Metacognition and Learning, 4, 177-195.

56. Ben David, A. and **Zohar, A**. (2009). Contribution of meta-strategic knowledge to scientific inquiry. International Journal of Science Education*,* 31: 12, 1657-1682.

57**. Zohar, A**. (2010). Renewal of the Israeli Matriculation Exams: Evolution or Revolution? Iyunim Behinuch, New Series #3, 158-174. (in Hebrew).

58. Barzilai, S. and **Zohar, A**. (2012). Epistemic Thinking in Action: Evaluating and Integrating Online Sources. Cognition and Instruction, 30, 39-85.

58. Gallagher, C., Hipkins, R. and **Zohar, A.** (2012). Positioning thinking within national curriculum and assessment systems: Perspectives from Israel, New Zealand and Northern Ireland. Thinking Skills and Creativity, 7, 134-143.

60. **Zohar, A**. (2013). Challenges in wide scale implementation efforts to foster higher order thinking (HOT) in science education across a whole school system. Thinking Skills and Creativity, 10, 233-249.

61. **Zohar, A**. (2013). Introduction: Scaling up higher order thinking in science classrooms: the challenge of bridging the gap between theory, policy and practice. Thinking Skills and Creativity, 10, 168-172.
62. **Zohar, A**. and Barzilai, S. (2013). A review of research on metacognition in science education: current and future directions. Studies in Science Education, 49(2),
63. Barzilai, S. and **Zohar, A**. (2014). Reconsidering personal epistemology as metacognition: a multifaceted approach to the analysis of epistemic thinking. Educational Psychologist, 49(1), 13-35.
64. **Zohar, A**. and Cohen, A. (in press). Large scale implementation of higher order thinking (HOT) in civic education: the interplay of policy, politics, pedagogical leadership and detailed pedagogical planning. To be published in Thinking Skills and Creativity.
65. Nir, A., Ben David, A., Bogler, R., Inbar, D., and Zohar, A. (in press). School autonomy and 21st century skills in the Israeli educational system: Discrepancies between the declarative and operational levels" To be published in The International Journal of Educational Management.

Other publications
Learning materials

Zohar, A. & Weinberger, Y. (1995). Thinking in Science. Jerusalem: Science Education Center, The Hebrew University (in Hebrew)

Zohar, A. & Namet, F. (1996). The Genetic Revolution: Discussing Moral Dilemmas (Student and Teacher Booklet). Jerusalem: Science Education Center, The Hebrew University (Hebrew).

Zohar, A. & Weinberger, Y. (1997). Microworlds. Five Computer Simulations for Developing Higher Order Thinking in Biology, including worksheets for students and teachers' guide (A new teachers' guide is currently in press). Jerusalem: Science Education Center, The Hebrew University (Hebrew).

Zohar, A., Margalit, Y. & Schwarzer, N. (1998). Open Inquiry Learning Activities. Jerusalem: Science Education Center, The Hebrew University (Hebrew).

Popular position papers and reports

Zohar, A. (1999). Teacher Preparation Towards Developing Students' Thinking. Tel Aviv: The Mofet Institute.

Zohar, A. (2007). "Pedagogical Horizon": A reform or a change? Hed Hachinuch, Vol. 81, p. 41-43.

Zohar, A. (Ed.). (2009). Education for Thinking (Pedagogical Horizons) Report, 2006-2009. Jerusalem: The Ministry of Education

Zohar, A. (2011). A make believe reform (book review). Hed Hachinuch, Vol. 85(4), p. 134.

Zohar, A. (2011). International tests, risks and opportunities. Hed Hachinuch, Vol. 85(5), p. 18-21.

Zohar, A. (2011). Towards ICT with pedagogical horizons. Hed Hachinuch, vol. 86(2), p. 95-98.

Cohen, A. and Zohar, A. (2014). Performance assessment task: between autonomy and control. Hed Hachinuch, vol. 88(4), p. 102-105.