30.11.22

CURRICULUM VITAE AND LIST OF PUBLICATIONS

Name: Prof. Anat Zohar, Besen Family Chair for Integrated Studies in Education

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

Consultant, Israel Ministry of Education.	2014-2015
Faculty. Mandel Leadership Institute, Jerusalem, Israel.	2010-
Member, School of Social Science, **Institute for Advanced Study, Princeton, NJ**	2009-2010
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.	2006 - 2009
Visiting scholar. Teachers College, Columbia University	2004
Visiting Scholar. Graduate School of Education, Harvard University.	1999-2000
Lecturer, Dept. of Science and Technology Education, Technion, Israel Institute of Technology	1994-1995
Research Associate, Developmental Psychology, Teachers College, Columbia University	1991-1993
Consultant, ETS (Educational Testing Service), Princeton, NJ	1992-1993

Post - Doctoral Research Fellow, Developmental Psychology, 1991-1993
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).

Chair: Committee for Adapting Curricula and Study Materials for the 21st century. Initiative for Applied Education Research, The Israeli Academy of Sciences.	2017- 2020
Director. Research center for studying pre-service education and teachers' learning in the 21st century. Syemor Fox School of Education, The Hebrew University	2017-2022
Endowed Chair: The Besen family chair for integrated studies in education	2016-
Faculty, Mandel Institute for Educational Leadership.	2010-
Committee member. Committee of quality control- evaluating schools of education in Israeli universities. Committee for Higher Education (CHE)	2014-2015
Member of Steering Committee- the Movement for Empowering the Human Spirit through Education.	2013- 2017
Consultant. Center for Educational Technology (MATACH), consulting on the design of PISA science simulations.	2013-2014
Committee member. Steering committee overseeing the study "Assessment of implementing the National ICT program". RAMA, Israeli Authority for Research and Evaluation in Education.	2012-2013
Knowledge and Information. Research Group in Education, Van-Leer Institute.	2011-2014
Member, Board of Directors, Avnei Rosha (Israeli Institute for the Development of School Principals).	2007 – 2009
Member, Board of Directors, RAMA (Israel Authority for Research and Evaluation).	2006-2009
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	2005- 2006
Member of Steering committee for the 2006 PIZA study in Israel. Israeli Ministry of Education.	2004- 2006
Member of steering committee for "Education for Gifted Children". Israeli Ministry of Education.	2006 -2002
Chair. Steering committee for designing performance assessment tasks in Science and Technology in elementary schools. Israeli Ministry of Education.	2002- 2005

Consultant for issues of Gender Equity in Israeli Schools. 2002- 2006
Israeli Ministry of Education.

Chair. Steering committee for research project “Studying the 2001- 2005
status of Inquiry Learning in Elementary Schools". Office of Chief
Scientist, Israeli Ministry of Education.

Member of Committee for “Investigating Gender Stereotypes in 2001- 2002
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

Doctoral .a

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).
6. Zohar, A. (2020). Connecting the islands to a continent. Jerusalem: Magness.
7. **Zohar, A.** (in press). Scaling Up Higher Order Thinking: Demonstrating a Paradigm for Deep Educational Change. Springer.

c. Edited books

8. **Zohar, A.** (Editor) (2006). Teaching and learning by inquiry: an ongoing challenge. Jerusalem: Magnes (In Hebrew, 341 pages).
9. **Zohar, A.** and Y. J. Dori (eds.). (2012). Metacognition in science education: Trends in current research. NY., NY: Springer (276 pages).
10. **Zohar, A.** and Busherian, O. (Eds). (2020). Adapting Curricula and Learning Materials to the 21st Century. Jerusalem: Center for Knowledge and Research in Education, The Israel Academy of Sciences **http://education.academy.ac.il**.

d. Chapters in Edited, peer-refereed books

11. **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).

12. 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.

13. **Zohar, A**. (2006). Introduction. In: Zohar, **A.** (Editor) (2006). Teaching and learning by inquiry: an ongoing challenge. Pp. 1-12. Jerusalem: Magnes

14. **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

15. **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

16. 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

17. 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).

18. **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.

19. **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.

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

21. 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.

22. 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.

23 **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).

24. Zohar, A. (2016). Metacognitive teaching and teaching for understanding. In: Harpaz, Y. (Ed.). Understanding Understanding: Theory and practice (pp. 162-171). Tel Aviv: Mofet.

25. Zohar, A. (2018). Foreword. In: Dori, Y. J., Mevarech, Z. R., & Fan, L. (Eds.). *Cognition, Metacognition, and Culture in STEM Education*. Springer, Cham

26. Zohar, A. and Lustov, E. (2018). Challenges in addressing metacognition in professional development programs in the context of instruction of higher-order thinking. In: Weinberger, Y., & Libman, Z. (2018). Contemporary Pedagogies in Teacher Education and Development. DOI: 10.5772/intechopen.71989. https://www.intechopen.com/books/contemporary-pedagogies-in-teacher-education-and-development/challenges-in-addressing-metacognition-in-professional-development-programs-in-the-context-of-instru

27. Zohar, A. (2019). 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. 41-64). Singapore: Springer

28. Zohar, A. (2020). Constructing deep knowledge for ALL students. In: Harpaz, Y. and Horowitz, E. (editors). Education at a Crosswords. Modi'in: Kineret Zmora Dvir Publishers.

29. Zohar, A. (2021). Epistemology and common pedagogies: how to avoid superficial knowledge in curricular planning and teachers' learning. In: Arear H., Kwartz, G. and Bar-Yishai, H. (Eds.). Education as a complex system. Chapter 12. Haifa: Pardes Publishers.

30. Zohar, A. and Resnick, M. S. (2021). Professional Development for the Support of Teaching through Inquiry. In: Chinn, C., and Golan-Duncan, R. (Eds.). The *International Handbook on Inquiry and Learning*., New York, NY: Routledge

Refereed Articles

31. 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.

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

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

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

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

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

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

38. **Zohar, A.** (1995). Reasoning about interactions between variables. Journal of Research in Science Teaching, *32*, 1039-1063.

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

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

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

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

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

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

45. **Zohar, A.** (2000). Teachers' metacognitive knowledge regarding teaching of reasoning skills. Dapim, *30*, 10-33.

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

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

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

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

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

51. Zohar, A. (2004). Elements of pedagogical knowledge in the context of teaching

higher order thinking. *Journal of Science Teacher Education. 15, 293-312.*

52. **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*.

53. **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.

54. 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.

55. **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.

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

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

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

59. **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.

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

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

62. **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.

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

64. **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.

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

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

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

68. 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.

69. **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.

70. **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.

71. **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),

72. 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.

73. **Zohar, A**. and Cohen, A. (2016). Large scale implementation of higher order thinking (HOT) in civic education: the interplay of policy, politics, pedagogical leadership and detailed pedagogical planning. Thinking Skills and Creativity, 21, 85-96.

74. Nir, A., Ben David, A., Bogler, R., Inbar, D., and Zohar, A. (2016). School autonomy and 21st century skills in the Israeli educational system: Discrepancies between the declarative and operational levels" The International Journal of Educational Management, 30(7), 1231-1246.

75. Zohar, A. and Alboher Agmon V. (2017). Raising test scores vs. teaching higher order thinking (HOT): senior science teachers' views on how several concurrent policies affect classroom practices. Research in Science and Technological Education. http://www.tandfonline.com/doi/full/10.1080/02635143.2017.1395332

76. Dori, Y. J., Zohar, A., Fischer-Shachor, D., Kohan-Mass, J., & Carmi, M. (2018). Gender-fair assessment of young gifted students' scientific thinking skills. *International Journal of Science Education*, 1-26.

77. Cohen, A. and Zohar, A. (2018). "Tango between planning and letting go": System wide pedagogical change - reflection on implementing the Civic performance task. Dapim, (in Hebrew)

78. Zohar, A. & Hipkins, R. (2018). How tight/loose curriculum dynamics impact the treatment of knowledge in two national contexts. Curriculum Matters, 14, 48-64. **DOI:** https://doi.org/10.18296/cm.0029

79. Tzemach, U. and Zohar, A. (2020). How Ultra-Orthodox man write an academic paper. Dapim 72, 199-228. (in Hebrew)

80. Tsemach, E., & Zohar, A. (2020). From Yeshiva to Academia: The Argumentative Writing Characteristics of Ultra-Orthodox Male Students. *Argumentation*, 1-25. https://doi.org/10.1007/s10503-020-09541-z

81. Tsemach, E., & Zohar, A. (2021). The intersection of gender and culture in argumentative writing. *International Journal of Science Education*, 1-22.

82. Zohar, A., & Ben-Ari, G. (2022). Teachers' knowledge and professional development for metacognitive instruction in the context of higher order thinking. *Metacognition and Learning*, 1-41.

83. Nir, A. E.., Ben-David, A. Inbar, D. Bogler, R. & Anat Zohar, (2022). Balancing leaders' control and teacher empowerment: The case of successful schools, *International Studies in Educational Administration*, 124-143.

84. Tsemach, E., & Zohar, A. (in press). “The King Will Be Corrupt TOO: Teaching thinking in bible studies. *Journal of Curricular Studies.*

Fellowships

Institute for Advanced Study, Princeton, NJ. Paula and James Crown fellowship.	2009-2010
A post doctoral fellowship. The Wolf Foundation,	1993-1994
A post doctoral fellowship. Granted by the James S. McDonnell Foundation, in the program: Cognitive Studies for Educational Practice (CSEP).	1992-1993
A post doctoral fellowship. The Lady Davis Foundation.	1991

RESEARCH GRANTS

(Between 2006-2009 I was on an unpaid leave for the purpose of fulfilling a public role (working in the Israel Ministry of Education) and could not apply for research grants. Due to conflict of interests I was unable to apply for grants related to the Israeli Ministry of Education for five years after leaving the Ministry)

2017-2022	Israel Science Foundation. Meaningful learning stage two: deepening current innovative learning and instruction by adding components of meta-level learning. Anat Zohar with Tova Michalsky and Judy Weinberger.
Israeli Ministry of Education. International study of school autonomy and innovative pedagogies. Anat Zohar with Adam Nir, Dan Inbar and Ronit Bogler	2015-2017
Israeli Ministry of Education. "Affirmative action for gifted girls. Anat Zohar and Judy Dori	2005-2006
Israel Science Foundation. "Analysis of learning processes induced by meta - strategic teaching of higher order thinking in science. Anat Zohar	2003-2006
Hebrew University Internal Funds. "Inquiry learning- characterization of cognitive processes"	2001-2002
Chief Scientist competition, Israeli Ministry of Education. "Inquiry learning- characterization of cognitive processes".	1999
Hebrew University, Internal Funds, "Science Teachers' Critical Thinking Skills and Dispositions", Zohar Anat	1998
Israeli Ministry of Education (within the project "Tomorrow 98 and the Science Education Center, Hebrew University), "Thinking in Science Classroom Project - Implementation", Ben Zvi Nava and Zohar Anat	1997-1998
Research Institute for Innovation in Education and the School of Education, Hebrew University,, "Science Teachers' Critical Thinking Skills and Dispositions", Zohar Anat	1997-1998
"Young Investigator Award. Granted by **the James S.**	1996-1999

McDonnell Foundation in the program: Cognitive Studies for Educational Practice (CSEP), "Teachers Cognition in Implementing Higher Order Reasoning in Science Classrooms".	Zohar Anat 1994-1996
Israeli Ministry of Education (within the project “Tomorrow 98 and the Science Education Center, Hebrew University), “Thinking in Science Classroom Project- Phase 1”, Ben Zvi Nava and Zohar, A.	

f. Oher 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.

g. Participation in Scientific Conferences and Lectures

Before last promotion

Zohar, A. & Tamir, P (1986). Evaluation of inquiry in educational software. Lecture presented at the Third Convention of Computer Application in Education, Tel-Aviv.

Zohar, A. & Tamir, P. (1987). Causal reasoning in biology education. Lecture presented at the Second convention of the Israeli Science Education Center, December.

Zohar, A. & Tamir, P.(1989). Identifying cause - effect relationships. Lecture presented at the 2nd International Jerusalem Convention of Education, June.

Tamir, P. & Zohar, A. (1989). Anthropomorphism and Teleology in reasoning about biological phenomena. Lecture presented at the International Conference on the History and Philosophy of Science Education, Florida State University, Tallahassee, November.

Zohar, A. & Tamir, P. (1991). Incorporating critical thinking within a regular high school biology curriculum. Lecture presented at the 64th annual NARST convention, Lake Geneva, April.

Zohar, A. & Tamir, P. (1991). Diagnostic instruments for distinguishing between causal and teleological explanations in biology. Lecture presented at the convention of the Israeli Corporation for the Advancement of Education (Ayala), Bar-Ilan University, June.

Zohar, A. (1992). Developing critical thinking as an important component of scientific literacy. Lecture presented in the Seventh Technological Literacy Conference, NASTS, Alexandria, Va, February.

Zohar, A., Freidler, Y. & Tamir, P. (1992). Anthropomorphic and teleological explanations: Do they depend on age and/or biological training? Lecture presented at the 65th annual NARST convention, Boston, March.

Zohar, A.(1993). Teaching scientific thinking skills through microworlds. Lecture presented at the 66th annual NARST convention, Atlanta, Georgia, April.

Zohar, A., Weinberger, Y. & Tamir, P. (1993). Developing critical thinking: a useful instructional strategy for promoting in depth science learning. Lecture presented in the AERA Annual Meeting, Atlanta, Georgia, April, 1993.

Gitomer, D. & Zohar, A. (1993). Qualitative assessment in the science classroom. An invited symposium presentation for the 66th annual NARST convention, Atlanta,

Georgia, April.

Gitomer, D., Duschl, R. A., Zohar, A. & Chang, M. (1994). The impact of portfolio culture practices on classroom discourse. An invited symposium presented in a on the consequences of performance-based assessment for teaching, the AERA Annual meeting.

Zohar, A.(1996). . Thinking in Science Project. Lecture presented in the third National Conference of the Israeli Teachers and Educators, Jerusalem, March.

Zohar, A. (1996). Thinking Teachers: Conflicts between teachers' cognition and higher order thinking in science classrooms. An invited lecture for the McDonnell foundation in the program Cognitive Studies for Educational Practice (CSEP) conference, St. Louis, November, 1996.

Zohar, A., Shwarzer, N. & Tamir, P. (1997). Assessing the cognitive demands required of students in class discourse, homework assignments and tests. Lecture presented at the NARST annual meeting, Chicago, March.

Zohar, A. (1997) Thinking Teachers: Teachers' cognition in Implementing Higher Order Thinking in Science Classrooms. Lecture presented in the first ESERA (European Science Education Research Association) meeting, Rome, Italy, 2-6 September.

Zohar, A.(1998). Teachers' metacognitive knowledge and the instruction of higher order thinking skills. Lecture presented in the NARST annual meeting, San Diego, California, 19-22 April.

Zohar, A. & Nemet, F. (1998). Fostering students' argumentation skills thriugh bio- ethical dilemmas in genetics. Lecture presented in the second ERIDOB (European Research in Didaktik of Biology) conference, Gotenburg, Sweden, 18-21 November.

Zohar, A. (1999). When Johnny Can't Think Properly: Teachers' Pedagogical Knowledge about Instruction of Higher Order Thinking. Lecture presented at the International Workshop on Science Teachers Education toward the New Millenium, Technion, Israel Institute of Technology, January 5-6.

Zohar, A. and Nemet, F. (1999). Fostering argumentation skills through bio-ethical dilemmas in genetics. Lecture presented at the NARST annual meeting, Boston, MA, March, 28-31. Sweden, August 24-27.

Zohar, A. (1999). Are "hands-on" or laboratory learning methodologies successful for learning scientific inquiry skills?. Invited presentation for the Symposium: Do we need laboratories to teach science in schools?. NARST annual meeting, Boston, MA, March, 28-31.

Zohar, A. (1999). Teachers' Pedagogical Knowledge Regarding Instruction of Higher Order Thinking. Lecture presented at The Third International Conference on Teacher Education. Almost 2000: Crises and Challenges in Teacher Education. Tel Aviv: The Mofet Institute June 27-July 1.

Weinberger, Y., Zohar, A. and Tamir, P. (1999). Higher Order Thinking in Science Teacher Education. LEcture presented at The Third International Conference on Teacher Education. Almost 2000: Crises and Challenges in Teacher Education. June 27-July 1.

Weinberger, Y., Zohar, A. and Tamir, P. (1999). Higher Order Thinking in Science Teacher Education. Lecture presented at The Eighth European Conference for Research on Learning and Instruction (EARLI), Goteborg, Sweden, August 24-27.

Weinberger, Y., and Zohar, A., and Tamir, P. (2000). Thinking Development within science teacher education. LEcture presented at the conference of the Israeli Association for Research in Education (Ayala), Tel Aviv: Tel Aviv University: October, 25-26.

Zohar, A. (2000). Teaching higher order thinking and low-achieving students: findings and implications for instruction. Lecture presented at the conference of the Israeli Association for Research in Education (Ayala), Tel Aviv: Tel Aviv University: October, 25-26.

Zohar, A., and Schwartzer, N. (2001). The development of Pedagogical knowledge in the context of teaching higher order thinking. Lecture presented at the annual meeting of the National Association of Research in Science Teaching (NARST), St. Louis, March, 25-29.

Zohar, A. (2001). Higher order thinking in teacher education. Lecture presented at the annual meeting of the European Association for Research in Learning and Instruction (EARLI), Fribourg, Switzerland: August

Zohar, A. and Aharon, S. (2001). Deduction or induction- which is a better way for teaching a thinking strategy? Poster presented at the annual meeting of the European Association for Research in Learning and Instruction (EARLI), Fribourg, Switzerland: August

Zohar, A. and Aharon-Kravetsky, S. (2003). Cognitive conflict, direct teaching and student's academic level. Lecture presented at the annual meeting of the National Association of Research in Science Teaching (NARST), Philadelphia, March, 23-26.

Schwartzer, N. and Zohar, A. (2003). . Assessing teachers' beliefs regarding issues pertaining to instruction of higher order thinking. Lecture presented at the annual meeting of the

National Association of Research in Science Teaching (NARST), Philadelphia, March, 23-26.

Zohar, A. and Schwartzer, N. (2003). Assessing pedagogical knowledge in the context of teaching higher order thinking. Lecture presented at the 10th conference of the European Association for Research on Learning and Instruction (EARLI), Padova, Italy, August 26 - 30.

Zohar, A. (2003). Difficulties in and development of teachers' metacognitive knowledge. Lecture in the symposium Metacognitive development and training: conditions, difficulties and prospects, to be presented at the 10th conference of the European Association for Research on Learning and Instruction (EARLI), Padova, Italy, August 26 - 30.

Zohar, A. and Schwartzer, N. (2004). Teachers' meta- strategic knowledge in the context of instruction of higher order thinking skills. Lecture to be presented at the annual meeting of the National Association of Research in Science Teaching (NARST), Vancouver, April 1-3.

Zohar, A. (2005). Invited discussant in a symposium on Argumentation, at the annual meeting of the National Association of Research in Science Teaching (NARST), Dallas, April 4-7.

Zohar, A. and Peled, B. (2005). The Effects of explicit meta -strategic teaching regarding variable control on students' strategic and meta - strategic thinking. Presented at the symposium **"Current issues in the training of metacognition"** , in the annual meeting of the European Association of Research in Learning and Instruction (EARLI), Nicosia, August 23-27.

Barzilai, S. and Zohar, A. (2005). Is Information Acquisition Still Important in the Information Age? Lecture presented in the annual meeting of the European Association of Research in Learning and Instruction (EARLI), Nicosia, August 23-27.

Zohar, A. (2005). Metacognitive knowledge and professional development: What do teachers need to know in the context of thinking and inquiry strategies? Lecture presented in the symposium Metacognition, Critical Thinking, and Reflective Practice in Science Inquiry, Learning, Teaching, Argument, Writing and Reading, at the annual meeting of the National Association of Research in Science Teaching (NARST), Dallas, April 4-7.

Zohar, A. (2005). Higher order thinking in science classrooms: goals, means and research findings. An invited keynote lecture, presented in the 7th International Science Education Research Congress, Granada, September 7th-11th.

Zohar, A. (2005). Barriers to excellence: gender issues in physics and mathematics learning. An invited lecture presented in the conference "Challenging the top 20%" , Jerusalem: the Van Leer Institute, November 30.

Since last promotion

Zohar, A. and Ben David Adi (2006). Explicit teaching of meta-strategic knowledge in authentic classroom situations. Lecture presented in the 2nd conference of the EARLI SIG on Metacognition (SIG 16), Cambridge, UK, July 19-21.

Zohar, A. (2006). *A conceptual analysis of meta strategic knowledge: a specific case and general model.* Invited lecture presented in the Symposium: **Metacognition: Definitions, Constituents, and Their Intricate Relation with C**ognition. The 2nd conference of the EARLI SIG on Metacognition (SIG 16), Cambridge, UK, July 19-21.

Note: between 2006 and 2009, while serving at the Ministry of Education, my ability to attend scientific conferences abroad was severely limited.

Zohar, A. (2007). Science education for all and education for tomorrow's scientists: two links in one chain. An invited lecture in the symposium: Education in a Scientific and Technological Era: an Existential Necessity or a Luxury? Presented in the conference dedicated to the 5th anniversary of the Davidson Institute for Scientific Education. Rechovot: the Weitzman Institute of Science, March 18.

Zohar, A. (2007). The expression of the "Pedagogical Horizons" policy in teacher preparation programs in in Israel. Invited key note lecture in the 5th international teacher education conference "Teacher Education at a crossroads". Tel Aviv: The Mofet Institute, June, 25-28.

Zohar, A., & Ben-David, A. (2007). Analyzing the teaching of meta-strategic knowledge: the value of using an integrated research methodology. Lecture presented at the EARLI 12th Biennial Conference for Research on Learning and Instruction. Budapest, Hungary, August 2007.

Kohan- Mass, J. and Zohar, A. (2008). Active participation: "Ways of knowing/thinking among gifted students in Israel: is it a main contributing factor to the male majority? Lecture presented in ECHA – European Council for High Abilities, Czech Republic, Prague, September.

Zohar, A. (2009). Learning to think as a case of pedagogical renewal: the opportunities and limitations in a process that is not a structural reform. Invited lecture in the symposium: Pedagogical Perspectives of Structural Reforms. The 1st Van Leer International Education Conference "From Vision and Policy to Implementation". Jerusalem: Van Leer Institute, May, 17-19.

Zohar, A. (2009). A tale of two planets? Educational policymaking and actual classrooms in the case of teaching to think. Invited lecture, School of Social Science, Institute for Advanced Studies, Princeton, NJ, December 2nd.

Zohar, A. (2010). International tests and their effects on instructional goals: risk or opportunity? Lecture presented in the 2nd International Education Conference. Jerusalem: Van Leer Institute, November 7-10.

Zohar, A. (2011). Discussion: metacognition in science education, trends in current research. Discussant in the symposium "Overview and Discussion of the Forthcoming Book Metacognition in Science Education: Trends in Current Research". Paper presented in the annual conference of the National Association of Research in Science Teaching (NARST). Orlando, FL: April 3-6.

Zohar, A. (2011). The false dichotomy between higher-order thinking and knowledge acquisition: lessons from education reform in Israel. Invited lecture in the symposium "Thinking Critically on Higher Order Thinking: New Perspectives on a Familiar Construct". Presented in the annual meeting of the American Educational Research Association (AERA). New Orleans, Louisiana, April 8-12.

Zohar, A. (2011). Large scale implementation of teaching thinking across the curriculum: The Israeli "Pedagoglical Horizon" . Lecture presented in the symposium: "Thinking Skills in Comparative Curricula: N Ireland, New Zealand, Wales and Israel". 10th International Conference of Thinking, Belfast, Northern Ireland. June 19-24.

Zohar, A. (2011). Teaching thinking in Civics education: the intricacy of bridging the gap between policy-making and classrooms. Lecture presented in the 10th International Conference of Thinking. Belfast, Northern Ireland. June 19-24.

Zohar, A. (2011). Students' reasoning in Genetics: discussion and comments. Invited Discussant in the symposium "Improving Students' Reasoning in Genetic Issues". Lecture presented in the European Science Education Research Association (ESERA), Lyon, France. September 5-9.

Zohar, A. (2011). On structural versus essential pedagogy in the national process of implementing ICT. An invited key-note lecture for the conference "Pedagogy in the Information Age", The Initiation for Applied Research in Education, The Israeli Academy of Sciences, Hertzelia, Israel, October 10.

Zohar, A. (2012). Invited participation in the symposium: "Who Evaluates Teachers?" Conference on Teacher Evaluation, The Van Leer Institute, Jerusalem, Israel, January 5.

Zohar , A. (2012). Feedback on the new research instrument "what goes on in classrooms- instrument for structured classroom observations". An invited lecture in the conference

"Research Outcomes in Rama (Israel Authority for Research and Assessment). Tel Aviv, Israel, February 28.

Zohar, A. (2012). Education for critical thinking on the national scale: Can it be done, and if so, how? An invited lecture for the conference: Education in Israel Between Two Contrasting Pedagogies. Tel Aviv University, Tel Aviv, Israel, June 24th.

Zohar, A. (2012). Can technology contribute to the implementation of a system-wide pedagogical change? An opening invited key note lecture, to be presented in the conference: Technology, Pedagogy and Policy: Is System-Wide Innovation Possible? The Case of the ICT Program- Adapting the Educational System to the 21st Century. The Open University, R'annana , Israel, December 10.

Zohar, A. and Barzilai, S. (2014). A review of studies on MC in Science Education: How is metacognition defined and taught? Paper presented in the NARST conference, Pittsburgh, PA, March 30-April 2nd

Zohar, A. (2014). Inquiry learning in biology education in Israel and its influence on other school subjects. Invited keynote lecture presented in the annual meeting of ERIDOB, European Researchers in Didactic of Biology, The Technion, Haifa, June 30.

Barzilai, S. and Zohar, A. (2015). Mapping the Interplay of Epistemic Cognition and Epistemic Metacognition. Key note lecture presented in the 1st International SRL workshop in Israel. Bar-Ilan University, March 16

Jiménez-Aleixandre , M. P. and Zohar, A. (2015). Cognitive and Metacognitive Facets of Epistemic Thinking in the Domain of Genetics. Poster presented in the conference of the America nEducational Research Association (AERA), Illinois, Chicago, April 15-20.

Barzilai, S. and Zohar, A. (2015). Untangling the Cognitive and Metacognitive Facets of Epistemic Thinking about Conflicting Sources. Symposium paper presented in the conference of the European Association for Research in Learning and Instruction (EARLI). Cyprus, Limassol, August, 25-29.

Zohar, A. (2015). A cognitive and metacognitive framework of teachers' knowledge for professional development in the field of argumentation. Paper presented in the conference of the European Association for Research in Learning and Instruction (EARLI). Cyprus, Limassol, August, 25-29.

Zohar, A. (2015). Invited discussant in the symposium: Epistemic Emotions: Examining antecedents and consequences when processing controversial information. Presented in the conference of the European Association for Research in Learning and Instruction (EARLI). Cyprus, Limassol, August, 25-29.

Zohar, A. (2015). A Review of Research on Metacognition in Science Education: Implications

for teaching higher order thinking (HOT) and scientific inquiry. Presented in the invited symposium: The contribution of extended literature reviews within science education research: Exemplars from the journal Studies in Science Education. The conference of European Science Education Research Association (ESERA), Finland, Helsinki, August 31-September, 4

Zohar, A. (2015). Exploring the value of metacognition for instruction of epistemic and scientific practices. Presented in the symposium: Current Challenges about Epistemic Practices and Scientific Practices in Science Education. The conference of European Science Education Research Association (ESERA), Finland, Helsinki, August 31-September 4.

Zohar, A. (2015). Discussant in the session: Improving the quality of discourse and reasoning in the science classroom. The conference of European Science Education Research Association (ESERA), Finland, Helsinki, August 31-September 4.

Zohar, A. (2015). Pedagogical aspects of holistic planning. Presented in the conference: Is Holistic Planning Possible in Education? Jerusalem: The Van Leer Institute, November, 10.

Zohar, A. (2016). A view on metacognitive research from a system-wide perspective. The conference of the Israeli Learning Sciences, Rechovot: The Weitzman Institute, February 1st.

Zohar, A. (2016). Exploring the value of metacognition for instruction of epistemic and scientific practices. Presented in the **invited symposium**: Current Challenges about Epistemic Practices and Scientific Practices in Science Education. National Association for Research in Science Teaching (NARST), Maryland, Baltimore, April 14-17.

Zohar, A. & Lustov, E. (2016). Challenges in scaling up metacognition across many classrooms. Paper presented in the EARLI SIG 16: Metacognition, Radboud University, Nijmegen, August 23-26.

Zohar, A. and Alboher Agmon, V. (2017). Raising test scores vs. teaching higher order thinking (HOT): senior science teachers' views on how several concurrent policies affect classroom practices . Paper presented in the annual conference of NARST, San Antonio, TX, April, 22-25.

Zohar, A. (2018). Discussant in symposium 1: Student learning and epistemic progress in dialogic teaching. The EARLI SIG 20-26: Argumentation and Inquiry as Venues for Civic Education. Jerusalem: 9-12 October.

Tsemach, E. and Zohar, A. (2018). Characteristics of argumentative thinking among of Haredi students. Poster presented in the EARLI SIG 20-26: Argumentation and Inquiry as Venues for Civic Education. Jerusalem: 9-12 October.

Zohar, A. (2018). Trying to do too much? A critical examination of large-scale implementation of inquiry learning. Paper presented in the EARLI SIG 20-26: Argumentation and Inquiry as Venues for Civic Education. Jerusalem: 9-12 October.

Zohar, A., Michalsky, T. and Weinberger, J. (2019). Deepening current innovative learning and instruction with metacognition. Presented in the EARLI conference in Aachen, August, 12-16.

Weinberger, J., Michalsky, T., and Zohar, A. (2019). Increasing pre-service teachers' meaningful learning: adding metacognition, self -regulated learning and epistemic thinking. Presented in the 7th International Conference on Teacher Education, The Mofet Institute , Tel Aviv, June 24-26.

Zohar, A. (2019). Discussant in the symposium Assessing teachers' knowledge, beliefs, and self-efficacy about promoting SRL. Presented in the EARLI conference in Aachen, August, 12-16.