Name: Ilana Lavy   **Date: 28/10/2020**

CURRICULUM VITAE

1.   Personal Details

Permanent Home Address: Kibutz Ein-Harod Meuhad, 18965

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2. Higher Education

A. Undergraduate and Graduate Studies

Period of Study	Name of Institution and Department	Degree	Year of Approval of Degree
1975-1979	Technion, Haifa Mathematics & Physics	B.Sc.	1979
1991	Haifa University, computer science	Teaching certificate in computer science	1991
1993-1996	Technion, Haifa, Mathematics education	M.Sc.	1996
1996-1999	Technion, Haifa, Mathematics education	Ph.D.	1999

B. Post-Doctoral Studies

Period of Study	Name of Institution, Department and Host	Degree	Year of Completion
2000-2001	Mathematics Education, Haifa University, Prof. Anna Sfard	Post-doc	2001

3. Academic Ranks and Tenure in Institutes of Higher Education

Dates	Name of Institution and Department	Rank/Position
1993-1999	Department of Technology and Science Education, Technion - Israel Institute of Technology, Haifa.	Research Assistant
2002- 2005	Computer Science and Information Systems area. The Max Stern Yezreel Valley College.	Lecturer
2005- 2006	Computer Science and Information Systems area. The Max Stern Yezreel Valley College.	Senior Lecturer
2006- 2011	The department of Management Information Systems (until July 2008 it was the Computer Science and Information Systems area. The Max Stern Valley College.	Tenured Senior Lecturer

2011 – present	The Department of Management Information Systems. The Max Stern Yezreel Valley College.	Associate Professor

4. Offices in Academic Administration

2000-2005	Member of Scholarships committee in the Max Stern Yezreel Valley College.
2006-2011	Member of the Committee for Advancing Computing and Communication Technologies in the Max Stern Yezreel Valley College.
2006-2012	Academic chair of the ICT literacy project in the Max Stern Yezreel Valley College.
2009-2010	Member of the Advancement of Teaching Committee in the Max Stern Yezreel Valley College.
2008-2015	Member of the Advancement of Teaching Committee in Management Information Systems Department of Max Stern Yezreel Valley College.
2011-2012	Counselor of Students' matters In the Management Information systems department, in the Max Stern Yezreel Valley College.
2011-2016	Head of the Committee for Advancing Computing and Communication Technologies in the Max Stern Yezreel Valley College.
2012-2015	Member of the Central Committee of the Max Stern Yezreel Valley College.
2011-present	Member of the Academic Council in the Max Stern Yezreel Valley College.
2012- 2015	Department Head of Management Information Systems in the Max Stern Yezreel Valley College, Israel.
2017-present	First-year students' counselor In the Information systems department, in the Max Stern Yezreel Valley College.
2018-present	Commissioner for the Prevention of Sexual Harassment at Yezreel Valley College.

5. Scholarly Positions and Activities outside the Institution

2008-present	Reviewer of Research Reports for the CERME conference
2011-2012	Reviewer of the Journal of Mathematical Behavior
2009-2010	Reviewer of the Canadian Journal of Science, Mathematics and Technology Education
2008-2012	Reviewer of Research Reports for the IAIM AIS SIG ED conferences
2007-present	Reviewer of Research Reports for the Psychological conferences on Mathematics Education (PME)
2011	Associate Editor of the International Journal of Learning
2012-present	Reviewer of the Journal of Educational studies in Mathematics
2012-present	Reviewer of the Journal of Mathematics Teacher Education
2015-present	Member of the editorial board of the Global Journal of Theoretical and Applied Statistics אסמכתא: http://www.wscirp.com/GJ_E.aspx
2016-present	Reviewer of the International Journal on Higher Education

6. <u>Research Grants</u>

a. <u>Internal Grants Awarded</u>

Co-Researchers	Topic	Funded by/ Amount	Year
Dr. Rami Rashkovits	Interactive Computerized model for enhancing the understanding of recursion	Yezreel Valley College, 14,800 NIS	2016-17

<u>Participation in Scholarly Conferences</u>

7. International conferences

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
2001	The 25th International Conference on the Psychology of Mathematics Education	Utrecht, Netherlands	Learning number theory concepts via interaction in computerized environment.	Author
2002	The 26th International Conference on the Psychology of Mathematics Education	Norwich, England	"What if not?" Problem Posing in Spatial Geometry - A Case Study.	Author
2002	The 2nd International Conference on the Teaching of Mathematics at the undergraduate level.	Crete, Greece.	How to Find the Internal Angle of a Regular Polygon - Strategies of Pre-Service Teachers.	Author
2003	The 13th Annual Symposium of The International Council on Systems Engineering	Washington DC, USA	Developing Capacity for Engineering Systems Thinking in a Project-Based Learning Environment.	Author
2003	the 8th Annual conference on Innovation and Technology in Computer Science Education	Thessaloniki, Greece	Students' understanding of object orientation.	Author
2003	The 10th European conference for	Padova, Italy	First steps of accommodating into a new learning environment – the	Author

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	research on learning and instruction		case of mathematical project-based-learning.	
2003	The 10th European conference for research on learning and instruction.	Padova, Italy	Staff Development in a Higher Education Course Based on Project-Based Learning Approach.	Author
2003	The 10th European conference for research on learning and instruction.	Padova, Italy	Educational Aspects of Problem Posing in Spatial Geometry: The Experience of Two Groups of the Teacher Education Students.	Author
2003	Mechanical Engineering Conference,	Technion, Haifa, Israel	Developing the capacity for engineering systems.	Author
2003	the 27th International Conference on the Psychology of Mathematics Education	Honolulu, Hawaii.	Pre-service teachers' transition from "knowing that" to "knowing why" via computerized project-based-learning.	Author
2004	The 10th International Congress in Mathematics Education	Copenhagen, Denmark	An integrated approach for assessing pre-service teachers' professional growth – the case of portfolio and classroom discussion.	Author
2004	The 28th International Conference on the Psychology of Mathematics Education	Bergen, Norway	Kinds of arguments emerging while exploring in a computerized environment.	Author
2005	The 29th International Conference on the	Melbourne, Australia	The beneficial and pitfall role of the spoken language in the	Author

	Psychology of Mathematics Education		informal definition of statistical concepts.	
2005	The 29th International Conference on the Psychology of Mathematics Education	Melbourne, Australia	Assimilating innovative learning/teaching approaches into teacher education - why is it so difficult?	Author
2005	The 29th International Conference on the Psychology of Mathematics Education	Melbourne, Australia	Assessing professional growth of pre-service teachers using comparison between theoretical and practical image of the 'good teacher'.	Author
2006	The 3nd International Conference on the Teaching of Mathematics at the undergraduate level	Istanbul, Turkey.	Computerized Project-Based-Learning Approach As Means For Supporting Professional Development Of Mathematics Pre-Service Teachers.	Author
2006	The 30th International Conference on the Psychology of Mathematics Education	Prague, Czech Republic	Dynamic visualization and the case of 'stars in cages'.	Author
2007	The fifth Congress of the European Society for Research in Mathematics Education	Larnaka, Cyprus.	Change in perception of prospective teachers regarding the image of the teacher as a result of engagement in a computerized environment.	Author

2007	The 31th International Conference on the Psychology of Mathematics Education	Seoul, South Korea	Problem Posing as a Means for Developing Mathematical Knowledge of Prospective Teachers.	Author
2008	the 5th International Conference Creativity in Mathematics and the Education of Gifted Students	Haifa, Israel	Problem posing and creativity in mathematics – the case of the "what if not?"	Author
2008	The fifth International of Mathematics and Society conference	Albufeira ,Portugal	Teachers as partners for designing professional development programs.	Author
2008	The fifth International of Mathematics and Society conference	Albufeira ,Portugal	Social and didactical aspects of engagement in innovative learning and teaching methods - the case of Ruth.	Author
2008	The ICIS (International Conference on Informatics Education), part of SIG-ED IAIM (Special Interest Group on IT Education)	Paris, France	Integrated formative assessment as a vehicle toward meaningful learning in the systems analysis and design workshop.	Author
2009	the sixth Congress of the European Society for Research in	Lyon, France	Emotional knowledge of mathematics teachers – Retrospective perspectives of two case studies	Author

	Mathematics Education			
2009	The 4th ILAIS annual conference on Information Systems	Beer Sheva, Ben Gurion University of the Negev, Israel	Engaging Students in Team Based Learning and Assessment - The Case of Systems Analysis and Design Workshop	Author
2009	The 33th International Conference on the Psychology of Mathematics Education	Thessaloniki, Greece	Prospective teachers' engagement in peer review as a means for professional development.	Author
2009	ICIS (International Conference on Information Systems), part of SIG-ED (Special Interest Group on IT) Education	Phoenix, Arizona, USA	"A collaborative team-based role play for enhancing students' perception of maintainability"	Author **Best paper award**
2010	The 6th International conference on "Creativity in Mathematics Education and the Education of Gifted Students"	Riga, Latvia	Evaluating the creativity of students' products in geometry.	Author
2010	The 5th International Conference on Computer Science & Education (ICCSE).	Hefei, Anhui, China.	Coping with abstraction in object orientation with a special focus on application errors.	Author

2010	The 5th Mediterranean Conference of Information Systems	Tel-Aviv-Yaffo, Israel	Changing Students Perception Regarding Software Documentation.	Author
2010	"Learning-Teaching-Research 2010"	The Open University, Raanana, Israel	"Hybrid Team-Based Role Play as a Vehicle for Improving Software Documentation".	Author
2011	The Learner - Learning conference	Mauritius	Problem posing and the development of mathematical insights.	Author
2011	The Learner - Learning conference	Mauritius	The effects of choosing exam levels on students' perceptions of and attitudes towards mathematics.	Author
2011	The Learner - Learning conference	Mauritius	Changes in Students' perceptions regarding the characteristics of a good programmer and their correspondence to industry expectations.	Author
2012	The 36th Conference of the International Group for the Psychology of Mathematics Education	Taipei, Taiwan	Engaging prospective teachers in the assessment of geometrical proofs.	Author
2012	The 36th Conference of the International Group for the Psychology of Mathematics Education	Taipei, Taiwan	Teachers' perceptions of mathematical creativity and its nurture.	Author
2012	The 36th Conference of the International Group	Taipei, Taiwan	The autonomy to choose: perceptions and attitudes of ninth	Author

	for the Psychology of Mathematics Education		grade students towards mathematics.	
2012	The 7th Mediterranean Conference on Information Systems, MCIS	Guimaraes, Portugal	Students' misconceptions of java exceptions.	Author
2013	The International Conference on Higher Education	Paris, France	A Formative Assessment Tool for Effective Feedback	Author
2013	The International Conference on Information Engineering.	London, England	A Formative Assessment Criteria Tool for the Assessment of Students' Programming Tasks	Author
2013	The 7th conference of ILAIS	Rupin College, ISRAEL	Do industry requirements and academic qualifications meet in the case of soft skills?	Author
2013	Twentieth International Conference on Learning	Rhodes, Greece	Are We Well Preparing Our Students for Vocational Life?: The Case of Soft Skills for Information Technology Graduates	Author
2013	2nd Journal Conference on e-Education, e-Business, e-Management and e-Learning,	Barcelona, Spain	Soft Skills – An Important Key for Employability in the "Shift to a Service Driven Economy" Era	Author
2014	Fourteenth International Conference on Diversity in Organizations,	Vienna, Austria	Culture-sensitive Teaching and Learning in a Diverse and Divided Society: The Case of a College on a Journey towards	Author

	Communities, and Nations.		Internationalization of Higher Education	
2014	The Second European Conference on Technology in the Classroom	Brighton, England	Formative Assessment Tool for the Assessment of Students' Geometrical Tasks	Author
2014	The International Congress on Education, Innovation and Learning Technologies	Barcelona, Spain	Leveraging IS students via engagement in industry practice	Author
2014	The 21th international conference on learning,	New-York, U.S.A	Self-reading of mathematical texts in distance education learning environment.	Author
2014	The Joint Meeting of PME 38 and PME-NA	Vancouver, Canada	Students' self-assessment of creativity: benefits and limitations.	Author
2015	The ICE 2015: 17th International Conference on Education	Berlin, Germany	Learning Mathematics Online: Characterizing the Contribution of Online Learning Environment's Components to the Development of Mathematical Knowledge and Learning Skills.	Author
2015	The ICE 2015: 17th International Conference on Education	Berlin, Germany	Learning Model Applied to Cope with Professional Knowledge Gaps in Final Project of Information System Students.	Author
2015	The 7th International Conference on Education and New	Barcelona, Spain	Choices and preferences of students – the case of final project in information systems	Author

	Learning Technologies			
2015	International Conference for Academic Disciplines	Brussels, Belgium	Information System student's engagement in final project: complexity, innovativeness and programming environments	Author
2015	The twenty-second International Conference on Learning,	Madrid, Spain	Mentoring as means for nurturing teacher's didactical skills - a case study.	Author
2016	ICME-13	Hamburg, Germany	Mathematics and sciences teachers collaboratively design interdisciplinary lessons: benefits, limitations, concerns	author
2016	ICHEP2016	Tokyo, Japan	Nurturing students' creativity through engagement in problem posing and self-assessment	author
2016	ICHEP2016	Tokyo, Japan	The two sides of coin of peer review and its effects on prospective mathematics teachers' insights regarding mathematical proofs	author
2016	, International Conference on Information Society (i-Society)	Dublin, Ireland	Management and Evaluation of Tasks Using an Online System	Author
2017	International Conference for Academic Disciplines	Vienna, Austria	A Further Step in Information Systems Graduates Preparation Towards Vocational Careers	Author
2017	International Conference for	Vienna, Austria	Viewing Mathematical Proofs by Pre-Service Math Teachers Via Reciprocal Assessment Process	Author

	Academic Disciplines			
2017	International Conference for Academic Disciplines	Vienna, Austria	Benefits and Limitations of Collaboration Between Mathematics And Sciences Teachers in Design Interdisciplinary Lesson Plans	Author
2017	The 41th Conference of the International Group for the Psychology of Mathematics Education (PME)	Singapore	Mathematics and sciences teachers collaboratively design interdisciplinary lesson plans: a possible reality or a wishful thinking?	Author
2017	8th International Conference on Applied Informatics and Computing Theory (AICT '17)	Corfu, Greece	Interactive Debug and Exploration of Recursive Functions	Author
2018	International Conference for Academic Disciplines	Florence, Italy	When Does Modular Programming Become the Favorite Choice by Novice Programmers?	Author
2018	International Conference for Academic Disciplines	Florence, Italy	Classification of Errors in Error Handling of Novice Programmers	Author
2018	EDULEARN18	Palma De Mallorca, Spain	Promoting self-regulated learning of mathematical texts through questions-asking activities	Author

2018	EDULEARN18	Palma De Mallorca, Spain	Decreasing the gap between information-systems graduates qualifications and industry expectations by implementing practicum-based approach	Author
2018	EDULEARN18	Palma De Mallorca, Spain	Engagement in Vedic mathematics as means for strengthening self-efficacy of low achievers	Author
2018	CME2018	Warsaw, Poland	Closing the gap between school Mathematics and contemporary Mathematics: Introducing students to Mathematics-News-Snapshots	Author
2019	12 th Iadis international conference on Information Systems	Utrecht, Netherlands	Spaghetti vs. modular code – the choice of novice programmers	Author
2019	12 th Iadis international conference on Information Systems	Utrecht, Netherlands	Data Model Design - The Case of Threesome	Author
2019	EDULEARN19	Palma De Mallorca, Spain	Enjoyable Learning of Programming via Music	Author
2019	EDULEARN19	Palma De Mallorca, Spain	Proper Programming Style - right from the Beginning	Author
2019	International conference on Teacher Education	Mofet Institute, Tel Aviv, Israel	The adaptation Process of New Teaching Methods by Prospective Teachers: The Case of Flipped-Class Learning	Author

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
2019	15th International Conference of The Mathematics Education for the Future Project	Maynooth University, Kildare, Ireland	Shedding New Light on Common Algorithms: What Can We Learn from the Vedic Mathematics?	Author
2019	ICICM– The 9th conference of Information Communication and Management	Prague, Czech Republic	Evolution of Modularity in Computer Programs	Author
2020	End2020 International Conference on Education and new Developments	Zagreb, Croatia	Prospective teachers' coping with mathematical algorithms in a flipped class setting	Author
2020	End2020 International Conference on Education and new Developments	Zagreb, Croatia	Does self-assessment of creativity and its development support the development of creativity?	Author
2020	End2020 International Conference on Education and new Developments	Zagreb, Croatia	Catching two birds with one stone – the case of music and programming fundamentals	Author

National conferences

Date	Name of Conference	Place of Conference	Subject of Lecture/Discussion	Role
2001	The 8th annual Conference for Promoting the	Israel	Internal angle in regular polygon from the turtle point of view	Author

	Mathematical Education in Israel			
2001	the 8th annual conference for promoting the mathematical education in Israel	Israel	Solid Geometry – What is the problem?	Author
2001	Values, Ethics and Technology in the digital Era	Israel	Problem solving via linear modeling with Excel,	Author
2002	The 9th annual conference for promoting the mathematical education in Israel	Israel	The impact of interactive computerized setting on the development of number theory concepts – the case of n-star	Author
2002	Ayala conference	Bar-Ilan University, Israel	Project based learning in first year course in engineering faculty	Author
2002	Ayala conference	Bar-Ilan University	Cooperative learning in research based setting	Author
2003	The 10th annual conference for promoting the mathematical education in Israel	Israel	Computerized Project – based Mathematics learning.	Author
2003	The 10th annual conference for promoting the mathematical education in Israel	Israel	Educational aspects of posing problems via the "what-if-not?" strategy	Author
2004	The 11th annual conference for promoting the mathematical education in Israel	Israel	Assimilating innovative learning methods in mathematics – why is it so difficult?	Author
2011	Chies conference	Open Universit	Prospective teachers' perceptions of their mathematical knowledge	Author

		y, Raanana	during their engagement in inquiry activities	
2015	The third Conference on Software Engineering Education	Kinneret Academic College, ISRAEL	Information System student's engagement in final project: complexity, innovativeness and programming environments	Author
2015	The third Conference on Software Engineering Education	Kinneret Academic College, ISRAEL	Hard facts on soft skills	Author
2015	JCRME3 – Jerusalem Conference on Research in Mathematics Education	Lev institute, Jerusalem	Participating in decision making- the case of ninth grade students	Author
2016	JCRME4 – Jerusalem Conference on Research in Mathematics Education	Lev institute, Jerusalem	Exposing pre-service teachers to two sides of coin as regards to peer assessment and its effect on the development of insights about the evaluation of mathematical proofs	Author
2017	JCRME4 – Jerusalem Conference on Research in Mathematics Education	Lev institute, Jerusalem	Problem posing as means for developing the understanding of texts on the history of mathematics	Author
2017	JCRME4 – Jerusalem Conference on Research in Mathematics Education	Lev institute, Jerusalem	Mathematics teachers' perceptions about cooperation with science teachers in writing integrative learning units	Author
2018	JCRME6 – Jerusalem Conference on Research in Mathematics Education	Lev institute, Jerusalem	Experiencing Vedic mathematics methods as means to strengthen self-perception of low achievers	Author
2019	JCRME7 – Jerusalem Conference on Research in Mathematics Education	Lev institute, Jerusalem	Experiencing learning of mathematical algorithms by preservice teachers via flipped class learning	Author

2020	JCRME8 – Jerusalem Conference on Research in Mathematics Education	Lev institute, Jerusalem	Self-assessment of mathematical creativity and its evolution-the case of two students	Author
2020	The 8th Conference on Software Engineering Education	Kinneret Academic College, ISRAEL	Designing multi-threaded software – the case of novice programmers	Author

b. **Organization of Conferences or Sessions**

Date	Name of Conference	Place of Conference	Subject of Conference/ Role at Conference/ Comments	Role
2008	ILAIS	The Max Stern Yezreel Valley college	Conference of Information Technology Systems	Member of the organization committee

8. Scholarships, Awards and Prizes

1975-1979	Learning Scholarship for BSc. Studies, Technion Institute, Haifa
1993-1996	Learning Scholarship for MSc. Studies, Technion Institute, Haifa
1996-1999	Learning Scholarship for PhD. Studies, Technion Institute, Haifa

9. Teaching

a. **Courses Taught in Recent Years**

Year	Name of Course	Type of Course Lecture/Seminar/ Workshop/High Learn Course/ Introduction Course (Mandatory)	Degree	Number of Students (per year)
1998-2010	"MicroWorlds"- learning via interactive computerized environments	Workshop (In the Technion)	undergraduate	**25-30**
2000-2002	Problem solving via excel	Lab lecture (in YVC)	undergraduate	**60~**
2000-2016	Data bases	Lecture (In YVC and Zefat)	undergraduate	**55~**
2000-2001	Teaching methods for average school Mathematics	Lecture (in Oranim)	undergraduate	**25~**
2000-2014	Data Structures and Algorithms with Java	Lecture (in YVC)	undergraduate	**50~**
2000-2001	Geometry	Lecture (in Oranim)	undergraduate	**25~**
2001-2009	Advanced programming methods	Lecture (in YVC)	undergraduate	**45~**
2001-2005	Fundamental mathematics	Lecture (in Oranim)	undergraduate	**25~**
2000-2010	E-learning	Seminar (in YVC)	undergraduate	**30~**
2003-2008	Computers Networks communication	Lecture (in YVC)	undergraduate	**45~**
-2003 present	Supervision of final project	YVC	undergraduate	**5~**
2003	Fundamental arithmetic	Lecture (in Oranim)	undergraduate	**25~**

-2005 present	Statistics	Lecture (in YVC, Zefat[1])	undergraduate	**80~**
-2005 2018	Probability	Lecture (in YVC, Zefat[1])	undergraduate	**80~**
2010-2011	Mathematics in everyday life	Lecture (in Oranim)	undergraduate	**25~**
2011	Solid Geometry	Lecture (in Oranim)	undergraduate	**25~**
2010-2012	Advanced Uses of Excell	Lecture (in Oranim)	undergraduate	**25~**
-2012 2016	Introduction to MIS	Lecture (in YVC)	undergraduate	**60~**
2010-2012	Logic Fundamentals	Lecture (in Oranim)	undergraduate	**25~**
2015	History of mathematics	Lecture (in YVC)	undergraduate	**50~**
2015-present	Introduction to computer science	Lecture (in YVC)	undergraduate	**80~**
-2015 2017	Support in programming	Lecture (in YVC)	undergraduate	**33**

b. **Supervision of Graduate Students**

Name of Student	Title of Thesis	Degree	Date of Completion / in Progress	Students' Achievements
Zarfin, O.	The effects of testing in various levels on the attitudes of 10th grade students	MEd.	2010	completed
Saabana, A.	The effects of peer teaching in calculus on students' achievements	M.Ed.	2010	completed

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I resigned from Zefat at 2017 [1]

Frenkel, R.	The characteristics of meaningful mentoring of mathematics teacher	M.Ed.	2013	completed

12. <u>Professional Experience</u>

2005 - 2009   Member of the committee board of "Pladot" factory in Kibbutz Ein Harod Meuhad

2009 -2010   Head of the Information Technology Club of the Management Information Systems Department in the Max Stern Yezreel Valley College.

2014-2019   Member of the committee board of "Dikam" factory in Kibbutz Ein Harod Meuhad

<u>PUBLICATIONS</u>

A. <u>Ph.D. Dissertation</u>

Understanding basic concepts in Elementary Number Theory: Explorations in an interactive computerized environment (1999) (in Hebrew), Technion, Haifa. Prof. Leron

B. <u>Scientific Books</u>

Learning books

1. Lavy, I. (1991). "Geometry". Mathematics and Science Teaching Education Department, Technion, Haifa (In Hebrew)
2. Lavy, I. Levi, D. (1999). "Microworlds", learning in Interactive computerized settings, Mathematics and Science Teaching Education Department, Technion, Haifa (In Hebrew)
3. Lavy, I. (2004). Linear modeling. In Shriki, A. (Ed.). "The Use of Excel for mathematics teaching", "kesher-ham", Technion Institute, 92-94 (In Hebrew)

C. <u>Articles in Refereed Journals</u>

D. Papers published before receiving senior lecturer

1. **Lavy, I**. & Shir, K. (2003). Solution strategies for finding the internal angle of a regular polygon. The *Australian Mathematics Teacher,* **59,** (1) 7-13

2. **Lavy, I.**, & Bershadsky, I. (2003). Problem Posing via "What if not?" strategy in Solid Geometry - A Case Study. *The Journal of Mathematical Behavior*, **22,** (4) 369-387 (**SJR=0.852, Q1=Education**)

3. Frank, M., **Lavy, I**. Elata, D. (2003). Implementing the Project-Based Learning Approach in an Academic Engineering Course. *International Journal of Technology and Design Education,* **13,** (3) 273-288 (**SJR=0.6, Q2**)

4. **Lavy, I**., & Leron, U. (2004). The Emergence of Mathematical Collaboration: The Role of an Interactive Computerized Environment. *International Journal of Computers for Mathematics Learning* **9,** (1), 1-23 (**IF=0.935, Q1=computer science applications**)

5. Or-bach, R., and **Lavy, I**. (2004). Cognitive activities of abstraction in object orientation – An empirical study. *SIGCSE Bulletin inroads*, **36,** (2), 82-86

6. Shriki, A. and **Lavy, I**. (2004). Exploring Mathematical patterns using Geometry Software. *The Australian Mathematics Teacher*, **60** (3),36-40

7. Ben-Yehuda, M., **Lavy, I**., Lynchevski, L., and Sfard. A. (2005). Doing wrong with words: What Bars Students' Access to Arithmetical Discourses. *The Journal of Research in Mathematics Education (JRME).* **36** (3), 176 - 247 (**IF= 2.598, Q1**)

Papers published before receiving associate professor

8. **Lavy, I**. (2006). A Case Study of Different Types of Arguments Emerging from Explorations in an Interactive Computerized Environment. *The Journal of Mathematical Behavior*, 25: 153-169 (**SJR=0.637**, **Q1=Education**)

9. **Lavy, I.** (2007). A case study of dynamic visualization and problem solving. *The International Journal of Mathematics Education in Science and Technology*, 38 (8), 1075-1092 (**SJR=0.213, Q3=Education**)

10. Shriki A. Ziskin, K. & **Lavy, I.** (2007). Ceva's theorem and its extensions. Aleh, 38, 32-37 (In Hebrew)

11. **Lavy, I.** & Shriki, A. (2008). Investigating changes in pre-service teachers' views of a 'good teacher' while engaging in a computerized project-based-learning. *The Journal of Mathematics Teacher Education*, **11**, (4), 259-284 (**SJR=1.023, Q1=Education**)

12. **Lavy, I.,** Rashkovits, R. and Kouris, R. (2009). Coping with abstraction in object orientation with special focus on interface class. The *Journal of Computer Science Education*. **19**,(3), 155-177 (**SJR= 0.53, Q1**)

13. **Lavy, I.** and Shriki, A. (2009) Small change – Big difference. *The Montana Mathematics Enthusiast*, **6**, (3) , 395-410 ISSN:1551-3440

http://www.math.umt.edu/TMME/vol6no3/Lavy_Shriki_article6_pp395_410.pdf

14. Shriki, A. Ziskin, C, and **Lavy, I.** (2009). Generalization of Ceva's theorem to polygons with an odd number of sides. *The journal of Mathematical Spectrum*, **42**, (1), 37-42 (**IF=1.807, Q1**)

15. **Lavy, I**. & Eizenberg-Mashiach, M. (2009). The Interplay between Spoken Language and Informal Definitions of Statistical Concepts. *Journal of Statistics Education* 17, (1), www.amstat.org/publications/jse/v17n1/lavy.html (**SJR=0.248, Q3=Education**)

16. **Lavy, I.** &Yadin, A. (2010). Raising awareness of the constituents of software design – the case of documentation. *The Journal of Software Engineering and Applications* **3** (5), 495-502, (**IF=1.5, Q1**)

17. **Lavy, I**. & Shriki, A. (2010). Engagement in Problem Posing Activity in A Dynamic Geometry Setting and the Developing of Mathematical Knowledge of Prospective Teachers, *The Journal of Mathematical Behavior*. **29** (1), 11-24 (**SJR=0.637**, **Q1=Education**)

18. **Lavy, I.** & Yadin, A. (2010). Team-based peer review as form of Formative Assessment - the case of Systems Analysis and Design Workshop, *The Journal of Information Systems Education*, 21 (1), 85-98 (**SJR=0.28, Q2**)

19. Yadin, A. & **Lavy, I.** (2011). Raising the perceived importance of software maintainability among students by using team-based role-play. The *Journal of Informatics Education Research* (JIER) (**IF=1.52, Q1**)

http://www.sig-ed.org/jier/2011/JIER2011_Yadin_and_Lavy.pdf

Papers published after receiving associate professor

20. **Lavy, I**., & Or-Bach R. (2011). ICT literacy education: College students' retrospective perceptions. *The ACM Inroads*. 2 (2), 67-76. (**SJR=0.22, Q2**)

21. Rashkovits, R. & **Lavy, I.** (2011). Students' strategies for exception handling. *The Journal of Information Technology Education* (JITE) 10, 183-207. (**IF= 1.5, Q1**)

22. Zarfin, O. & **Lavy, I.** (2012). The effects of choosing exam levels on students' perceptions of and attitudes towards mathematics. The *International Journal of Learning*. **18**, issue 6, 127-142. (**SJR=0.188 Q4**)

23. Shriki, A. & **Lavy, I.** (2012). Problem Posing and the Development of Mathematical Insights. The *International Journal of Learning*, **18**, issue 5, 61-70. (**SJR= 0.188 Q4**)

24. **Lavy, I.** & Rashkovits, R. (2012). Changes in Students' perceptions regarding the characteristics of a good programmer and their correspondence to industry expectations. The *International Journal of Learning*, **18** issue 3, 113-130. (SJR=0.**188 , Q4**)

25. Shriki, A. & **Lavy, I.** (2012). Perceptions of Israeli mathematics teachers regarding their professional development needs. *Professional Development in Education*. **38** (3), 411-433. (**SJR=0.626, Q2**)

26. Rashkovits, R. & **Lavy, I.** (2012). Students' understanding of advanced properties of Java exceptions. *The Journal of Information Technology Education* (JITE) **11,** 327-352. http://www.jite.org/documents/Vol11/JITEv11IIPp327-352Rashkovits1157.pdf ((**SJR=0.12, Q4**)

27. **Lavy, I**. & Rashkovits, R. (2013). Students' Understanding of Selected Aspects of Interface Class in Java. *The International Journal of Modern Education and Computer Science* (IJMECS), 7, 1-15. (**IF=0.669**)

28. **Lavy, I**. & Yadin, A. (2013). Soft skills – An important key for employability in the "shift to a service driven economy" era. *International Journal of e-Education, e-Business, e-Management and e-Learning*, 3, (5), 416-421.

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K. <u>Submitted Publications</u>

1. 1. Rashkovits, R. & **Lavy, I**. Mapping common errors in Entity Relationship Diagram design of IS students, (submitted to the International Journal of Database Management Systems (IJDMS))

L. <u>In work</u>

2. **Lavy, I.** & Shriki, A. Using asking questions to enhance the understanding of mathematical texts of prospective mathematics teachers

3. **Lavy, I**. Gur, A. & Mashiach-Eizenberg, M. Mapping the use of digital media for health care services among Arabs in Israel.

M. Summary of my Activities and plans

My research focuses on two main areas, mathematics and computer science education. The first refers to mathematics education with special focuses on professional development of pre and in-service mathematics teachers and the acquisition of abstract concepts. The second focuses on issues referring to information systems, including perception of concepts related to analysis design and programming, and more general issues related to the domain of information systems education. The following is a list of my main contributions and plans for future research .

Professional development of pre and in-service mathematics teachers

As a Ph.D. graduate from the Science and Technology Education Department at the Technion in Haifa, my research focused, at the first years of my academic career as a researcher, on mathematics education issues. The common line across my research is issues relating to the perception of mathematical concepts by undergraduate students that were mainly pre-service mathematics teachers for middle and high schools. I explored issues regarding problem posing especially concerning plain and solid geometry in a dynamic geometry environment and published several papers on these issues with prof. Atara Shriki. It should be mentioned that we contributed equally to the carried-out researches. I was asked to contribute to a book on mathematics problem posing which was published recently. I am the author of one of the book's chapters titled: "Problem posing activities in a Dynamic Geometry Environment - When and how". I participated also in writing a book chapter for the National Council of Teachers of Mathematics (NCTM). This chapter summarizes conclusions received from research done during my Post Doc at Haifa University. The chapter refers to our problematic tendency to tag students according to their mathematical abilities and shows that when our decisions are received by misjudgments, we can cause injustice to students .

Together with Prof. Atara Shriki, we carried out a research aiming to examine the effects of engaging pre-service teachers in assessment tasks, acting as both assessees and assessors, with special focus on geometrical proofs. We also carried out a research in which perceptions of in service teachers as regards to their professional development needs were explored. I believe that the conclusions received from these researches contributed to the body knowledge referring to teacher education and their professional development.

As a supervisor of a M.Ed. final project, I took part in a research carried out by Mrs. Zarfin, which concerned with the effects of providing autonomy to ninth graders to take part in decision making as regards to their grouping to learning levels in mathematics. The idea underlying this research can provide teachers with similar ideas that might improve the students' attitudes towards mathematics and improve the class atmosphere.

As a supervisor of a M.Ed. final project, I took part in a research carried out by Mrs. Frenkel, which concerned with the contribution of one-to-one mentoring to mathematics teachers' professional development. This article was accepted to publication in the International Journal of Science, Mathematics and Technology Learning .

Perception of object-oriented analysis, design and implementation concepts – As a lecturer of various courses in the field of information systems, I noticed that there are some concepts that many students find difficult to understand and implement. Together with Dr. Rami Rashkovits, we examined (via questionnaires and interviews) difficulties in perception of abstract methods and classes, interface classes, and exceptions hierarchy. We also explored

how students use these elements when they are required to solve problems in which using the elements properly would provide the finest solution. We found out that many of the students failed to provide the best solution and favored other solutions that did not necessitate the use of these concepts. Moreover, we found out that abstract concepts are less understandable, and less in use in problem solving than simpler concepts. Students encounter much less difficulties when learning and using concrete methods and classes, and in order to facilitate the understanding and advance the use of abstract concepts, many more explanations and examples are recommended. We also explored difficulties in understanding concepts used in object-oriented analysis, design and programming, including state-machine and sequence diagrams and their reflections on classes' implementation. For example, we explored the concept of modularity in code design and implementation students' difficulties in understanding and applying ternary relationship. We also explored difficulties in the process of transformation of functional requirements into class diagrams, and class diagrams into relational database model (ERD) .

Information Systems Education – As a graduate of the department of Science and technology in the Technion, and as part of being a lecturer in the department of information systems, I constantly explore and imply new teaching methods to improve my teaching. For example, I have noticed that students do not gain insights from the feedback they get on their housework, and as a result fail to improve their knowledge. Together with Dr. Rami Rashkovits, we developed a formative assessment tool (Excel-Based) in which structured criteria are set for each assignment, and mandatory comment must be provided to each criterion in each assignment. The students are provided with both literal and visual representations of the assessment, and track may their achievements along the timeline, including information on their relative achievements (comparing to their classmates). We tested the assessment tool in programming and math courses and examined how students and teachers were affected by it. Another topic that I found interesting was the perceptions of students regarding the desired characteristics of 'good programmer' at the beginning and the end of their studies, and the correspondence of these perceptions with industry expectations. Various characteristics were provided by the students, among them personality traits, social skills, cognitive abilities professional knowledge and skills. Towards graduation they were capable to provide more accurate image of the "good programmer" when compared to industry expectations and research literature. Insights gained have helped me to advance students to develop skills and shape their traits to become more qualified to become a professional worker. In additional research we examined the decisions taken by students in the context of their final project regarding the nature of the project (business domain, algorithmic complexity, innovativeness), and the development environments (programming language, tools, class libraries, platforms) selected for the development of the system. In particular, we are interested in the underlying

motivations of the students when selecting environments they are acquainted with during their studies or other environments, which they have learned by themselves. We also explore learning strategies students developed to gain mastery over these new environments. I also examined the effects of practicum project, from the students' point of view, started few years ago in our department on the success of students in the professional field after graduation and the contribution of the practicum to their professional expertise. Together with Dr. Rashkovits we explored the effects of the practicum project from the employers' point of view. We also examined new teaching approach for teaching the concept of recursion. This research was funded by the College .

In a research that was carried out with Dr. Aharon Yadin, we explored the skills required by IT employers. For that matter, we examined 6000 ads (4000 in ISRAEL and 2000 in the USA) and found that most of IT firms require that the potential employee will possess soft skills such as the ability to work in team. The USA ads revealed similar results we can point on similarity in demands. The research results were applied in several courses and the students are engaged in teamwork in order to develop the required skills.

In another research I carried out with Dr. Aharon Yadin, we suggested an extension of the "Structure of the Observed Learning Outcomes" (SOLO) model. The SOLO taxonomy has five levels of understanding that can be encountered in learners' responses to academic tasks. However, we found that the existing model does not address assessment issues in cases of the assessment of large software projects. We suggested the extending of the existing model by two additional levels to address components appearing in large software projects.

I also carried out an action research during my supervision on the ICT Literacy Project in College. In this research, I explored the students' perceptions regarding their ICT literacy knowledge and needs and the conclusions obtained from the research data were applied at the following semesters.

During the last two years, I developed a learning unit concerning learning programming fundamental via music using the Scratch environment. I conducted two pilot groups with 7th and 6th graders in the form of research action in which the learning units I developed were modified according to the students' feedback and according the insights I gained during the process. The learning environment chosen for this purpose is the Scratch environment. In addition, I wrote a paper summing the insights gained from the first pilot. In these days I write my conclusions and insights gained from the second pilot conducted with the 6th graders.

In the area of mathematics education, I worked on a research, which concerns with the developing of the understanding of mathematical texts of preservice teachers during the

learning of an on-line mathematical course. In addition, I finished working on a book chapter addressing the development of mathematics education in the Kibbutz movement.

During the three years (2012-2015) I served as the department head of the Management Information Systems. During this period, we were certificated by the national academic council to provide a B.Sc. Degree to our graduates instead of the previous degree of B.A. In addition, until 2016, I served for several years as the academic supervisor of the information systems unit of our college. Our main activity was to supervise the computing services in college and address both the college staff and the students' computing needs. In the present study year, I serve as first-year students' counselor .

כ"ט שבט, תשע"ה
8 פברואר, 2015
18

לכבוד
ד"ר קרני שיר
עורכת כתב העת
מחקר ועיון בחינוך מתמטי
המכללה האקדמית שאנן

ד"ר קרני שלום,

לא תמיד עיסוקי יכולים להיות מונדרים "כשעת עונג", לא כן העניין בשניים מהמאמרים בגיליון השני של כתב עת חשוב זה.

הנאה צרופה הייתה לקרוא את המאמר של יעל אדרי וניצה מושביץ, העוסק בקשר אפשרי בין חינוך מתמטי וחינוך ערכי. השימוש המעשי של התלמידים בחיבור בין שני אלה – היו לי לשעת הנאה צרופה במהלך שגרת יום עבודה במשרד.

<u>חוויה זו ותעצומה עם הקריאה את מאמרם של אילנה לביא ואורלי צרפין בנושא של שיתוף פעולה בתהליך קבלת החלטות של תלמידים כתורם לפיתוח הערכה עצמית של תלמידים</u>

<u>אינני בא מתחום החינוך המתמטי אך די היה בקריאה בשני פרקים אלה כדי להביע את מלוא הערכתי לך כעורכת ולכותבי המאמרים שאת ממצאי מחקריהן קראתי בעניין רב.</u>

ראוי לחביא ממצאים אלה בפני קהילות מחנכים שונים ובהם · סטודנטים להוראה, רכזי מקצוע, מרכזי פסגה והכשרה לסוגיהם.

אני מאחל לכתב העת שגשוג ופריחה ואין לי ספק בתרומתו המעשית לחינוך המתמטי בישראל.

אני מביא מכתב זה לידיעת ממלאי תפקידים מרכזיים במשרד.

אנא הביאי הערכה זו גם לחברי מערכת כתב העת.

בכבוד ובהערכה,

פרופ' עמי וולנסקי
המדען הראשי

העתקים : גב' מיכל כהן, מנכ"לית המשרד
ד"ר ניר מיכאלי, יו"ר המזכירות הפדגוגית
ד"ר חנה פרל, מנהלת אגף (מקצועות מדעי הטבע), המזכירות הפדגוגית
גב' דורית נריה, מפמ"ר מתמטיקה יסודי
גב' נירית כץ, מפמ"ר מתמטיקה על יסודי
מר אייל רם, סמנכ"ל ומנהל מינהל עובדי הוראה
מר אריאל לוי, סמנכ"ל בכיר ומנהל מינהל פדגוגי

Representative number of quotes of my research (from the 'Publish or Perish' website) updated to 11.08.2019

		Cites	Per year	Rank	Authors	Title	Year	Publication	Publisher	Type
Google Scholar query						How to search with Google Scholar				

Google Scholar query — Authors: "Ilana lavy" — Years: 0 - 0
Publication/Journal: — ISSN:
All of the words: — Title words:
Any of the words:
None of the words:
The phrase:

Metrics		Cites	Per year	Rank	Authors	Title	Year	Publication	Publisher	Type
Publication years:	2003-2020	331	20.69*	1	M Frank, I Lavy, D E...	Implementing the project-based le...	2003	International Journal of Tec...	Springer	
Citation years:	16 (2003-2019)	111	7.93	2	M Ben-Yehuda, I La...	Doing wrong with words: What ba...	2005	Journal for research in ...	JSTOR	
Papers:	67	83	6.92	3	I Lavy, A Shriki	Problem posing as a means for de...	2007	Proceedings of the 31st C...	ERIC	PDF
Citations:	1044	83	5.19	4	I Lavy, I Bershadsky	Problem posing via "what if not?" ...	2003	The Journal of Mathematic...	Elsevier	
Cites/year:	65.25	74	4.93	5	R Or-Bach, I Lavy	Cognitive activities of abstraction i...	2004	ACM SIGCSE Bulletin	dl.acm.org	
Cites/paper:	15.58	50	5.56	6	I Lavy, A Shriki	Engaging in problem posing activi...	2010	The Journal of Mathematic...	Elsevier	
Cites/author:	470.30	31	2.38	7	I Lavy	A case study of different types of ...	2006	The Journal of Mathematic...	Elsevier	
Papers/author:	36.07	25	2.27	8	I Lavy, A Shriki	Investigating changes in prospecti...	2008	Journal of Mathematics Tea...	Springer	HTML
Authors/paper:	2.16	23	3.29	9	A Shriki, I Lavy	Perceptions of Israeli mathematics ...	2012	Professional development ...	Taylor & Francis	
h-index:	14	23	2.20	10	I Lavy, M Mashiach...	The interplay between spoken lan...	2009	Journal of Statistics Educati...	Taylor & Francis	
g-index:	31	22	1.47	11	I Lavy, U Leron	The emergence of mathematical c...	2004	International Journal of Co...	Springer	
hI,norm:	11	22	3.67	12	I Lavy, A Yadin	Soft skills-An important key for e...	2013	International Journal of e-E...	ijeeee.org	PDF
hI,annual:	0.69	16	1.78	13	I Lavy, A Yadin	Team-Based Peer Review as a For...	2010	Journal of Information Syst...	jise.org	PDF
*Count:	1	14	1.40	14	I Lavy, R Rashkovit...	Coping with abstraction in object ...	2009	Computer Science Education	Taylor & Francis	
Results		12	0.92	15	I Lavy	Dynamic visualization and the case...	2006	International Group for the...	academia.edu	PDF

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סטטיסטיקה:

21 מאמרים ב-Q1

4 מאמרים ב-Q2   8.5%

5 מאמרים ב- Q3   10%

8 מאמרים ב- Q4

ב-29 מתוך 47 מאמרים **אני ראשונה**   62%

ב-6 פרסומים (מאמרים ופרקים בספרים) אני **כותבת יחידה**