

## Curriculum Vitae

### 1. Personal Data

Name in Hebrew: ד"ר קיסר עינב  
 Name in English: Keisar Einav, Ph.D.  
 Tel: 0542284802

### 2. Education Certificates and Degrees

<u>Aduation</u>	<u>Institute</u>	<u>Department</u>	<u>Graduating Year</u>
B.Ed	Oranim Academic College	Mathematics Education	2009
M.Ed	University of Haifa	Mathematics Education	2012
PhD	University of Haifa	Mathematics Education	2020

### 3. **Title of Master's Thesis:** The development of modeling skills among young students

**Supervisor:** Dr. Irit Peled

**Title of Doctoral Thesis:** The development of data sources and student conception of problem solution along a sequence of modeling problems

**Supervisor:** Dr. Irit Peled

### 4. Grants and Awards

<u>Year</u>	<u>Name of Grant/Award</u>
2020	Maccabim Foundation
2019	Maccabim Foundation
2018	Received a grant for publishing an article in an international magazine, titled: Investigating new curricular goals: what develops when first graders solve modelling tasks? <i>Research in Mathematics Education</i> , 20(2), 127-145.
2013	Received an award for publishing Master's thesis.

### 5. Research Grants and awards

<u>Year</u>	<u>Funding Agency</u>	<u>Title of Research</u>	<u>Amount</u>
April 2017- April 2020	Ministry of Education, Zalman Aran scholarship.	The development of data sources and student conception of problem solution along a sequence of modeling problems.	300K Nis

## 6. Positions Held

<u>Year</u>	<u>Institute</u>	<u>Position</u>	<u>% Position</u>
2019-Present	Western Galilee College	Lecturer	8 hours per week
2017-Present	Oranim Academic College	Lecturer	6 hours per week
2009-2017	The Hebrew Reali School, Haifa	Educator and professional Mathematics teacher	100%
2013-2017	the Israeli National Center for Elementary Teachers of Mathematics, University of Haifa.	Development of Mathematical activities and teacher education in "Pisga Centers"	10 hours per week

## 7. Convention presentations

- **The sixth Jerusalem convention for mathematical education study (JCRME6), 2018.**  
Reporting research studies in the topic: Development of mathematics trainee teachers' knowledge while creating a MOOC.
- **The fifteen "MEITAL" convention, university of Haifa, 2017.**  
Presenting digital tools, softwares and applications in building a MOOC course about ratio and proportion.
- **"Creativity in education" convention, Oranim academic collage, 2017.**  
Presenting a teaching model for a seminar course, which includes cooperative work and peer assessment.
- **The fifth convention of learning sciences in Israel, Technion 2019.**  
The development of data sources and student conception of problem solution along a sequence of modeling problems.

## 8. Academic Profile

## **Research studies and their contribution**

### **Research study (Master's Thesis):**

#### **The development of modeling skills among young students**

Children in a first-grade class who were taking their first steps in formal mathematical knowledge were given a sequence of five modelling tasks during their regular mathematics lessons. These tasks were different in nature from the problems they encountered in their textbooks. They are more complex and challenging, requiring analysis of the problem situation and decisions about the mathematics that could be used. The nature and implementation of the tasks involved new curricular goals and new problem solving norms aimed at developing children's modelling competencies. The findings show that the children were able to accept the new norms that promoted situation analysis and realistic considerations. They increased their use of argumentation, utilised existing additive strategies and displayed some use of multiplicative structures which the children had not encountered formally yet.

### **Research study (Doctoral Thesis): The development of data sources and student conception of problem solution along a sequence of modeling problems**

In recent decades, recognition of the importance of modeling problems has grown immensely. Different studies have dealt with the change in the habits of students during problem solving. This research joins the study of changes that students go through when solving a sequence of modeling problems, focusing on the expansion of data sources and on the changes in student conception of the expected solution. The findings showed a gradual development of genuine interest in the essence of the problem, encourage investigation of the situation, initiate a search for information in a variety of sources, and lead to an independent development of a mathematical model that might also allow generalization and adaptation to additional new situations.

### **Research study: Development of mathematics trainee teachers' knowledge while creating a MOOC.**

This research describes how creating a MOOC (Massive Open Online Course) about ratio and proportion in a collaborative, technological environment during math teacher training, benefited the development of content, pedagogical and technological knowledge for teaching. For example Before MOOC creation, the trainee teachers held misconceptions about the meaning of ratio and proportion, but through a process of reflective thinking, collaboration and peer assessment, they developed a sequence of teaching units that gradually expose the user to different aspects of the subject. This process allowed the teachers to develop a broad perspective on the subject and let go of their own misconceptions. (Oranim Academic Collage in cooperation with Dr. Klemer).

## **Publications**

**Keisar Einav, Ph.D.**

1. Peled, I., & Keisar, E. (2015). Emergence of tables as first-graders cope with modelling tasks. *International Journal of Mathematical Education in Science and Technology*, 46(4), 570-583.
2. Keisar, E., & Peled, I. (2018). Investigating new curricular goals: what develops when first graders solve modelling tasks?. *Research in Mathematics Education*, 20(2), 127-145
3. Anat, K., Einav, K., & Shirley, R. (2019). Development of mathematics trainee teachers' knowledge while creating a MOOC. *International Journal of Mathematical Education in Science and Technology*, 1-15

