

Pirjo Aunio: Curriculum Vitae (9.1.2018)

Full name: Pirjo Annika Aunio

Date and place of birth: 24th February 1970, Helsinki, Finland

Current residence: Helsinki

Education and training

University of Helsinki, 1997 M. Ed. (incl. teacher qualification), 2002 Lic. Ed., 2006

PhD (special education)

Linguistic skills

Mother language: Finnish. Other languages: English, Swedish, French, Dutch, Chinese

Current position

Professor (Special Education), University of Helsinki, 2013- (head of unit 2015-2016); Title of Docent (Special Education), University of Helsinki, 2009-; Visiting professor (early childhood education), University of Johannesburg, 2015-

Previous professional appointments

- University of Helsinki, Special Education; University lecturer (total 3 years 11 months) 2010-2013.
- University of Jyväskylä, Niilo Mäki Institute: Project manager & researcher (leading researcher) (2 years 11 months) 2007-2010; Post Doctoral researcher (9 months) 2006-2007
- Singapore Finnish Supplementary School: Principal (incl. teaching) (9 months) 2006-2007.
- University of Helsinki, Special Education: PhD student (4 years) (2002-2005)

Short term and visiting positions abroad

- Nanyang Technological University, National Institute of Education, Singapore: Visiting professor (1 month) 2016
- University of Oslo, Norway: Visiting professor (3 years 5 months) 2014-2017
- Chinese Academy of Sciences, Institute of Psychology: visiting PhD-student (2 years) 1998-2000

Lectured courses

Mathematical learning difficulties courses (bachelor, master, in-service training; together 18) in University of Helsinki, University of Oslo and Niilo Mäki Institute.

Research Grants

Present:

Beijing Normal University seed money funding (Future Schools in 2030 in Beijing Advanced Innovation Center for Future Education) for a Finnish-Chinese research project “The developmental dynamics in mathematics, cognition, motivation and wellbeing in China and Helsinki” (2016-2017), budget 133 600 yuans.

Previous:

Finnish Ministry of Education and Culture, evidence-based pedagogical solutions in the field of mathematical learning difficulties, published as LukiMat web service (2006–2011, 6 years), total budget app. 2 milj. Euros.

Finnish Ministry of Education and Culture, evidence-based pedagogical solutions in the field of mathematical learning difficulties for non-native Finnish students (2008–2011, 3 years) total budget €365,000.

Finnish Ministry of Education and Culture, evidence-based pedagogical solutions for educators in the field of thinking skills and mathematics learning and interventions. Published as ThinkMath web service (2011–2015, extended 2016) total budget €640,000.

Other academic and professional activities

- Membership in scientific societies: 2 societies
- Scientific per reviewed papers in international journals: 46, Personal Google Scholar H-Index 16 and ISI WoS index 6 (9.1.2018).
- Referee for Scientific Journals: 17 journals
- Member of editorial board for 4 international journals (Educational Psychology: An International Journal of Experimental Educational Psychology, 2017- 2018; Learning and Individual Differences, 2017-2019; South African Journal of Childhood Education, 2015-; Journal of Early Childhood Research, 2012-)
- Referee of Doctoral Thesis: 2; Guided Thesis: Doctoral thesis: 3, present doctoral students 5; Supervised M.Ed. thesis 7
- Referee for International Research Grant proposals: 6
- Supervision: main supervisor for 5 PhD students (3 finished), secondary supervisor for 3 PhD students (1 finished)

Scientific profile

Professor Pirjo Aunio leads a research group focusing on mathematical skills learning and mathematical learning difficulties. The main group consists of researchers and PhD-students from University of Helsinki, Åbo Akademi, Niilo Mäki Institute, University of Oslo, and University of Johannesburg. The core research group is supported by international colleagues in Europe and Asia.

Aunio's research work has one broad main focus: the development and learning of mathematical skills, as well as the difficulties associated with them. This includes research into the development of assessment and intervention tools. The target groups are children and adolescents aged 5-16 years.

Aunio's team approaches learning difficulties from a wide angle because they are interested in all students who struggle with learning, particularly ones who are often identified as low-performing students (15-20% of the population). It is recognised that inside this students group there are students with a variety of learning profiles, including those who are identified as having dyscalculia, or mathematical disability (4-6 % of population). At the moment, Aunio's group is studying the developmental dynamics to develop a valid prognosis method for detecting learning difficulties and educational dropout. The broad scope of this research provides many interesting possibilities for understanding these phenomena and for developing well-qualified assessment and intervention methods for educational practice.

From 2006 onwards Aunio's team research and developmental work for evidence-based practice have been funded by Finnish National Ministry of Education and Culture. In Niilo Mäki Institute (2006-2010) the team provided a knowledge base concerning mathematics-skills development and learning difficulties, as well as assessment and intervention methods and materials (www.lukimat.fi). At the University of Helsinki they developed evidence-based (small-) group interventions for kindergarten and primary school children who have challenges in their general thinking and/or mathematics skills (ThinkMath, <https://thinkmathglobal.com/english/>) Knowledge (e.g., about the development of thinking skills, motivation, interest, and effective instructional support) and intervention materials are provided to educators and parents via a web service. Now the team is producing an English ThinkMath webservice for international collaboration.

The current research initiatives take place mainly in Finland, Norway and South Africa, where Aunio's team develops assessment batteries and investigate the effects of early numeracy interventions on children's learning. At the moment they also study the developmental dynamics of mathematical learning and motivational issues in Chinese education context.

Aunio's group work has had significant impact on Finnish education system, which is currently well equipped with evidence-based assessment tools to identify children with mathematical learning difficulties. In addition Finnish educators have now evidence based intervention programs to support the learning of children who struggle with learning. The scientific impact of Aunio's group can be seen in increased knowledge about the development of early mathematical skills and possibilities to support children with learning difficulties in mathematics in their own schools (interventions in natural setting).

Research interest shortly

- Development of mathematical skills
- Assessment of mathematical skills, mathematical learning difficulties and related factors
- Interventions for children at risk for learning difficulties in mathematics