

On a daily basis we are confronted with situations in which proportional reasoning is needed. Proportional reasoning also plays an important role throughout learners' mathematical development. Still, many adolescents and even adults seem to be particularly bad at it. Although proportional reasoning is so hard to apprehend, there are indications that some young children can already reason proportionally in certain situations. More research about the early development of proportional reasoning is needed.

In a broader research project that we conducted, we longitudinally mapped the development of a number of mathematical competencies at an early age (i.e., 5-9-year-olds): patterning, computational estimation, probabilistic reasoning, and proportionality.

After a general overview of the project, we will present the main studies in the area of proportionality. A first set of studies mapped the early development of proportional reasoning abilities in 5- to 9-year-olds. A second line of studies investigated the development of "relational preference" and its association with children's proportional reasoning abilities. Third, we identified possible predictors of children's proportional reasoning abilities and their development at this young age, including patterning abilities and domain-specific mathematical vocabulary. Fourth, we developed and tested instructional materials that aimed to stimulate proportional reasoning in the second grade of primary school.

Biographical note

Wim Van Dooren is Professor of Educational Sciences at the Faculty of Psychology and Educational Sciences at KU Leuven (Katholieke Universiteit Leuven, Belgium). His research interests lie in the area of mathematical learning and teaching in a broad age range (from Kindergartners over primary and secondary school students to mathematical experts), addressing various mathematical topics.

His focus is situated at the intersection of the content-specific domain, educational psychology, and cognitive psychology. Among other lines of research, he studies the role of intuitions in learning and reasoning on mathematical concepts and the precursors of mathematical competences in the early years.

He has co-authored more than 150 articles that are published in top-tier scientific journals and have received numerous citations. He is actively involved in scientific organizations such as the European Association for Research on Learning and Instruction (EARLI) and the International Group for the Psychology of Mathematics Education (PME), for which he currently serves as president elect.

ΙΝΣΤΙΤΟΥΤΟ ΑΝΘΡΩΠΙΣΤΙΚΩΝ ΚΑΙ ΚΟΙΝΩΝΙΚΩΝ ΣΠΟΥΔΩΝ ΠΑΝΕΠΙΣΤΗΜΙΑΚΟ ΕΡΕΥΝΗΤΙΚΟ ΚΕΝΤΡΟ ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ

ΚΥΚΛΟΣ ΕΡΕΥΝΗΤΙΚΩΝ ΣΕΜΙΝΑΡΙΩΝ 2021 - 2022

ΣΕΜΙΝΑΡΙΟ 6^ο

Seeing things in proportion: Unraveling and stimulating the early development of proportional reasoning

Wim Van Dooren

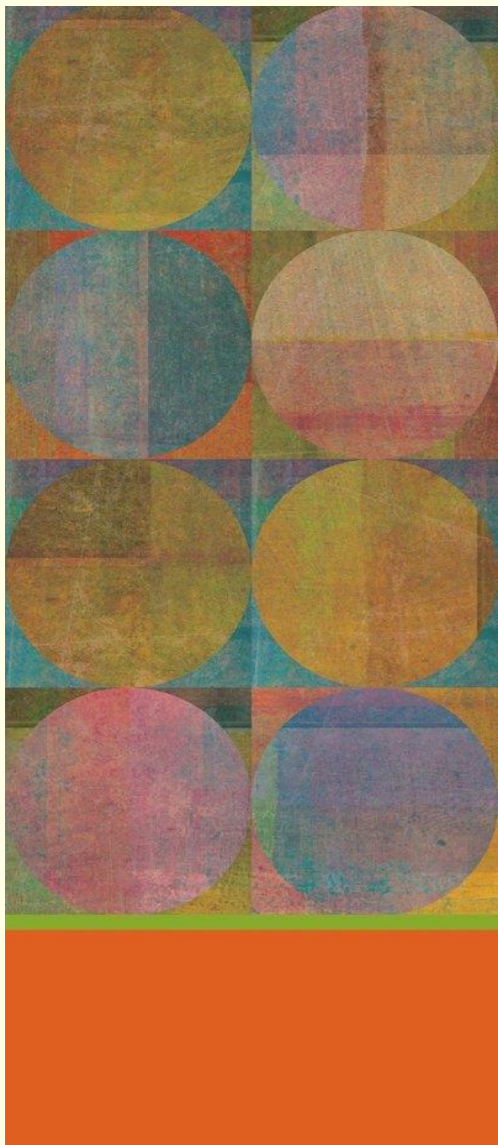
Professor of Educational Sciences
Faculty of Psychology and Educational Sciences
KU Leuven (Katholieke Universiteit Leuven, Belgium)

Δευτέρα 16 Μαΐου 2022, ώρα 18:00

Συμμετέχει η υποψήφια διδάκτωρ του Παιδαγωγικού Τμήματος Νηπιαγωγών κα **Γεωργία Πήττα** με σύντομη εισήγηση με θέμα "*Fostering early multiplicative reasoning: A topic-specific design research study at kindergarten*".

Την συζήτηση συντονίζει η **Ξένια Βαμβακούση**, Αναπληρώτρια Καθηγήτρια στο Παιδαγωγικό Τμήμα Νηπιαγωγών του Πανεπιστημίου Ιωαννίνων.

Το σεμινάριο θα διεξαχθεί διαδικτυακά μέσω MS Teams: <https://cutt.ly/vGOf9IH>



On a daily basis we are confronted with situations in which proportional reasoning is needed. Proportional reasoning also plays an important role throughout learners' mathematical development. Still, many adolescents and even adults seem to be particularly bad at it. Although proportional reasoning is so hard to apprehend, there are indications that some young children can already reason proportionally in certain situations. More research about the early development of proportional reasoning is needed.

In a broader research project that we conducted, we longitudinally mapped the development of a number of mathematical competencies at an early age (i.e., 5-9-year-olds): patterning, computational estimation, probabilistic reasoning, and proportionality.

After a general overview of the project, we will present the main studies in the area of proportionality. A first set of studies mapped the early development of proportional reasoning abilities in 5- to 9-year-olds. A second line of studies investigated the development of "relational preference" and its association with children's proportional reasoning abilities. Third, we identified possible predictors of children's proportional reasoning abilities and their development at this young age, including patterning abilities and domain-specific mathematical vocabulary. Fourth, we developed and tested instructional materials that aimed to stimulate proportional reasoning in the second grade of primary school.

Biographical note

Wim Van Dooren is Professor of Educational Sciences at the Faculty of Psychology and Educational Sciences at KU Leuven (Katholieke Universiteit Leuven, Belgium). His research interests lie in the area of mathematical learning and teaching in a broad age range (from Kindergartners over primary and secondary school students to mathematical experts), addressing various mathematical topics.

His focus is situated at the intersection of the content-specific domain, educational psychology, and cognitive psychology. Among other lines of research, he studies the role of intuitions in learning and reasoning on mathematical concepts and the precursors of mathematical competences in the early years.

He has co-authored more than 150 articles that are published in top-tier scientific journals and have received numerous citations. He is actively involved in scientific organizations such as the European Association for Research on Learning and Instruction (EARLI) and the International Group for the Psychology of Mathematics Education (PME), for which he currently serves as president elect.

INSTITUTE OF HUMANITIES AND SOCIAL STUDIES UNIVERSITY RESEARCH CENTER UNIVERSITY OF IOANNINA – GREECE

RESEARCH SEMINARS ROUND 2021 – 2022

SEMINAR 6th

Seeing things in proportion: Unraveling and stimulating the early development of proportional reasoning

Wim Van Dooren

Professor of Educational Sciences
Faculty of Psychology and Educational Sciences
KU Leuven (Katholieke Universiteit Leuven, Belgium)

Monday, 16 May 2022, 18:00 (Greek time)

The doctoral candidate of the Department of Early Childhood Education, Ms. **Georgia Pitta**, participates with a short presentation titled "*Fostering early multiplicative reasoning: A topic-specific design research study at kindergarten*".

The discussion is coordinated by **Xenia Vamvakoussi**, Associate Professor at the Department of Early Childhood Education of the University of Ioannina.

The seminar will be conducted online via MS Teams: <https://cutt.ly/vGO9IH>