

## **Dr. Konstantinos P. Christou**

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## **A.1 Current position**

Assistant Professor of Early Mathematics Education, Department of Early Childhood Education, School of Early Childhood Education, Aristotle University of Thessaloniki, Greece.

## **A.2 Education**

- 2009** Phd in Basic and Applied Cognitive Science,  
Department of Philosophy and History of Science, National and Kapodistrian University of Athens, Greece  
Thesis: ["Conceptual Change in Mathematics – The case of Algebra" \(in Greek\)](#)  
Supervisor: [Prof. Stella Vosniadou](#)
- 2001** MSc. in Science Education,  
Center for Science Education, University of Glasgow, U.K.  
Thesis: *"Difficulties in Solving Algebra Story Problems with Secondary Pupils"*  
Supervisor: Prof. Norman Reid
- 1999** B.S. in Mathematics,  
Faculty of Sciences, Aristotle University of Thessaloniki, Greece

### A.3 Scholarships

- 2002-2004** Scholarship of the Graduate Program in Basic and Applied Cognitive Science. Department of Philosophy and History of Science, National and Kapodistrian University of Athens, Greece
- 1997** Erasmus Exchange Program in Mathematics Education, South Bank University, London, U.K. Final Assessment: *Using Technology in Mathematics Education - Differences between England and Greece*. Supervisor: [Prof. Stephen Lerman](#)

### A.4 Research Programs

- 2014** Research Program “Cultivating Future Mathematical Minds”, funded by the Academy of Finland.
- 2012-2013** Research Program «Teaching Interventions to Help Students Remedy Misconceptions about the Number Concept», funded by the Special Account for Research, University of Crete.
- 2011-2012** Research Program «Students’ Misconceptions with Mathematical and Scientific Concepts and Teaching Interventions», funded by the Special Account for Research, University of Crete.
- 2008-09**  
**2009-10** Research Program “ANALOGY: Human-The Analogy Making Species”, funded by the FP6 NEST Program of the European Commission.
- 2004-2006** Research Program “The Problem of Conceptual Change and its Implications in Mathematics Education” PYTHAGORAS I, funded by E.U. and National Funds EPEAEK II.

### A.5 Academic positions

- 2022-today **Assistant Professor** at the School of Early Childhood Education, Aristotle University of Thessaloniki.
- 2020-2022 **Associate Professor** at the Department of Early Childhood Education, University of Western Macedonia, Florina, Greece.
- 2018-2020 **Assistant Professor** (tenured) at the Department of Early Childhood Education, University of Western Macedonia, Florina, Greece.

2014-2018 **Assistant Professor** at the Department of Early Childhood Education, University of Western Macedonia, Florina, Greece.

2009-2014 **Lecturer** (with contracts) at the Department of Primary Education, University of Thessaly and University of Crete.

## **A.6 Teaching Experience in Higher Education Institutes**

### **Undergraduate Courses**

- 2022-today** School of Early Childhood Education, Aristotle University of Thessaloniki.  
**fall & spring semester**
- Mathematics education in pre-school years
  - Research in Mathematics Education in pre-school years
- 2014-2021** Department of Preschool Education, University of Western Macedonia,  
**spring semester** courses:
- Designing Learning Activities for Early Mathematics
  - New Trends in Mathematics Education
- 2014-2021** Department of Preschool Education, University of Western Macedonia,  
**fall semester** courses:
- Early Mathematical Concepts
  - Developing the Number Concept
- 2014-2013** Department of Preschool Education, University of Western Macedonia,  
**fall semester** courses:
- Early Mathematical Concepts
- 2012-2013** Department of Primary Education, Faculty of Education, University of Crete,  
**spring semester** courses:
- New Methods for Teaching Mathematics in Primary School (teaching course)
  - School Teaching Practice (level III, mathematics)
- 2012-2013** Department of Primary Education, Faculty of Education, University of Crete,  
**fall semester** courses:
- New Methods for Teaching Mathematics in Primary School (seminar course)
  - School Teaching Practice (level II, mathematics)
- 2011-2012** Department of Primary Education, Faculty of Education, University of Crete,  
**spring semester** courses:
- Descriptive Statistics in Educational Science
  - Teaching Mathematics Using Alternative Teaching Methodologies
- 2011-2012** School of Pedagogical and Technological Education, course  
**spring semester**
- New Technologies in Education

- 2010-2011 spring semester** Department of Primary Education, Faculty of Education, University of Crete, courses:
- Teaching Pre-school Mathematical Concepts
  - Aspects of the History and Philosophy of Mathematics
- 2010-2011 fall semester** Department of Primary Education, Faculty of Education, University of Crete, courses:
- Descriptive Statistics in Educational Science
  - School Teaching Practice (level IV, sciences & mathematics)
- 2010- spring semester** School of Pedagogical and Technological Education, course
- New Technologies in Education
- 2009-2010 fall semester** Department of Primary Education, University of Thessaly, course:
- Educational Methodologies
- 2009- spring semester** School of Pedagogical and Technological Education
- New Technologies in Education
  - Using Multimedia in Education
- 2007** First Regional Center for Adult Education of Athens
- Learning Theories

### **Postgraduate courses**

- 2015-today fall semester** Inter-university & Interdisciplinary Postgraduate Program Studies in Mathematics Education, University of Western Macedonia, course teaching:
- Development of mathematical thinking: Development of concepts, perceptions and representations
- 2015-today fall semester** Inter-university & Interdisciplinary Postgraduate Program Studies in Mathematics Education, University of Western Macedonia, course teaching:
- Research Methodology in Mathematics Education
- 2014-2013 fall semester** Postgraduate Program Studies in “Didactic Methodology and Curriculums”, Department of Preschool Education, University of Western Macedonia, course:
- New trends in Mathematics Education
- 2011-2012 fall semester** Postgraduate Program Studies in «International Medicine-Health Crisis Management», National and Kapodistrian University of Athens, School of Medicine, course:
- Research methodology
- 2010-2011 spring semester** Inter-university & Interdisciplinary Postgraduate Program Studies in Mathematics Education, Department of Mathematics, National and Kapodistrian University of Athens, University of Cyprus, course:

- Cognitive Psychology in Mathematics Education

**2010-2011** Postgraduate Program Studies in «International Medicine-Health Crisis  
**spring** Management», National and Kapodistrian University of Athens, School  
**semester** of Medicine, course:

- Research Methodology – How to Write a Scientific Paper

**2010-2011** Inter-university & Interdisciplinary Postgraduate Program Studies in  
**2015-2018** Mathematics Education, Department of Mathematics, National and  
Kapodistrian University of Athens, University of Cyprus, course:

- Psychology of Learning- Cognitive Psychology

## A.7. Academic Writing

### A.7.a Doctoral Thesis

1. **Christou, K. P.** (2009). Conceptual Change in Mathematics – The case of Algebra" (Unpublished Doctoral Thesis) (Supervisor: prof. Stella Vosniadou), Basic and Applied Cognitive Science. Department of Philosophy and History of Science, National and Kapodistrian University of Athens, Greece. (in Greek)

### A.7.b Master Thesis

2. **Christou, K. P.** (2001). *Difficulties in solving algebra story problems with secondary pupils.* (Unpublished master's thesis) (supervisor: prof. Norman Reid), Centre for Science Education, University of Glasgow, U.K.

### A.7.c Publications in International Scientific Journals

3. **Christou, K. P.,** Kyrvei D. I., & Vamvakoussi, X. (2022): Interpreting literal symbols in algebra under the effects of the natural number bias, *Mathematical Thinking and Learning*, DOI: <https://doi.org/10.1080/10986065.2022.2128276>
4. Georgiades, V & **Christou, K. P.** (2021). Concept Mapping to Measure Mathematical Experts' Number Sense. *International Journal for Research in Mathematics Education*, 10(3), 6-26. doi: <https://doi.org/10.37001/ripem.v10i3.2619>
5. **Christou, K. P.** & Vamvakoussi, X. (2021). Natural number bias on evaluations of the effect of multiplication and division: the role of the type of numbers. *Mathematics Education Research Journal*, doi: <https://doi.org/10.1007/s13394-021-00398-3>
6. **Christou, K. P.,** Pollack, C., Van Hoof, J., & Van Dooren, W. (2020). Natural Number Bias in Arithmetic Operations With Missing Numbers–A Reaction Time Study. *Journal of Numerical Cognition*, 6(1), 22-49. doi: <https://doi.org/10.5964/jnc.v6i1.228>
7. **Christou, K. P.,** & Prokopou, A. (2020). Using refutational text to address the Multiplication Makes Bigger misconception. *Educational Journal of the University of Patras UNESCO Chair*. 7(1), 125-140, doi: <https://doi.org/10.26220/une.3210>

8. Vamvakoussi, X., **Christou, K.P.**, Vosniadou (2018). Bridging psychological and educational research on rational number knowledge. *Journal of Numerical Cognition*, 2018, Vol. 4(1), 84–106, doi:10.5964/jnc.v4i1.82
9. Δημητρακοπούλου, Σ. Α., & **Χρήστου, Κ. Π.** (2018). Τα γράμματα-μεταβλητές: Πώς τα κατανοούν οι μαθητές και πώς εμφανίζονται στα βιβλία Μαθηματικών του Γυμνασίου. *Έρευνα στη Διδακτική των Μαθηματικών*, 0(11), 31-52. doi:<http://dx.doi.org/10.12681/enedim.18938>
10. **Christou, K. P.** (2017) Students' interpretation of variables and the phenomenal sign of algebraic expressions, *MENON: Journal of Educational Research*, 4, 161-175.
11. **Christou, K. P.** (2015) Natural number bias in operations with missing numbers. *ZDM Mathematics Education*, 47(5), 1-12. doi:10.1007/s11858-015-0675-6
12. **Christou, K. P.** (2015) The dual aspect of Natural Number Bias in Arithmetic Operations, *Mediterranean Journal for research in Mathematics Education*, 14, 107-121
13. **Christou, K. P.** & Vosniadou, S. (2012). What kinds of numbers do students assign to literal symbols? Aspects of the transition from arithmetic to algebra. *Mathematical Thinking and Learning*, 14(1), 1-27. <https://doi.org/10.1080/10986065.2012.625074>
14. Vamvakoussi, X., **Christou, K. P.**, Mertens, L., & Van Dooren, W. (2011). What fills the gap between discrete and dense? Greek and Flemish students' understanding of density. *Learning and Instruction*, 21(5), 676–685. <https://doi.org/10.1016/j.learninstruc.2011.03.005>

#### **A.7.d Publications in Greek Scientific Journals**

15. Dimitrakopoulou, S. A., & **Christou, K. P.** (2018). Letters as variables: How students understand them and how they appear in high school mathematics textbooks. *Research in Mathematics Education*, (ENEDIM), 0(11), 31-52. doi:<http://dx.doi.org/10.12681/enedim.18938> (in Greek)
16. Lemomi, I. & **Christou, K. P.** (2019). Mental calculations strategies with integers. *Journal of Young Researchers*, Association of Researchers in Mathematics Education (ENEDIM), 13, 25-45 doi: <http://dx.doi.org/10.12681/enedim.21965> (in Greek)
17. Maris, D & **Christou, K. P.** (2019). Mathematical history as a tool for understanding explicit numbers. *Journal "Young Researchers"*, of the Association of Researchers in Mathematics Education (ENEDIM), 13, 46-67 doi: <http://dx.doi.org/10.12681/enedim.21967> (in Greek)
18. **Christou, K. P.** (2022). students' misconceptions in arithmetic operations through the conceptual change approach. *Journal of Psychology*. 27 (1), 32-47 <https://doi.org/10.12681/psychps.30685> (in Greek)

**A.7.e Publications in Conference Proceedings with Reviewing Process**

19. Koptsi, I., **Christou, K.P.**, & Vamvakousi, X. (2022). Dividing fractions: an alternative approach. An alternative approach. In H. Stathopoulou, T. Triantaphyllides, K. Hadjikyriakou, A. Chronaki, & V. Chrysikou (Eds.), *Proceedings of the 9th Panhellenic Conference of the Association of Researchers of Mathematics Teaching: Mathematics education facing new and old challenges*. (pp. 326-335). Volos: ENEDIM. (in Greek)
20. Kyrvei, D., Vamvakousi, X., & **Christou K. P.** (2022) The dual effect of natural number bias on variable understanding - The integrity and phenomenal sign of algebraic representations. In H. Stathopoulou, T. Triantaphyllides, K. Hadjikyriakou, A. Chronaki, & V. Chrysikou (Eds.), *Proceedings of the 9th Panhellenic Conference of the Association of Researchers of Mathematics Teaching: Mathematics education facing new and old challenges*. (pp. 356-365). Volos: ENEDIM. (in Greek)
21. Georgiadis, V. H, & **Christou K. P.** (2022) Conceptual maps for the measurement of number sense. In H. Stathopoulou, T. Triantaphyllides, K. Hadjikyriakou, A. Chronaki, & V. Chrysikou (Eds.), *Proceedings of the 9th Panhellenic Conference of the Association of Researchers of Mathematics Education: Mathematics education facing new and old challenges*. (pp. 336-355). Volos: ENEDIM. (in Greek)
22. Kyrvei, D. & **Christou, K. P.** (2021). Natural numbers bias in understanding variables – The integrity and the phenomenal sign effect. In M. Inprasitha, N. Changsri, & N. Boonsena (Eds.). *Proceedings of the 44th Conference of the International Group for the Psychology of Mathematics Education*, Vol. 1, pp. 150-157. Khon Kaen, Thailand: PME.
23. Dimitrakopoulou, S., & **Christou, K. P** (2018) Natural Number Bias in understanding variables in algebra – the role of mathematics textbooks. In *The Book of Abstracts of the 11th International Conference on Conceptual Change – Epistemic Cognition & Conceptual Change* (pp. 72), Klagenfurt, Austria.
24. Van Dooren, W., Pollack, C., Vannuten, S., Van Hoof, J. **Christou, K. P** (2018) Natural Number Bias when Reasoning about the Effect of Operations. In *The Book of Abstracts of the 11th International Conference on Conceptual Change – Epistemic Cognition & Conceptual Change* (pp. 97), Klagenfurt, Austria.
25. **Christou, K. P.**, (2018). The natural number bias in arithmetic operations: the case of the representational form of the number. In Bergqvist, E., Österholm, M., Granberg, C., & Sumpter, L. (Eds.). (2018). *Proceedings of the 42nd Conference of*



- the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 267-274). Umeå, Sweden: PME.
26. **Christou, K. P.** (2017) Natural Number Bias in operations – Beyond the size of numbers. In *Proceedings of the 7th National Conference of Greek Association of Researchers in Mathematics Education* (ENEDIM) (pp. 931-942). Athens, Greece, EN.E.DI.M., (in Greek)
  27. Kourti, S. K, Triantafillakos, A., **Christou, K. P.** (2017) Natural Number Bias as intuitive reasoning – A study of students’ feel of certainty. In *Proceedings of the 7th National Conference of Greek Association of Researchers in Mathematics Education* (ENEDIM) (pp. 837-847). Athens, Greece, EN.E.DI.M., (in Greek)
  28. Korda, M.A., Micha, I., **Christou K.P.** (2017) The Natural Number Bias in operations between natural numbers and fractions. In F. Gousia (Ed.) *Proceedings of the 4th Conference of Neos Paidagogos*, (p. 824-832). Athens, Greece (ISBN: 978-618-82301-2-5).
  29. **Christou, K.P.** (2016) The Natural Number Bias in Arithmetic Operations: Beyond the size of the numbers. In the Book of Abstracts of the 3rd International Conference - Education across Borders| Education and Research across Time and Space, (p. 546-553), Bitola, FYROM.
  30. **Christou, K.P.**, Pollack, C., Vannuten, S., Van Hoof, J., Van Dooren, W. (2016) Testing the Number Navigation Game with Mathematics Educators. In *The Book of Abstracts of the 10th International Conference on Conceptual Change - Conceptual Change Meets Other Disciplines* (pp. 72), Florina, Greece.
  31. Dimitriadis, T.E., **Christou, K. P.**, (2016) The Natural Number Bias in Arithmetic Operations when Negative Numbers are Introduced. In *The Book of Abstracts of the 10th International Conference on Conceptual Change - Conceptual Change Meets Other Disciplines* (pp. 73), Florina, Greece.
  32. Kemos, A., **Christou, K. P.**, Vamvakoussi, X., (2016) Testing the Number Navigation Game with Mathematics Educators. In *The Book of Abstracts of the 10th International Conference on Conceptual Change - Conceptual Change Meets Other Disciplines* (pp. 46-47), Florina, Greece.
  33. **Christou, K. P.** (2015) The Dual Aspect of Natural Number Bias in Arithmetic Operations. In *The Book of Abstracts and Extended Summaries of the 16th Biennial Conference of the European Association for Research on Learning and Instruction* (pp. 270-271), Limassol, Cyprus.
  34. **Christou, K.P.**, McMullen, J., Van Dooren, W., Verschaffel, L., Lehtinen, E., (2015) The Rational Number Navigation Game - A Serious Game for Developing Rational Number Knowledge. In *The Book of Abstracts and Extended Summaries of the 16th Biennial Conference of the European Association for Research on Learning and Instruction* (pp. 655-656), Limassol, Cyprus.
  35. **Christou, K. P.** (2015) The effect of Natural Number Bias in operations, size and the density of the rational numbers In *Proceedings of the 6th National Conference of Greek Association of Researchers in Mathematics Education* (ENEDIM) (pp. 688-697). Thessaloniki, Greece, EN.E.DI.M., (in Greek)

36. Dimitrakopoulou S. & **Christou, K. P.** (2015) Literal symbols as variables in Algebra - How students understand them and how they are presented in the mathematics schoolbook. *Proceedings of the 32nd National Conference of Greek Mathematics Society* (pp.273-284), E.M.E., Kastoria, Greece (in Greek)
37. Gatsioura, K., Zografou, K., Makarina, A., Michailidou M., **Christou, K.P.** (2015) An experiential activity of learning to construct frequency charts in the kindergarten, *In the 2nd Educational Conference on Innovation, Creativity, Interdisciplinarity in the School* (pp.50-51), Florina, Greece.
38. Dimitrakopoulou S. & **Christou, K. P.** (2014) How students interpret literal symbols and how they appear in the greek high school. In *Mathematics in School and Everyday Life - Proceedings of the 5th National Conference of Greek Association of Researchers in Mathematics Education* (ENEDIM) (pp. 1-10). Florina, Greece, EN.E.D.I.M., ISSN: 1792-8494. (in Greek)
39. **Christou, K. P.** (2014) The Natural Number Bias in arithmetic operations. In *Mathematics in School and Everyday Life - Proceedings of the 5th National Conference of Greek Association of Researchers in Mathematics Education* (ENEDIM) (pp. 1-10). Florina, Greece, EN.E.D.I.M., ISSN: 1792-8494. (in Greek)
40. **Christou, K.P.**, McMullen, J., Van Dooren, W., Verschaffel, L., Lehtinen, E., (2014) Mind the Gap! Considerations in the Development of a Rational Number Navigation Game, In the 1st Meeting on Research on Domain-Specific Serious Games" of the International Scientific Research Community: WO.008.14N on Developing competencies in learners: From ascertaining to intervening. Leuven, Belgium.
41. **Christou, K. P.** (2013) Whole numbers bias in calculations with missing numbers – another chance for conceptual change. In *The Book of Abstracts and Extended Summaries of the 15th Biennial Conference of the European Association for Research on Learning and Instruction* (pp. 565-566), Munich, Germany.
42. **Christou, K. P.** (2012). Helping students remedy the phenomenal sign bias: The case of a refutational lecture. In C. Prachalias (Ed.) *Proceedings of the 8<sup>th</sup> International Conference on Education* (pp. 643-648). Samos, Greece.
43. Arampatzis, K., & **Christou, K. P.** (2011). In M. Kaldrimidou & X. Vamvakoussi (Eds.), *The transition from Arithmetic to Algebra, Solving and Categorizing Equations and Inequalities - Proceedings of the 4th National Conference of the Greek Association of Research in Mathematics Education* (pp. 85-94). Ioannina, Greece. (in Greek)
44. **Christou, K. P.**, Vamvakoussi, X., & Van Dooren, W. (2011). Kinds of number values that variables can (not) represent - Greek and Flemish students responses. In M. Kaldrimidou & X. Vamvakoussi (Eds.), *Proceedings of the 4th National Conference of the Greek Association of Research in Mathematics Education* (pp. 539-548). Ioannina, Greece. (in Greek)
45. Vamvakoussi, X., Mertens, L., **Christou, K. P.**, & Van Dooren, W. (2011) Greek and Flemish students' conceptual difficulties in the shift from (discrete) natural to (dense) rational numbers. In *The Book of Abstracts and Extended Summaries of the*

- 14th Biennial Conference of the European Association for Research on Learning and Instruction* (pp. 1426-1427). Exeter, UK.
46. **Christou, K. P.**, & Vosniadou, S. (2011) Changing the way students interpret the phenomenal sign of algebraic expressions: The effect of direct instruction. In *The Book of Abstracts and Extended Summaries of the 14th Biennial Conference of the European Association for Research on Learning and Instruction* (pp. 648-649). Exeter, UK.
  47. Vamvakoussi, X., **Christou, K.P.**, & Van Dooren, W. (2010). Greek and Flemish students' understanding of the density of rational numbers: More similar, than different. In M.M.F. Pinto & T.F. Kawasaki (Eds.), *Mathematics in different settings – Proceedings of the 34th Conference of the International Group for the Psychology in Mathematics Education* (Vol. 4, pp. 249-256). Belo Horizonte, Brazil: PME.
  48. Van Dooren, W., **Christou, K.P.**, & Vamvakoussi, X. (2010). Greek and Flemish students' interpretation of the literal symbols as variables. In M.M.F. Pinto & T.F. Kawasaki (Eds.), *Mathematics in different settings – Proceedings of the 34th Conference of the International Group for the Psychology in Mathematics Education* (Vol. 4, pp. 257-264). Belo Horizonte, Brazil: PME.
  49. **Christou, K. P.** & Vosniadou, S. (2009). The misinterpretation of the phenomenal sign of algebraic expressions - A teaching intervention. In F. Kalavassiss, S. Kafoussi, M. Chionidou-Moskofoglou, G. Fesakis, (Eds.), *Proceedings of the 3rd National Conference of Greek Association of Researchers in Mathematics Education* (pp. 229-308). Athens, Typothito. (in Greek)
  50. **Christou, K. P.**, & Vosniadou, S. (2009). Misinterpreting the use of literal symbols in Algebra. In M. Tzekaki, M. Kaldrimidou & H. Sakonidis (Eds.), *Proceedings of the 33rd Conference of the International Group for the Psychology of Mathematics Education* (Vol. 2, pp. 329-339). Thessaloniki, Greece: PME
  51. **Christou, K. P.**, Vosniadou, S., & Vamvakoussi, X. (2007). Interpreting the sign of algebraic expressions. In D. S. McNamara & J. G. Trafton (Eds.), *Proceedings of the 29th Annual Cognitive Science Society* (p.1723). Austin, TX: Cognitive Science Society.
  52. Arampatzis, K., Skiadaressis, P., & **Christou, K. P.** (2007). Conceptual change from equations to inequalities with no solution or with real number solution. In C. Sakonides, D., Desli, (Eds.), *Typical and non-Typical mathematics: Characteristics, relationships, characteristics, relationships and interactions within the mathematics education, Proceedings of the 2nd National Conference of Greek Association of Researchers in Mathematics Education* (pp. 637-638). Athens, Typothito. (in Greek)
  53. **Christou, K. P.** & Vosniadou, S. (2007). How students understand the use of literals in mathematics. In C. Sakonides, D., Desli, (Eds.), *Typical and non-Typical mathematics: Characteristics, relationships, characteristics, relationships and interactions within the mathematics education, Proceedings of the 2nd National Conference of Greek Association of Researchers in Mathematics Education* (pp. 279-289). Athens, Typothito. (in Greek)
  54. **Christou, K. P.**, & Vosniadou, S., (2007). Students' difficulties with algebraic expressions containing literal symbols. In S. Vosniadou, D. Kayser, & A. Protopapas

- (Eds.), *Proceedings of the 2nd European Cognitive Science Conference (EuroCogSci07)* (p. 881). East Sussex, UK: Lawrence Erlbaum Associates.
55. **Christou, K. P.**, & Vosniadou, S. (2006). Students' Interpretation of the Use of Literal Symbols in Algebra – A conceptual change approach. In J. Novotná, H. Moraová, M. Krátká, & N. Stehlíková (Eds.), *Proceedings of the 30th Conference of the International Group for the Psychology of Mathematics Education* (Vol 1, pp. 171-172). Prague:PME.
56. Vosniadou, S., Vamvakoussi, X., & **Christou, K. P.** (2005). What can we gain from a conceptual change approach to the learning and teaching of mathematics? In A. Gagatsis, F. Spagnolo, G. Makrides & V. Farmaki (Eds.), *Proceedings of the 4th Mediterranean Conference on Mathematics Education* (Vol. 2, pp. 435-446). Palermo, Italy.
57. **Christou, K. P.** & Vosniadou, S. (2005). How students interpret literal symbols in algebra: A conceptual change approach. In B. G. Bara, L. Barsalou & M. Bucciarelli (Eds.), *Proceedings of the XXVII Annual Conference of the Cognitive Science Society* (pp. 453-458). Stresa, Italy.
58. **Christou, K. P.**, & Vosniadou, S. (2004). Conceptual change in the transition from arithmetic to algebra. In S. Vosniadou, C. Stathopoulou, X. Vamvakoussi, & N. Mamalougos (Eds.), *Conceptual Change: Philosophical, Historical, Psychological and Educational Approaches - Proceedings of the 4th European Symposium on Conceptual Change* (pp. 115-117). Athens: Gutenberg Press
59. **Christou, K. P.** & Vosniadou, S. (2004). Cognitive barriers in understanding the use of symbols of algebra. In N. Makris, & D. Desli (Eds.), *Current trends in cognitive psychology: Bridges for the study of cognition - Proceedings in the National Conference of Cognitive Science*, (pp. 303-306). Athens: Dardanos (In Greek)
60. **Christou, K. P.**, Reid, N., & Vosniadou, S., (2003). Difficulties in solving algebra story problems. In Schmalhofer, F., Young, R.M., Katzz, G. (Eds.), *Proceedings of the European Cognitive Science Conference 2003* (p.378). Osnabrück: University of Osnabrück.

#### **A.7.f Book Chapters**

61. Christou, K. P. (2019). Conceptual change and the Natural Number Bias effect in understanding the concept of variable. In N. Kyriakopoulou & E. Skopelitis (Eds.), *Cognition and learning in the light of Conceptual Change: Contemporary research and reflections* (pp: 163-184): Gutenberg Publications. (in Greek)
62. **Christou, K. P.** Vosniadou, S., & Vamvakoussi, X. (2007). Students' interpretations of literal symbols in algebra. In S. Vosniadou, A. Baltas & X. Vamvakoussi (Eds.), *Re-Framing the Conceptual Change Approach in Learning and Instruction* (pp. 283-297): Elsevier Press.

#### A.7.f Edited Books

1. Clements, D., H., & Sarama, J. (2023). *Learning and Teaching Early Math: The Learning Trajectories Approach*. Greek Edition (X. Vamvakoussi & **K. P. Christou**, Eds.). (p. 990) Athens: Gutenberg.
2. **Christou, K. P.** & Eshach, H. (Eds.) (2016). *Conceptual Change Meets Other Disciplines - Abstracts of the 10<sup>th</sup> International Conference on Conceptual Change*, Florina: UOWM (p. 110).

#### A.7.g Conference Proceedings

1. Kandyli, A., & Christou, K. P. (2023, September). A game-based teaching intervention for early understanding of measurement division. In the book of abstracts of the 6th Panhellenic Conference on Cognitive Science, (pp. 75-76), Xylokastro: Greece. (in Greek)
2. Melissanidou, I., Markos, A., & **Christou, K. P.** (2023, September). Piloting a new tool for measuring early mathematical proficiency. In Proceedings of the 13th Understanding the measurement divide in early childhood, (pp. 56-57), Xylokastro: Greece. (in Greek)
3. **Christou, K. P.** & Kandyli, A. (2023, August). Early understanding of measurement division: the effects of a minimal intervention via game activity. In *The Book of Abstracts of the 20th Biennial Conference of the European Association for Research on Learning and Instruction*, (p. 106), Thessaloniki, Greece.
4. Koptsi, I, **Christou, K. P.** & Vamvakoussi, X. (2023, August). Implementing conceptual change principles for mathematics instruction: the case of fraction division. In *The Book of Abstracts of the 20th Biennial Conference of the European Association for Research on Learning and Instruction*, (p. 475), Thessaloniki, Greece.
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9. Van Dooren, W., **Christou, K. P.**, Depaepe, F., Inglis, M., Määttä, S., McMullen, J., Obersteiner, A., Ribeiros, P.H., Van Hoof, J., Triantafyllou, M., Vamvakoussi, X., Verschaffel, L., Wittman, G., Wollacott, B (2019, August). Tackling the natural number bias – A comparative textbook analysis. In *The Book of Abstracts of the 17th Biennial Conference of the European Association for Research on Learning and Instruction*, (p. 84), Aachen, Germany.
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25. **Christou, K. P** (2013, August). Whole numbers bias in calculations with missing numbers – another chance for conceptual change. Paper presented at the 15th

- Biennial Conference of the European Association for Research on Learning and Instruction, Munich, Germany.
26. Arambatzis, K., **Christou, K. P.**, & Vosniadou, S (2010, May). The Transition from Arithmetic to Algebra: Categorization and Solving of Equations and Inequalities Paper presented at the 7th Biennial Meeting on Conceptual Change. Leuven, Belgium.
  27. **Christou, K. P.**, Vamvakoussi, X., VanDooren, W. (2010, May). Students' Ways to Interpret Literal Symbols in Algebra – A Comparison Between Greek and Flemish Students. Paper presented at the 7th Biennial Meeting on Conceptual Change. Leuven, Belgium.
  28. Vamvakoussi, X., **Christou, K. P.**, VanDooren, W. (2010, May). How many numbers are there in an interval? Greek and Flemish 9th graders struggling with the density of numbers. Paper presented at the 7th Biennial Meeting on Conceptual Change. Leuven, Belgium.
  29. **Christou, K. P.**, & Vosniadou, S. (2009, August). Students' Tendency to Think of Literal Symbols as Natural Numbers. Paper presented at the 13th European Conference on Research in Learning and Instruction. Amsterdam, Netherlands.
  30. **Christou, K. P.**, & Vosniadou, S. (2009, August). Transgressing the Barriers of Thinking with Natural Numbers in Understanding Variables in Algebra. Paper presented at the 13th European Conference on Research in Learning and Instruction. Amsterdam, Netherlands.
  31. **Christou, K. P.**, & Vosniadou, S. (2008, July). Natural numbers and their interference in students' interpretations of literal symbols in algebra. Paper presented at the XXIX International Congress of Psychology. Berlin, Germany.
  32. **Christou, K. P.**, & Vosniadou, S. (2008, August). Understanding the concept of variable – a teaching intervention to foster conceptual change. Paper presented at the 6th International Conference on Conceptual Change. Turku, Finland.
  33. VanDooren, W., Vamvakoussi, X., **Christou, K. P.** & Ellen Gillard (2008, August) Unravelling the cognitive obstacles in mathematical reasoning. Paper presented at the 6th International Conference on Conceptual Change. Turku, Finland.
  34. **Christou, K. P.**, & Vosniadou, S. (2007, August). Students' interpretations of algebraic expressions in inequalities. Paper presented at the 11th European Conference on Research in Learning and Instruction. Budapest, Hungary.
  35. **Christou, K. P.**, & Vosniadou, S. (2006, July). Students' Interpretation of the Use of Literal Symbols in Algebra – A conceptual change approach. In J. Novotná, H. Moraová, M. Krátká, & N. Stehlíková (Eds.). Paper presented at the 30th Conference of the International Group for the Psychology of Mathematics Education. Prague, Czech Republic.



36. **Christou, K. P.** & Vosniadou, S. (2006, August) Students' interpretations of the use of literal symbols in inequalities. Paper presented at the 5th International Conference on Conceptual Change. Stockholm, Sweden.
37. **Christou, K. P.**, & Vosniadou, S. (2005, August). Conceptual change in understanding the use of literal symbols in algebra. Paper presented at the Symposium "Conceptual Change in Mathematics: A Closer Look" In the 11th European Conference on Research in Learning and Instruction. Nicosia, Cyprus.
38. **Christou, K. P.**, & Markidis, K. (2004, April). Une analyse socio-didactique du passage du calcul arithmétique à l'algèbre. Paper presented at the 7e Biennale de l'Eduaction et de la Formation. Lion, France.

## **A.8 Organizing Scientific Conferences and Symposiums**

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| <b>2018</b> | Chair of the <i>11<sup>th</sup> International Conference on Conceptual Change – Epistemic Cognition and Conceptual Change</i> , August 2018, Klagenfurt, Αυστρία.                  |
| <b>2016</b> | Chair of the organizing committee of the <i>10<sup>th</sup> International Conference on Conceptual Change – Conceptual Change Meets Other Disciplines</i> , June, Florina, Greece. |
| <b>2016</b> | Organizing the 1 <sup>st</sup> Summer School for Junior Researchers " <i>1<sup>st</sup> PhD Summer School on Conceptual Change</i> ", 7-9 June, 2016, Florina, Greece              |
| <b>2008</b> | Instructional implications of conceptual change research in mathematics, 6th International Conference on Conceptual Change, Turku, Finland.  |
| <b>2009</b> | Barriers to the development of mathematical knowledge: Just what kind of barriers? 13th European Conference on Research in Learning and Instruction, Amsterdam, Netherlands.       |
| <b>2007</b> | Organizing Committee of the 2nd European Cognitive Science Conference 2007. Delphi, Greece.  |
| <b>2004</b> | Organizing Committee of the 4th International Conference on Conceptual Change, Delphi, Greece.   |

## **A.9 Scientific Associations**

- Partner of the European Association for Learning and Instruction EARLI [Centre for Innovative Research (E-CIR)] "Conceptual change", (2017-2020).
- European Association for Research on Learning and Instruction
- Cognitive Science Society (International, European, Hellenic)
- Hellenic Association for Research in Mathematics Education
- Hellenic Mathematical Association
- Hellenic Psychological Association

## **A.10 Other Academic Activities**

- Reviewer in the Journal for Learning and Instruction, Elsevier, the ZDM-Mathematics Education, Springer, the MENON: Journal of Educational Research, Memory and Cognition, the Journal: Noesis, the journal: Psychology, the e-Journal: Theory and Research in Education.
- Scientific Expert of the Education, Audiovisual and Culture Executive Agency (EACEA), EU.
- Scientific Expert of the National Organization for the Certification of Qualifications and Vocational Guidance (EOPPEP), Greece.