Educational Technology Lab
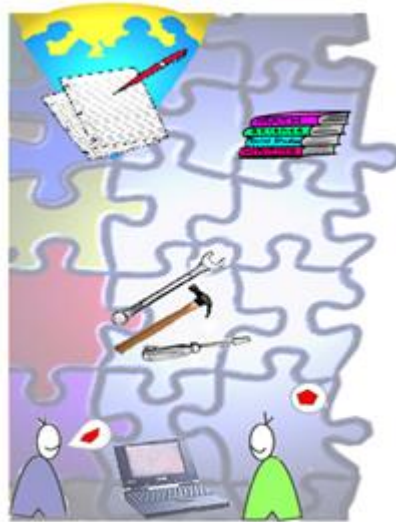
University of Athens, School of Philosophy

Department of Educational Studies

Lab Director:

Prof. Chronis Kynigos:

http://etl.eds.uoa.gr

**Educational Technology Lab
University of Athens, School of Philosophy,
Department of Educational Studies**

Issue: Digital Transformation and Educational Studies

- Digital Transformation, learning, teaching and tools

  - Learning
    - Meaning-making, constructionism and disprovability
    - Personal, interactive and cooperative learning in collectives
  - Teaching
    - The teacher as a reflective, professionally evolving, with personal pedagogical agenda, teaching techniques, as a designer of educational material and activities
    - Teaching mechanics
    - Design and development of digital expressive tools for creation and modification
  - Tools
    - Tools for construction and modification of models and digital games
    - Half-baked digital artefacts
    - Black&white box architecture

Personnel

- Collaborating Academic Staff
  - Assistant Professor G. Psycharis
  - Associate Professor M. Daskolia
  - Assistant Professor Z. Smyrnaiou
  - Associate Professor S. Papanikolaou
- 15 doctoral researchers
  - 8 Post-doctoral Researchers
  - N. Yiannoutsou , K. Makri, S. Keisoglou, K. Gavrilis, M. Latsi, F. Moustaki, E. Kalogeria, A. Kolovou
- 6 PhD Students
  - M. Xenos, D. Diamantidis, M. Grizioti, E. Panagiotou, C. Gkreka, M. Karavakou

- Master Dissertations
- 35 collaborating teachers at Digital School
- 118 educators for utilisation of Digital Technologies in Education

Master Programs

- ## Current interdisciplinary MPs

  - ### Master's Degree in Digital Transformation and Educational Practice http://msc-ditrep.uniwa.gr/

  - ### Master's Degree in Mathematics Education http://me.math.uoa.gr/

- ## Past Master Programs

  - Master's Degree in Theory, Practice and Evaluation of Educational Material
    - Concentration in Digital Technologies in Education
  - Master's Degree in Specialization Courses Education with New Technologies

European Projects E&A
2010-2020

1. **'T-CREPE':** Development of an innovative web based platform to support co- creation based learning, with a focus on entrepreneurship largely, but not exclusively, on the subject of textile engineering. (KA2 Erasmus+ Project No: 612641)

2. **'CoThinkE':** Computational Thinking and Education, University of Linnaues, Project n. 15461

3. **'DoCENT':** Digital Creativity ENhanced in Teacher Education, (2017-2019) Framework of Digital Creative Teaching Competences, Erasmus+, Strategic Partnerships for for higher education, 1-IT02-KA203-036807.

4. **'ER4STEM':** Educational Robotics for STEM, (2015-2018), H2020-SEAC-2014-1, Research Executive Agency (REA), Spreading Excellence, Widening Participation, Science with and for Society (Project n. 665972). Principal Investigator for Partner Organization. http://er4stem.acin.tuwien.ac.at/

5. **'MC²', Mathematical Creativity Squared**: A Computational Environment to Stimulate and Enhance Creative Designs for Mathematical Creativity', (2013-2016), Technological Development and Demonstration (FP7), Strategic Objective ICT-2013.8.1 "Technologies and scientific foundations in the field of creativity" (Project No. 610467). http://www.mc2-project.eu

6. **'METAFORA'** Learning to Learn Together: A Visual Language for Social Orchestration of Educational Activities, Information Society and Media, Directorate General, Information and Communication Technologies, FP7, IST-5, STREP, 257872 (2010-2013).

European Projects E&A
1995-2009

7. **'ReMath' - Representing Mathematics with Digital Media** FP6, IST-4, STREP 026751 (2005 – 2008).

8. **'TERECoP'** Teacher Education on Robotics - enhanced Constructivist Pedagogical Methods, Socrates Programme, Comenius 2.1 Action: Training of School Education Staff Project 128959-CP-1-2006-1-GR-C21, (2006-2009).

9. **'ESCALATE'** Enhancing SCience Appeal in Learning through Argumentative inTEraction FP6-2004-Science-and-Society-11, 020790 (2006-2008).

10. **'Kaleidoscope'** - Concepts and Methods for Exploring the Future of Learning with Digital Technologies, # 507838, 'TEL' - 'Technology-enhanced Learning and Access to Cultural Heritage', Network of Excellence, FP6-2002-IST Action line.3.1.12 (2004-2007). European Research Team 'Technology Enhanced Learning of Mathematics' http://telma.noe-kaleidoscope.org, European Research Team 'Production of Educational Formats' http://formats.noe-kaleidoscope.org, Joint European Research Project Patterns for the Design and Deployment of Mathematical Games: http://lp-noe-kaleidoscope.org.

11. **'SEED'** - 'Seeding cultural change in the school system through the generation of communities engaged in integrated educational and technological innovation', European Community, IST, School of Tomorrow, IST-2000-25214. (2001-2004).

12. **'C Cube'** – 'Children in Choros and Chronos, European Commission, Esprit LTR, Experimental School Environments', #29346, 1999-2000.

13. **'NETLogo'** – 'The European Educational Interactive Site', European Community, Educational Multimedia Taskforce, Joint Call on educational Multimedia, MM1020, 1998-1999. Principal Investigator for Partner Organization (CTI).

14. **'IMEL'** – 'Intercultural Microworld Courseware for Exploratory Learning', European Commission, Socrates, Open and Distance Learning, 1996-1998.

Object Development
Ministry of Education in Greece

- **Current Projects**

  – **Digital School II:** Expansion and Utilisation of the Digital Educational Platform, the Interactive Books and the Digital Library of Learning Objects

  – **B-Level ICT Teacher Training :** Completed in-service training of teachers in the utilisation and application of Digital Technologies in the teaching practice. So far this project has trained the 35% of the teachers in Greece and also 600 teacher educators . NSRF (2014-2020)

- **Past Projects**

  – **Digital School I:** Operational Program "Education and Lifelong Learning" – NSRF 2007-2013

  – **Teacher Training for Utilisation and Application of Digital Technologies at the Teaching Practice I & II:** Axes 1, 2 and 3 of the NSFR's Operational Program "Education and Lifelong Learning" (2007-2013) – Co-funding of the European Union (European Social Fund) and the greek public sector – Partnership of sectors: Teacher Training Organization (O.EP,EK,), Computer Technology Institute (CTI) and the Pedagogy Institute (PI)

  – **Odysseia Project (1996-2000)** Operational Program for Education and Initial Vocational Training (EPEAEK) of the Ministry of the Hellenic Ministry of Education and Religious Affairs , implemented by the Department of Secondary Education, the Community Support Framework, the Pedagogy Institute and the Computer Technology Institute (CTI) which was responsible for the design, the technical support and the observation of the implementation of the 19 projects included.

Research and Development

- **Ellinourgimata:** Development of interactive applications for inquiry-based learning in the area of ancient Greek technology, from historical, technological and mathematical perspectives. Demonstrating ancient technology using ICT for teaching its importance. Design, development and implementation of educational activities at 4 schools. Greek Ministry of Development, 3rd Community Operational Framework Programme Competitiveness.
- **The MEKAST Project:** Study of learning and teaching processes that evolve in educational contexts supported by specially designed digital tools so as to promote the exploratory, creative and communicational character of learning. The Project was characterized by an interdisciplinary approach that encompasses the fields of mathematics and language. Ministry of Development, General Secretariat for Research and Development, Program of supporting Researchers (P.En.E.d.), Project No. 8463
- **The LeGa Project :** Innovation in educational practice. Learning through models and games. Ministry of Development, General Secretariat for Research and Development, Action: 3.3.1-Actions of Research and Technological Development in Information Society. Project No 26
- **The IPER Project:** Development and properties of learning environments of communication in Mathematics using exploratory software. General Secretariat for Research and Technology, Ministry of Development.
- **Thranio :** Reusable software components for the authoring of high quality educational software for investigational activity. General Secretariat for Research and Technology, E.P.E.T. II, Project No 78, 1999-2001.
- **YDEES:** Development of Popular Computational Tools for General Education: The Computer as Medium for Investigation, Expression and Communication for All in the School. General Secretariat for Research and Technology, E.P.E.T. II, Project No 726, 1995-1998.

Technovlastos - Polymechanon

Πολυμήχανο (with subtitles)

- **The first Technology Fun Park with educational games in Greece**
  - The ETL spin-off Exploratorium, Third Supporting Framework, Strategic Program "Competitiveness" 4.1., Ministry of Development, General Secretariat for Research and Technology
  - Technovlastoi, project No. 5, Ministry of Development E.P.E.T.

Polymechanon is an informal education site...

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Scroll for details

Products– digital tools
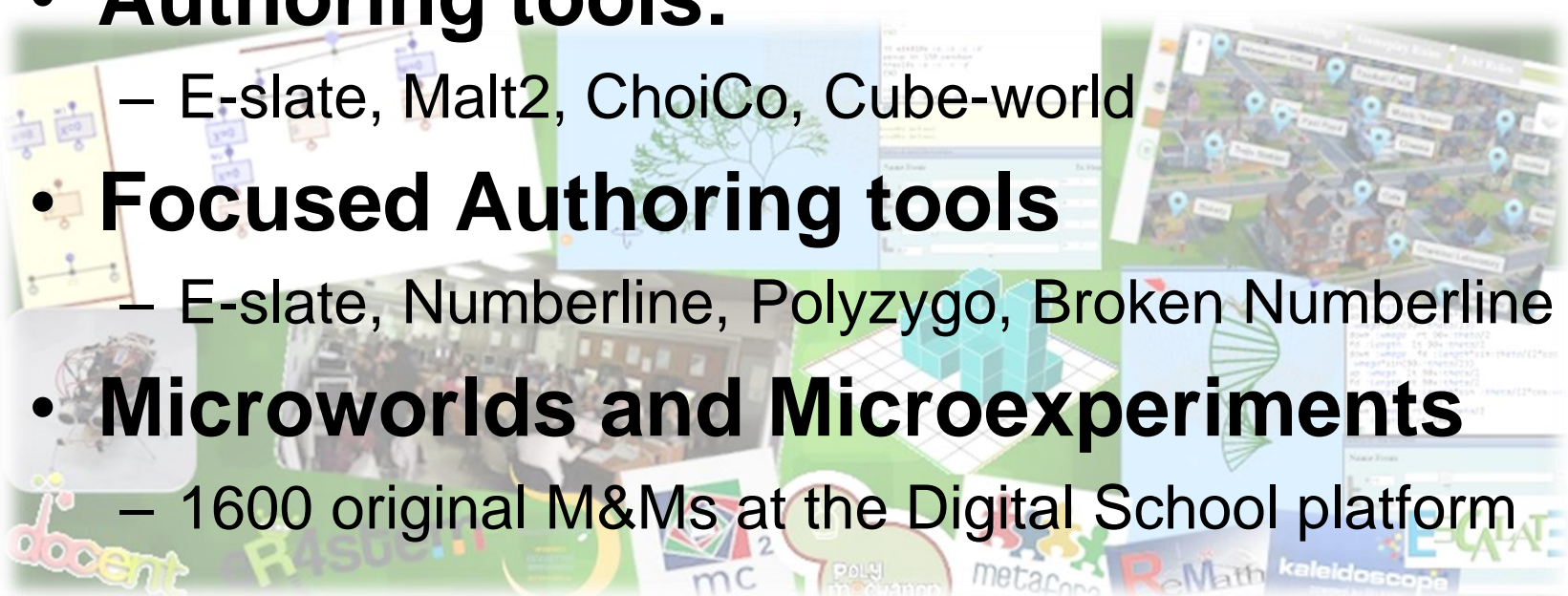
- **Authoring tools:**
  - E-slate, Malt2, ChoiCo, Cube-world
- **Focused Authoring tools**
  - E-slate, Numberline, Polyzygo, Broken Numberline
- **Microworlds and Microexperiments**
  - 1600 original M&Ms at the Digital School platform

Design Research

- Schools
- A-typical Education
- Technical Education
- Education in Citizen Science

Contributing to the production and refinement of theoretical frameworks for practices

- Restructurations & Conceptual fields

- Design: Half-baking and fallibility

- Boundary crossing for meaning making and creativity

Collaborating Institutes

- Berkeley
- MIT Media Lab
- UCL Knowledge Lab
- Univ Lyon
- Univ Utrecht
- Diderot Paris 7
- Uni Bergen
- Linnaues University
- University of Barcelona
- Technical University of Vienna

Participation to NoE and Science Unions

- Kaleidoscope – TELEARC http://www.noe.kaleidoscope.org/telearc

- Constructionism https://www.constructionismconf.org/

- ETPE https://www.etpe.gr/

- ICME https://www.mathunion.org/icmi

- Enedim http://www.enedim.gr/

Schools – research

- 2nd experimental junior high school of Athens
- Karditsa, Kaissariani (primary school), Ionidios junior high school, 7th senior high school of Trikala, Technical school of Ag. Anargiri
- College of Psychico
- Hill School
- Karavana School
- 4th Primary School of Larissa
- Kalloni Primary School of Lesvos

Recent Publications

- **Kynigos, C. (in press) Half - baked Constructionism: The Challenge of Infusing Constructionism in Education in Greece** *Constructionism in Context: The Art, Theory, and Practice of Learning Designs* **Nathan Holbert, Matthew Berland, and Yasmin Kafai, MIT Press**

- Kynigos, C., Essonnier, N., Trgalova, Y. (2020) Social creativity in the education sector: The case of collaborative design of resources in mathematics, *Journal of Creativity*

- Kynigos, C., Grizioti, M. (2018) Programming Approaches to Computational Thinking: Integrating Turtle Geometry, Dynamic Manipulation and 3D Space, *Informatics in Education, 17.2, Vilnius University*

- Kynigos, C., Yiannoutsou, N. (2018) Children Challenging the Design of Half-baked Games: Expressing Values through the process of Game Modding, *International Journal of Child-Computer Interaction*, Volume 17, September 2018, Elsevier, Pubs., 16-27.

Contact us

- The lab
- http://etl.eds.uoa.gr

- Our authoring tools:
- http://etl.ppp.uoa.gr/malt2
- http://etl.ppp.uoa.gr/choico