European Research Teams

TELMA
Technology Enhanced Learning in Mathematics

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European Research Team

TELMA

Transversal Activities
Special Research Groups
Joint executed research projects
European Research teams
European Research Team

TELMA

Technology Enhanced Learning in Mathematics

CNR-ITD, Genova, Italy
ETL, Athens University, Greece
IMAG-Metah, Grenoble, France
DIDIREM, Paris VII University, France
Math Dept., Siena University, Italy
IOE-Knowledge Lab, London University, UK

http://telma.noe-kaleidoscope.org/
Background

Each team:

- Has its specific research focus
- Refers to different theoretical frameworks and work methodologies
- Has developed or used different ITC-based tools for mathematics learning

➢ It is important:
  - to promote a synergy among different groups and research approaches to find similarities and to clarify differences
  - to develop some new constructs and methodologies to compare and to promote networking
• **Content**
  
  – Analysis of how different theoretical frameworks can affect the use of technology in educational contexts for mathematics
  
  – Analysis of the representations and contexts that the research teams refers to in design and development of ICT-based learning environments and in learning research
  
  – Analysis of a set of selected ICT-based tools for mathematics education
Cross-experimentations project
Each TELMA team experimented, in real classroom settings, an ICT-based tool it had not designed but that was developed by one of the other teams

• Guidelines
• Classroom experiments
• Analysis of outcomes

Analysis of a set of selected ICT-based tools for mathematics education

• A methodological tool for the analysis of math educational ICT systems
• The cross-experimentations project

Main ideas
- Different research units run similar experiments addressing jointly elaborated research questions within their different contexts and national school cultures
- Same topics and age levels addressed
- Joint developed methodological tools (didactical functionalities notion, meta-language of concerns, guidelines, interviews, etc.)

General Aim
- To acquire a better understanding of learning environments implemented using tools designed under theoretical frameworks and in contexts different from those of the experimenting teams
• Analysis of a set of selected ICT-based tools for mathematics education
  • Get a global view of the state-of-the-art educational software for arithmetic and algebra
  • Position computer systems developed by TELMA teams within the landscape of existing systems
  • Development of a methodological tool (grid) for systems analysis

Systems
  • “outside TELMA”: AnimalWatch, MathExpert, Mrs Lindquist, Math Teacher, Cognitive Tutor, ActiveMath, T-algebra
  • “inside TELMA”: Aplusix, ARI-LAB2, E-Slate
REMATH project (IST 4-26751):

- To contribute to the integration of theoretical frames for learning with digital media

  - Development of six state-of-the-art dynamic digital artefacts (DDA) for maths education
  - Development of scenarios for the use of these artefacts in school;
  - Empirical research involving cross-experimentation in different educational contexts
TELMA perspectives

TELEARC Association (Technology Enhanced Learning European Advanced Research Consortium)

- **An integrated research community** in the field of mathematics education with technology with joint scientific results such as papers in Journals, Conferences and Workshops

- **An updated website** with information, documents, and bibliography for people interested in mathematics education with technology

- **Agreements among teams** to carry out scientific activities of mutual interest such as: supervision of PhD thesis; development of research projects; scientific exchanges.

- Maintenance of **links with Mathematics education community** at large (ICMI, CERME, IFIP)