Computational Teaching of Computational Thinking

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Grand Challenge

Facilitate the Teaching of Computational Thinking

Observation

- Informatics is now officially in the curriculum
- 300,000 trained teachers are now requested

Problem

- Lack of culture in Informatics among Teachers
- Many resources, but hard to navigate and choose from

Proposed Solution

Toward a Technical and Social Ecosystem

- Shared infrastructure; Community of practice

Long-term Societal Benefits

Informatics for all is unavoidable

- Empowerment, Economic impact, ...

From Personal Initiatives to Institutionalized Teaching

- Sustainable, Accessible throughout the Territory

Strengthen Scientific and Technical Culture

- Because our world becomes digital
- Specifically important in Primary Education

Action Plan

- Action-research with the actors (learners, teachers, designers)
- Infrastructure for informatics education
  - Interactive resources (vs ≪ flat ≫ resources)
  - Support for highly interactive environments and user interactions
  - Interoperability between existing services, (meta)-data
  - Communities of practice
- Analytics and tooling for
  - Teachers: monitoring, orchestration, regulation
  - Learners: cooperation, collaboration, performance awareness
  - Designers: good practices, feedback, re-engineering
  - Researchers: help to evaluate uses

Grand Challenge Evaluation

Success Indicators

- Classical platform usage measurement
- Actuate the curriculum in practices
  - Evaluate the "informaticness" of the national examinations
  - Observe future strengthening of the curricula

SWOT

- Strength: We have practitioners' experience
- Weakness: We have little experience in CSE Research
- Opportunity: Clear historical opportunity
- Threat: Inertia; Curriculum weakening; Scarce resources

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