Technology Enhanced Learning and European Research

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Overview

• The evolution of Technology Enhanced Learning
• The role of the research community (and of NoEs) in developing a research space for TEL
• TEL and 21st century learning
  – Key issues and trends
  – Emerging research baseline in FP7
  – Problems to overcome
**Evolution of Technology Enhanced Learning**

- Research interest shifted from LMS, content delivery, brokerage, simulations for training as these became mainstreamed eLearning
- Focus on advancements in learning & solutions that can motivate and engage learners and teachers in new ways
- Takes us beyond eLearning – but back to learning
- Focus on:
  - role of ICTs in learning process;
  - Understanding interactions between learners and systems, between groups of learners, and between learners and teachers or mentors
  - Envisaging new pedagogical approaches

Intrinsically cross-disciplinary

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**Networks of Excellence and Technology Enhanced Learning in Europe**

- Structuring the cross disciplinarity
  - Bringing in researchers from pedagogy, from cognitive and behavioural sciences, from organisational and management sciences, from different computing science domains, from neuroscience
- Creating communities of researchers
  - Go beyond ad hoc meetings to sustainable new (virtual) groups
- Foster excellence
  - Visibility to and recognition of European research globally
  - Creating leadership
Networks of Excellence and Technology Enhanced Learning in Europe

- Ongoing development of the research agenda
  - research community built
  - responsive to changing environments
- Outreach – to other stakeholders
  - Industry as stakeholder in use of the research and the European learning industry
  - Educational policy makers
- Foster concept of TEL as a research domain capable of attracting and sustaining funding
  - Links to national funding programmes

Networks of Excellence in FP7

- NoEs in FP7 – a reminder
  - Aim is not the research but the durable integration of research capacity
  - If the objectives are defined in terms of specific research problems then other funding schemes should be used
  - No duplication of FP6 funded integration
  - Could support the consolidation / sustainability of existing work – but this may not need an NoE to take forward
  - In context of FP7 research objectives, more limited scope for focused NoEs in new or previously overlooked areas
  - Implication – size and funding of NoEs will be much smaller than in FP6
The Commission’s agenda for TEL research

• Needs of business and individuals to acquire knowledge, skills and competences faster and more effectively in the workplace

• Individualisation of learning – beyond sequencing of content to sequencing learning activities; tailoring pedagogy, curriculum and learning support to situation and abilities of individual learners

The Commission’s agenda for TEL research

• Engagement and creativity – technologies are opening new ways to support motivation and empowerment of the learner (serious games, with immersive environments, strong narratives, storytelling and virtual characters)

• Inquiry and problem based learning – as better ways to teach science and maths; but also collaborative problem solving as stimulus to innovation and creativity.
The emerging FP7 portfolio

• 12 projects across the Objective, balanced between Digital libraries and learning (out of 191 submissions)
• Learning – have negotiated 2 IPs and 4 STREPs
• Greater focus on responsive environments and mid-term goals, than on intuitive systems
• Strong continuity with FP6 research (and projects!) – NoEs have been influential

FP7 results: predominant topics and themes

- Technologies: (serious) games, semantic tools, ontologies, modelling, social software (tagging, Wikis), mobile and other devices
- Learning: different pedagogical approaches but move towards increasing adaptivity & merging pedagogical scenarios
- Personalisation features strongly: from FP6 and new proposals there is an ongoing process of understanding personalisation in educational and learning settings
- Autonomy of learner - empowerment
- Learning and workplace: continuity of FP6 on embedding learning in organisational practices to develop learning of individual and of the organisation
- Learning and creativity – in support of innovation
FP7 results

- Constructivist approach to science learning
  - adaptivity, learner as creator, engagement, guidance (by tutors/teachers)
- Personalisation and adaptivity
  - new tools interfacing with existing infrastructures and LMS
- Theories, methodologies and technologies for game based learning
  - focus on learning science, adaptivity, story telling and engagement
- Workplace – learning
  - Embedding learning more seamlessly in work processes and KM systems
- Adaptivity and guidance - using natural language technologies

Innovation and creativity – in product development

The problems we have to overcome

- **Credibility** – explaining why we still need to work on an agenda that has seemingly been around for many years (cf. eLearning expectations)
  - Flexibility (learn anywhere, anytime, self paced)
  - Improved collaboration and peer support
  - Personalisation and customisation of learning material
  - Improved monitoring and management
  - New forms of knowledge construction
  - Improved retention
  - Faster acquisition on competencies
- Reinforce wider understanding of technology enhanced learning – advocacy remains an issue
The problems we have to overcome

- Support for technology transfer and take-up – moving from research to innovation
- Validation – showcasing, best practices, supporting CoPs
- Need to build a consolidated body of evidence of the research results – what works, what doesn’t, starting with the input from individual projects.
- Mobilising a more extended research community – “consolidation round excellence” can turn to stagnation
- Overcoming barriers for new entrants – success breeds success making it difficult for new proposers to break into the system

Conclusions

- There is a recognised TEL research community, which is increasingly multi-disciplinary, binding previously disparate research interests
- Future – need to continue integration of other disciplines, research areas
- Importance of building the knowledge base – so we have the body of evidence for the future
• Call 3 Information Day, Luxembourg 18 December (for Technology Enhanced Learning)
• Registration closes 2 December
• All information on projects etc: http://cordis.europa.eu/fp7/ict/telearn-digicult/telearn_en.html

And Thank you for your attention