

EDEN Open Classroom 2011Q GOOD PRACTICES PROPOSAL SUBMISSION

We invite you to prepare an abstract following the proposed template below. The abstracts of accepted Good Practice proposal will be disseminated to the wider EDEN Open Classroom 2011 community and included in the conference proceedings. Hence we invite you to prepare the abstracts with care.

A proposal to present a Good Practice should contain the following information:

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| Good Practice Title | The Innovation Management eCourse: meeting the 21st Century entrepreneurship skills in Europe |
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| Reference point: Identify the framework under which your didactic approach was identified as a “good practice” | Embedding innovation and adaptability in teaching and learning outcomes Transformational strategies to meet a radically altered external environment |
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| Subject area of the good practice & relation with the curriculum (if any) | Entrepreneurship Innovation |
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| Education Level | <input type="checkbox"/> Primary education <input type="checkbox"/> Secondary education <input checked="" type="checkbox"/> Adult education <input type="checkbox"/> Other, please identify _____ |
|------------------------|--|

Keywords from the list of topics in the Conference Call (up to 6)

Work based learning, lifelong learning, collaborative learning, autonomous learning, Distance and e-learning methodology and pedagogy

Leader/presenters' information

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Presenters' background/ brief bio and expertise related to the workshop

Sophi Danis (Sofia Ntani) has great experience in online learning design and tutoring for creativity and innovation as well as designing and developing educational and social web platforms. She is also an award winning graphic designer participating in international graphic design competitions. She has worked in pilot programs (beta tester), managing online communities, and coordination Technological Systems and Computers in working places. She is a graduate of Ziridi Schools and the University of Athens in Greece. She has worked on several research and innovation projects for the company Intelligenesis, and was responsible for Information Technology for Olympic Airways / Olympic Airlines to London, Great Britain. She is the Intelligenesis' CEO.

Dr. Niki Lambropoulos (Niki Lampropoulou) is an experienced HCI researcher, consultant, e-learning expert, HCI Education designer, and online communities' manager. She is proud to be a Marie Curie fellow. Her interest fall in the field of Collective Intelligence, translated into Collaborative E-Learning in Computer Supported Collaborative Learning; Idea Group Management for Distributed Leadership; and User Innovation Networks in Innovation and Open Innovation. She was born in Ancient Olympia, Greece. She holds two BAs and a Diploma in Education from the University of Athens, Greece and an MA in ICT in Education from the Institute of Education, University of London. She finished her PhD at London South Bank University, UK. Since 1989 she has worked as a Greek language and ICT teacher, ICT

coordinator, researcher, consultant, PRINCE2 Project Manager and Human-Computer Interaction Education research fellow. She currently works at the Office for European Projects at the Regional Directorate for Primary & Secondary Education in Western Greece. Also she is a consultant at Intelligenesi and an HCI Education research fellow at the Wire Communications Laboratory of the Electrical and Computer Engineering Department at the University of Patras. She enjoys working collaboratively over the Net and she has published widely in her fields of interest.

Summary of the Good Practice

Innovation Management eCourses are intensive workshops offered by Intelligenesi in two forms: a simplified version free to everyone and an advanced one for MSc students (Moodle2 at <http://globaloperationsdivision.net/e-learning/>). In these 5 day long eCourses students enroll the first day; they create teams with assigned roles based on role-play, and assign their preferred location on earth. Then they study the educational material and work on the related activities and tasks scripted for each day.

Combined pedagogies accelerate students' daily active engagement via different learning styles anchored in Project-based Computer Supported Collaborative eLearning (CSCeL). All team-based activities are designed to promote the innovation cycle in practice by supporting students' idea generation and implementation in actual project proposals for real funding opportunities. The objectives, daily activities and tasks are macro- and micro- scripted to promote students' improvisation depending on their field of interest and practice i.e. not over- or under-scripted. In this way the e-tutor orchestrates the learning activities and intervenes only if needed to support the quantity and quality of group interaction and coordination. Also the transactive time and cost is reduced to minimum. Student evaluation is based on 3 different areas: critical thinking (30%, 6 marks), real life team project (30%, 6 marks) and an online questionnaire (40%, 8 marks).

Unique integrations of pedagogical approaches are implemented as tools in Moodle (<http://www.intelligentq.net/e-learning/>) and course evaluation. Three sets of tools support motivation, self-reflection and evaluation connecting educational tasks with students' activities. They enable students' self-regulation and enhance their shared motivation. The tools are HySynTag, Participation Avatars and the Visualisation Interaction Tool. Hybrid Synergy is a five-level, non-linear, collaborative creativity analytical framework for micro-scripting that allows the discussion participants to attach qualitative metadata to their posts via visualising their cognitive levels. The Participation Avatars represent the individual's level of activity, this is low, medium and high which is calculated on the highest poster's number of sent messages. The Visualisation Interaction Tool produces a real time sociogram for each discussion forum. It is based on Social Network Analysis (SNA) depictions that can be used to visualize communication between a set of actors. The sociograms consist of nodes (the actors of study) and its relations (the strands between actors).

In conclusion, the Innovation Management intensive 5-days e-course has proved to accelerate students' learning as they implement their newly acquired knowledge and skills directly into practice. The enhanced Moodle2 forums support learning scenarios and have been proved effective for formative feedback supporting self-regulation, critical self-reflection and monitoring one's performance and autonomous learning. Consequently they can help the tutors to deal with the diversity in e-learning environments to support both individualistic and social learning in CSCeL.

Background

The Innovation Management eCourse is designed to bend the e-learning time based on scripted team- and project- based collaborative learning activities. The acquisition of knowledge and its relation to students' competencies and implementation as knowledge in action has been suggested to be the major change in education in the 21st century. Nowadays computers and the Internet are more integrated in education than ever before. Educational organisations are forced to support a new wave of networking and collaboration directed by the Web 2.0 applications which fused the educational borders with the real world. The use of technologies in the classrooms is increasing and converging as blended learning replace strictly classroom teaching hours. In both modes, student engagement is central to learning and is evident in appearance of excitement, enthusiasm and commitment to their studies as hard work and investment on learning. Also evaluation in CSCeL needs to address the students' knowledge and skills acquisition on both an individual and social basis. For this reason the new evaluation methodology is based on e-tutor's assessment as well as evaluation supported by enhanced Moodle2 tools.

For the aforementioned reasons, project based Computer Supported Collaborative Learning (CSCeL) is proven to be the preferred method of study to accommodate the contemporary needs of society towards the need for students' entrepreneurship and innovation knowledge and skills. Because CSCeL is inherently complex there was a need for new tools and methods for observing and analysing interactions to increase understanding of the collaborative learning social mode where learners are actors i.e. they co-construct the information space and their learning context.

Objectives

Innovation Management objectives for good practice are the following:

- Promote entrepreneurship and innovation knowledge and skills in action within authentic environments
- Recommend a pedagogical approach to reduce the transactive cost for eLearning which accelerates team-based learning by condensing a semester in a week
- Support the importance of creating sense of belonging in a working group towards a specific purpose for a specific time span
- Advocate the orchestration of group convergence of activities coordination and knowledge team building
- Promote synergy for direct fit between social needs, working demands, educational tasks and the methods and tools chosen to pursue it

Project based Computer Supported Collaborative eLearning (CSCeL)

Project-Based Learning (PBL) was selected to support the team projects related to today's implementation context. PBL facilitates collaborative learning as the students are motivated and engage to develop their natural talents in design, problem solving, decision making, and evaluation and presentation activities. Such learning activities facilitate the user-generated

context to be the backdrop for the development of new ideas and solutions via collaboration. Teasley and Roschelle provided a clear distinction as tasks are divided between participants: “each person is responsible for a portion of the problem solving”. However, an individual may be both cooperating and collaborating at a task, and be unaware of their contributions. Based on this distinction, the students applied different roles within their team.

Collaboration Scripts in CSCeL

In order to ensure idea generation, the learning approach was anchored in (a) individualistic/constructive and collaborative learning, and (b), the multidimensional role of the e-tutor as moderator and orchestrator of activities, as well as being a model him/herself for the vicarious e-learners. This process suits the CSCL scripts; the ‘script’ is the pre-description of the learning activities for the learning context organization and knowledge convergence. A script describes the way students have to collaborate: task distribution or roles, turn taking rules, work phases, deliverables, etc. There are two types of scripts, micro- and macro-scripts: (a) Micro-scripts are dialogue models, mostly argumentation models, which are embedded in the environment and which students are expected to adopt and progressively internalize. We used the Hybrid Synergy argumentation model; and (b) Macro-scripts support pedagogical models, i.e. they model a sequence of activities to be performed by groups. An example of the macro-script is the pedagogical model for the elearning design. We used Participation Avatars and the Visualisation Interaction Tools to support students in depicting and reflecting on their online activities.

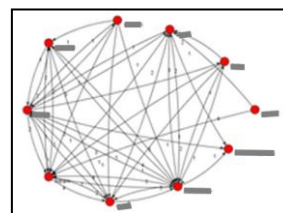
Tools to support CSCeL Collaboration Scripts

Re:[Explore] f
 Re:[Idea] Re: Re:
 Re:[Idea] Re: Fantasti
 Re:[Idea] Re: Re:
 Re:[Evaluate] Re:
 Re:[Idea] Re: Re:
 Re:[Explore] f
 Re:[Other]
 Re:[Idea] Re: Fantasti
 Re:[Explore] Re: F
 Re:[Explore] f
 Re:[Explore] f
 Re:[Explore] f
 Re:[Explic
 Re:[Idea] Re: Fantasti
 Re:[Idea] Re: Fantasti

The HySynTag tool works as a micro-scripting tool; the students visualise their cognitive levels by tagging their post as: Inform, Feel, Explore-Idea, Evaluate, Summarise and “Other” when the five levels of Hybrid Synergy do not seem to cover their argumentation. Finally, they have the opportunity to post something without tagging ([-]) either because the available tags are not suitable or because they do not want to tag their messages. The tool, placed at the bottom of the “Reply” message, can also aid metacognition. The overall view of the thinking levels in one discussion can enhance the spiral and non-linear creativity mobility allowing the “Aha!” experience to occur.

3 AM X
 AM X
 04:47 AM X
 AM X
 ber 2009, 04:59 AM X
 ber 2009, 05:08 AM X

The Avatars represent the 3 active participation levels, low, medium and high. These levels are calculated by the number of posts sent by the most active e-learner. The Visualisation Network Tool is anchored in Social Network Analysis and represents



the nodes between the e-learners (actors).

Course Evaluation

The students and course evaluation aid at the quality assurance of the course and its objectives and targets for objectives, team participation, individual and team learning oriented evaluation. The e-tutors provide individual and team feedback at the end of each day during the course. The final students’ evaluation is based on three main categories in a total of 20 marks: Groupwork Critical Thinking Assessment (30%, 6 marks), Group Real Life

Project Product & Presentation (30%, 6 marks), and Individual Questionnaire on Innovation Management (40%, 8 marks). The team project evaluation is based on the tutor's evaluation (15%, 3 marks) and the overall teams' evaluation by the students themselves (15%, 3 marks). As an example, the IT Project proposal evaluation criteria are the following: (a) Usability as ease of use, (b) Accessibility as ease to access from different target groups, (c) Learnability as easy to learn to use the interface, and additional issues such as Eco-friendly as Green Computing, ethical investment, social innovation or other. Also, the IT Project group presentation and group evaluation criteria is based on Delphi technique. Other than the recommendations to their peers, the students also evaluate the other teams' project presentation with the following criteria: enthusiastic about their idea, slide design, presentation structure, quality of presentation, and if they worked as a team. (The course evaluation and results is presented in the related section.)

In conclusion, the pedagogical and methodological approaches with the tools used supported the direct fit between social needs, working demands, educational tasks and the methods and tools chosen to pursue it.

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| Duration and frequency of implementation | 5 days eCourse: The students acquire different knowledge and skills each day providing a building block for the next. The last day is the actual team coursework developed and presentation as well as individual evaluation and assessment. |
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Results and Evaluation

For the course evaluation the measurements and data analysis are anchored in quantitative, qualitative and social network methods: students send a self-reported questionnaire; the Non-Negative Matrix Factorization algorithm is run on the text in combination with qualitative analysis; the outcomes from the tools implemented within the forums; and a team work skills questionnaire (Lambropoulos et al., 2011). The most quoted students' comment is that they work hard for one week however they enjoy working intensively in teams. When comparing the results from the algorithm and the argumentation analysis from both the HySynTag and the e-tutors' own using Atlas.ti it appears that the algorithm can provide evaluation for the macro-script and the 'manual' analysis for the micro-script. This means that the algorithm is able to acquire the most used words from great number of data and verify the success of the macro script and thus the success of the CSCeL pedagogical design. The algorithm alone cannot provide enough information from a cognitive and psychological perspective. The results indicated that the pedagogical design, methodology and associated tools can be useful in supporting collaboration for idea generation and innovation management in intensive eCourses.

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Innovative aspects

- **Implementation of knowledge and skills in action** to promote and support sets of skills needed for the 21st century following the national and European directives for the Digital Agenda 2020.
- **Compact a semester's course in a week** by implementing a pedagogical approaches to reduce the transactive cost for eLearning and accelerate learning anchored in students' own interests in authentic working environments.
- **Promotion of the sense of belonging in a group** by intensive teamwork and role play towards a specific purpose by converging activities coordination and collaborative learning during an intensive eCourse.
- **Implementation of a direct fit** between a social need for development, innovation and entrepreneurship, and working demands as well as educational tasks and the methods and tools chosen to pursue it.
- **Creativity, entrepreneurship and innovation skills enhancement** for the 21st century *for all* not only the experts.

Recommendations to other institutions/organizations

- **Develop eCourses Networks:** A wide range of high quality interconnected, short and intensive eCourses can be offered to students, apprentices and training employees on demand following the real life requirements and changing needs.
- **Support Different Learning Styles:** Learning paths differ for each student; scripting needs to be flexible and adaptable enough in order to support teamwork as well as individual students in eLearning Management Systems.
- **Promote Team-projects:** The team projects need: **(a)** team culture, the leverage of expertise of others based on everyone's expertise and advance on others; **(b)** shared desire and meaningful ideas to each member; **(c)** each member's significant contribution; **(d)** a wide spectrum of expertise; and **(e)** students' full brain utilisation and imagination in a very short period of time.
- **Design for Learning Apps:** Tools and applications in the purpose of learning is best to derive from user/learner requirements anchored in solid pedagogical approaches implemented in everyday educational practices; otherwise the tools will not be used
- **Support Students' Future Skills:** Educational organisations need to develop their learning objectives, strategies and targets by planning from the future backwards rather than applying methods from and for the past.

Optionally, please let us know whether the Good Practice has created partnerships:

Yes No

If no, please specify whether presenters are interested in future partnerships

Yes. Type of partners desired: *Organizations and individuals interested in Innovation Management workshops (a simplified free for everyone or as part of their MA and MSc curriculum).*

No

Acknowledgement: This template has been adapted from the 5th International Barcelona Conference on Higher Education template for Good Practices proposals