

WORKSHOP ON SOCIO-CONSTRUCTIVIST SCENARIOS WITH THE INTERNET FOR SECONDARY AND HIGHER EDUCATION

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ABSTRACT

While one can observe a boom of interest for e-learning in the last 2-3 years, current e-learning systems rather focus on content delivery, as opposed to supporting students to solve more complex and open-ended tasks. We are convinced of the effectiveness of socio-constructivist pedagogies in education and struck by the apparent lack of widely deployed supporting tools. This workshop aims to orchestrate a fruitful exchange of ideas, research and practices on socio-constructivist education scenarios using Internet between participants.

INTRODUCTION AND PROBLEM STATEMENT

Currently, many variants of web-supported pedagogies exist, e.g. transmission of contents by teleconferencing or virtual libraries, web-based instruction, learning by apprenticeship in virtual environments, pedagogical work flow scenarios. The pedagogical use of Web technology started out in 1993 with early adopters using the web for innovative project-based "teaching and learning". On the other hand, web-based training systems inspired by traditional CBT software started appearing on the market and form the core of today's so-called "Learning Management" or "E-learning" systems. While these systems anchored in the behaviourist tradition are making interesting progress as far as modularity of contents and standardization are concerned, they do not fundamentally seek to improve pedagogies by supporting rich socio-constructivist scenarios. As Gilroy (2001) pointed out: « The emphasis of most e-learning programs to date has been on the accumulation, organization, and delivery of content. This is manifested in all aspects of how the new sector has been organized: in the business and operating models of the service and technology providers; in the design and organization of the content and learning management systems that are now widely used; and in the investments venture capitalists, publishers, universities, and corporations have made. » We define "socio-constructivist learning" in a very broad sense. First of all as an understanding of learning that stresses the importance of knowledge construction based on previous knowledge and interaction with the social environment, e.g. theories that have grown out of constructionism (Piaget) and socio-culturalism (Vygotsky). Second as a set of pedagogies that use strategies like project, problem, case-based learning and/or working within authentic contexts. While there are important differences in thought and practice there are a few common denominators in socio-constructivist pedagogies. E.g. Wilson (2000) isolates three core principles for effective use of the Web for learning:

1. Provide access to rich sources of information.
2. Encourage meaningful interactions with content.

3 Bring people together to challenge, support, or respond to each other.

While (1) is being dealt with the Internet itself, (2) and (3) usually need orchestrations by a teacher. Dillenbourg, Baker, Blaye & O'Malley's (1999) survey of empirical research reveals that collaborative learning is not per se an effective learning method. Greening (1998) makes a similar point for problem-based pedagogies. Effectiveness is not guaranteed if the teacher simply asks students to do projects and to learn together. In order to achieve effectiveness, use of structured scenarios is needed. A scenario is a sequence of phases within which group members have tasks to perform and specific roles to play. While teachers can regulate and orchestrate complex scenarios with very little technology the effort can soon become cumbersome. In addition, more advanced functionalities like visualizations of student activities can simply not be done without the help of technology. In other words, we need educational software less to deliver course-ware (even interactive one) but rather to support students to solve more complex and open-ended tasks. While there is an interesting number of non-behaviourist research software and while constructivist scenarios are quite popular (Wilson & Lowry, 2001), they are not supported by the same amount of technology as the scenarios inspired by more traditional instructional design are (Reigeluth 1983). Our current work (Schneider et al. 2002b) aims to provide affordable support for innovative scenarios described by various socio-constructivist schools of thought, test, enhance and enrich them.

WORKSHOP GOALS AND ORGANIZATIONAL FRAMEWORK

Workshop goals

- Exchange of ideas and practices on socio-constructivist education scenarios using Internet.
- Formulation of a few recommendations.
- Creation of a community of interest in the area.

Conceptual framework

The organization of a workshop on socio-constructivist scenarios can be considered as a learning event. We therefore ground its orchestration on socio-constructivist principles and also will use Internet technology to enhance its productivity.

The workshop's three-step organizational framework is inspired by Laurillard's (1995) Conversational Framework which requires four steps (discursive, adaptive, interactive, reflexive) to turn learning into a shared information issue.

1) *Position statement*: A first discursive pre-workshop step lets each participant express him/herself on each workshop topic in order to gain a representation of his initial state of knowledge.

2) *Comments and re-articulation*: This interactive pre-workshop step aims at commenting and providing feedback to participants' initial input. It allows participants to *reflect* upon their initial positions and to *adapt* and *re-articulate* them.

3) *Synthesis*: The workshop day itself is conceived as a collective *reflective*, *adaptive* and *re-articulation* step and it should lead to some consolidated representations and competences, some of which shared by all participants.

To support the above mentioned three steps process, a Computer Supported Collaborative Work (CSCW) tool has been designed. Development of this Internet portal module and

associated workshop organization are considered as an embedded mini-project and participants are invited to provide us with feedback on their design. After the workshop, the software will be made available under some public license.

Workshop questions

The workshop will address the following questions.

1. What is a socio-constructivist scenario ? Can you give a good example ?
2. What are the specificities and potentials of blended Internet-based scenarios ? Can you give a good example ?
3. Conceptual tools - state of the art ? what is your favourite framework ? What are research priorities ?
4. Tools - state of the art? What are technical R&D priorities ?
5. What are the major bottlenecks (pedagogical, technical, political, ...) ?
6. Recommendations.

WORKSHOP ORGANIZERS MOTIVATION

The workshop organizers are members of TECFA, a Educational Technology unit at the Faculty of Psychology and Education, University of Geneva, Switzerland. They share a common interest in socio-constructivism and the exploration of supporting technology what they coin "Community, Content and Collaboration Management Systems" (C3MS) (Schneider et al. 2002a, 2002b). Currently, there are several projects:

One, is under the framework of a European project called SEED ("Seeding cultural change in the school system through the generation of communities engaged in integrated educational and technological innovation"). In the framework of this project, a bi-directional catalogue has been written that includes both pedagogical scenarios and C3MS "bricks" that need each other to implement socio-constructivist scenarios. In order to enrich the open source existing bricks with more educational ones, several ones have been developed by the TECFA-SEED development team. The workshop module described above is an other addition.

Another one is the PhD thesis of Paraskevi Synteta (2002) about the exploration of C3MS technology to improve Project-Based Learning (PBL) and includes the development of a system (both a method and a tool) to scaffold PBL. The method is a more structured way to implement the PBL model and the tool is a C3MS portal configured and adapted to this method. In particular, a specific and complex C3MS "module" has been implemented that supports group work, project specification and a tutors' cockpit. You can access the first case study online: <http://tecfaseed.unige.ch/staf18iris/>. A second PhD thesis from Barbara Class, is about the exploration of a Tutoring Support Structure (TSS) within a Student Centred Learning Environment, actually a C3MS used as such. This Tutoring Support Structure acts on three levels: institutional, material and cognitive and its goal is to question and increase tutoring efficiency in the context of distant education. As far as C3MS technology is concerned, this research addresses questions regarding relationships between C3MS tools and TSS modules. The portal is accessible online: <http://tecfaseed.unige.ch/uticef/>. Additional projects are underway as master thesis projects.

The TECFA SEED team runs a center for exchange and collaboration on socio-constructivist teaching & learning with the Internet. It will also be used to diffuse results of the above

projects and to provide some limited form of support. The portal is open to any interested contributors at <http://tecfaseed.unige.ch/door/>. Therefore, the goal of organising this workshop was not just to meet and exchange with other people active in the domain of socio-constructivist scenarios and educational technologies, but also to lay the groundwork for an extended virtual community.

PRACTICAL INFORMATION

This workshop is organized in three phases: (1) pre-workshop position statements regarding workshop questions, (2) pre-workshop discussion (comments and re-articulation) and (3) synthesis during the workshop day itself. More information is available at <http://tecfaseed.unige.ch/icnee03>.

Participants

The workshop addresses any person involved or interested in technologies at the service of education. The first 20 participants who electronically (through this portal) submit interesting position statements to workshop questions are admitted to this workshop.

Initial position statements (pre-workshop)

By May 18, participants are asked to join the TECFA Seed web portal and answer workshop questions through the workshop tool.

Discussion (pre-workshop)

By May 23, participants are asked to read each other's position statements, comment on them and react on received feedback.

Synthesis (workshop day)

In the workshop discussion session (May 28), position statements and comments will be discussed (about 30 minutes / topic) and we will try to formulate a few recommendation at the end of the workshop. The organizers will provide a discussion chair, a discussion synthesizer and a note taker. All materials produced will be made available through the workshop portal.

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