

iCamp – The Educational Web for Higher Education

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Abstract. iCamp is an EC-funded research project in the area of Technology Enhanced Learning (TEL) that aims to support collaboration and social networking across systems, countries and disciplines in higher education. The concept of an iCamp Space will build on existing interfaces and integrate shared community features. Interoperability amongst different open source learning systems and tools is the key to successful sustainability of iCamp. The content for this collaboration within social communities is provided via distributed networked repositories including, for example, content brokerage platforms, online libraries, and learning object databases. The innovative pedagogical model of iCamp is based on social constructivist learning theories. iCamp creates an environment for a new way of social networking in higher education that puts more emphasis on self-organised, self-directed learning, social networking and cross-cultural collaboration.

1. Introduction

iCamp has the vision to become the higher educational web in an Enlarged Europe of 25+ (Fig. 1.) [1]. We pursue the idea of gathering people (learners, facilitators, peers, etc.) into one common virtual learning environment. This virtual environment does not consist of a single software system, but is composed of various interoperable tools and platforms. Each element of this patchwork of open-source solutions and the entire space are compliant with an innovative pedagogical model built upon a social constructivist approach. This pedagogical model encompasses social networking, scaffolding for self-directed, self-organised learning, incentives, and cross-cultural collaboration aspects.

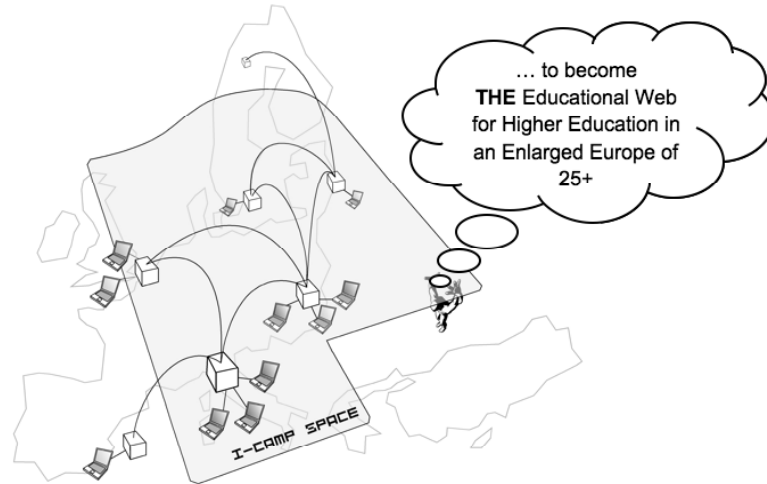


Fig. 1. iCamp Vision

iCamp validates its pedagogical model in combination with its interoperable system & tools portfolio – the iCamp building blocks. The efforts will result in guidelines on pedagogical and technical issues as well as in an open-source software package of constructivist learning tools.

In the future the users shall have seamless access through their own learning platforms and tools to services and artifacts offered by remote systems. The pan-European higher education network created by iCamp will comprise institutions, departments, units, and institutes, enabling their students and staff members to collaborate on a group or individual level.

2. Project Objectives

The main research objectives in iCamp are driven by pedagogical, technical and social challenges that aim to [2]:

- Investigate, develop and validate innovative pedagogical models for social instruction that support learners in achieving their learning goals in a self-directed manner and to establish social networks
- Provide a validated portfolio of constructivist learning tools that support these innovative learning models
- Provide an open virtual learning environment consisting of a network of learning tools, platforms and repositories
- Develop and describe open source code for connecting to the iCamp network and to provide interoperability amongst different systems

- Document and describe best practices to be derived from the validation trials for universities that may benefit from iCamp in the future
- Assess the actual and potential impacts of the iCamp network on Higher Education Institutions at different levels and from different perspectives

In the following sections we will describe the objectives in more detail.

2.1 Pedagogical Objectives

The pedagogical approach in iCamp starts from the constructivist learning theory with a focus on the learner and his or her way of constructing knowledge. The challenge that we still face with many learning environments today is that they have been developed following the transmission model of teaching and learning, where information is transferred from experts to novices. For quite some time educational researchers have predicted that this model fails to address the emergent demands of many modern workplaces [3], where individuals must flexibly adapt to a changing context and improvise appropriate tools and processes to deal with new domains or a rapidly growing knowledge base. Often, such learning occurs within informal, experiential contexts where knowledge and skills are contextualized and defined by a community of practice [4]. This type of learning can often be characterized as being inherently ill-defined, open-ended, and cross-disciplinary in nature, and thus needs to be independently governed and organized by the learner.

Preparing learners to become independent and self-organized requires a facilitative rather than a didactic mode of instruction. iCamp emphasizes social networking to meet this pedagogical challenge. This implies a new role and shifting in responsibilities for educators and learners. With the rapid development of ICT, educators can take over the role of mediators, mentors, and thus become facilitators. iCamp will provide tools and services to facilitate the mentoring and mediating role of the educators in an open learning environment as well as the development and practice of relevant competencies for self-directed learning. Likewise, the tools and services will allow for collaboration and peer mentoring processes amongst students.

The iCamp pedagogical model will be drafted out of four models that are all guided by the overall principle of self-directed learning. Scaffolding self-directed learning will support the learners in identifying their needs and in planning and carrying out learning projects in non-formal and informal settings. An incentives model shall provide new approaches to learning contracts combined with an easy access to distributed and networked resources, and personal and collaborative Web publishing tools. Weblog authoring has not only been identified as being instrumental for the formation of informal learning networks that are highly decentralized and self-organizing, it has also been documented that technologies, tools, and practices related to personal and collaborative Web publishing create a fruitful context for developing open, unstructured, and supportive learning environments.

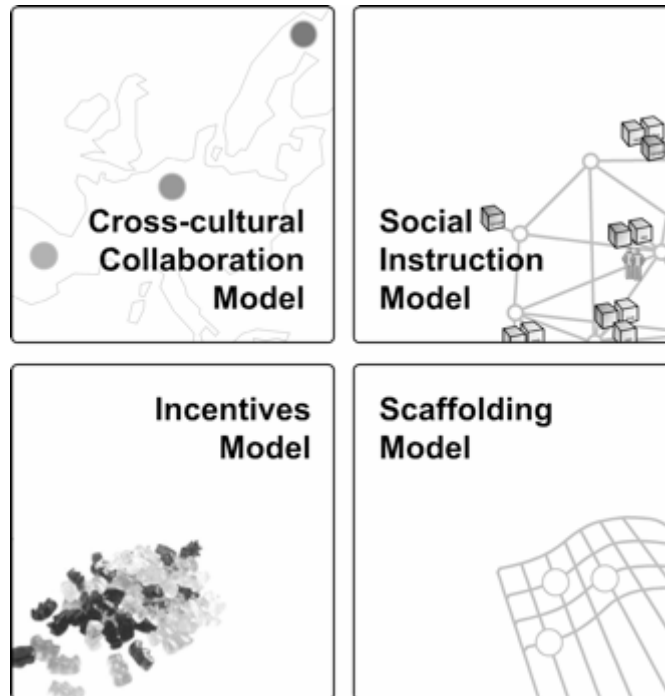


Fig. 2. iCamp Pedagogical Models

The collaboration amongst students across countries also implies cultural differences in learning and these have to be respected and supported by the learning environment. In this context, iCamp will perform an analysis of emerging personal and collaborative web publishing practices such as Weblog authoring in order to provide insights into the codification and standardization of cross-cultural and cross-disciplinary social networking and information sharing [5] in open, networked environments.

2.2 Technical Objectives

In terms of collaboration and communication iCamp will focus on the potential of new tools that support the creation of social networks amongst the students and other peers. These new tools shall support the personal preferences of the students.

iCamp will offer students as well as any academic staff access to large content repositories that go beyond the currently existing learning object repositories. Thus iCamp will bridge the currently existing gap between different repositories. The community members of iCamp will have access to a network of content repositories, from digital libraries to online bookstores. The challenge for iCamp is to further explore ways to retrieve important information from the deep web by extending the

Simple Query Interface (SQI) [6] and thus provide interoperability amongst the various systems.

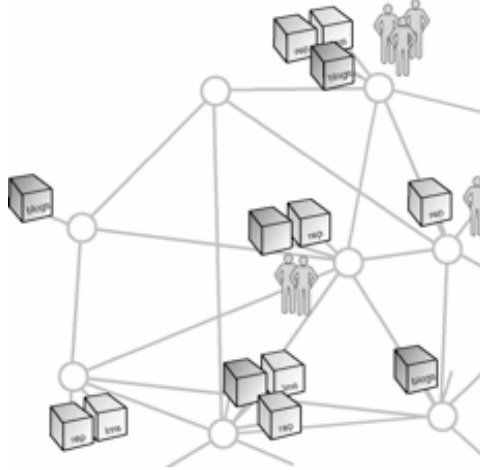


Fig. 3. iCamp Technical Infrastructure

iCamp will also develop strong interoperability amongst different open source learning platforms. With the developments of the last few years, the eLearning market has been (over-)populated with tools and platforms to support different types of learning communities with learning management, content management and communication tools. Currently, open source tools in that area are gaining more and more reputation and have had a high uptake especially in the NMS and AC. However, there is still a lack of interoperability between the various systems. Standardisation work is trying to overcome these interoperability problems, but has only done so to a minor extent. Here again, the SQI has started to tackle the problem by connecting different systems. So far, the SQI has been concentrated on querying for learning resources. The challenge for iCamp is to allow cross-collaboration of users amongst various eLearning systems and to facilitate the joint use of community features. In iCamp we are dealing with system, syntactic and semantic interoperability of heterogeneous information resources (digital repositories, learning service providers, learning resource brokers, iBlogs, etc.) to create the iCamp Space, an enlarged European educational network.

2.3 Social Objectives

In order to assess the potential of iCamp in supporting and fostering the creation of social networks the project will apply a social network analysis approach. The research questions tackled are related to the theory of relational/social capital. Social capital refers to the value derived from social ties or social networks [7]. Social capital has the potential to explain many phenomena in expertise sharing networks.

However, the concept still lacks good theoretical grounding. Based on such a theoretical foundation social research in the iCamp educational environments will be carried out to examine the explanatory power of a social capital theory in a cross-cultural setting.

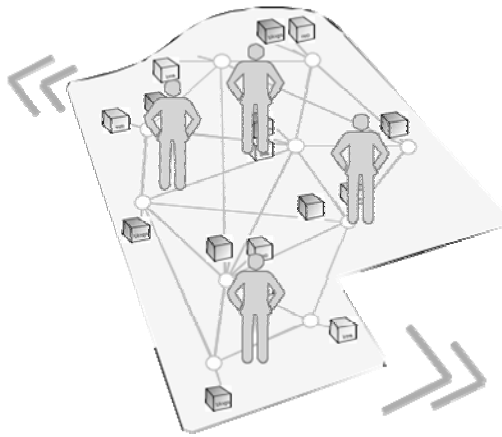


Fig. 4. iCamp Social Networks

The cooperation and collaboration of students from different countries in an enlarged Europe also implies social challenges related to cross-cultural aspects and diversity. Whereas the exchange of students and study visits across Europe are already a very common means for students to get in contact with other cultures, a virtual collaboration such as the one proposed by iCamp is still a challenge for diversity management. Social networks generally create social capital value through face-to-face contact among a limited number of people who share social norms and gestures. Broadening social networks online requires the development or invention of conventions and codes that support interaction. Social software generally codifies and structures interaction and limits the expression of the culturally specific. While this is often perceived as a disadvantage of mediated communication in comparison to face-to-face interaction, it might prove useful in the cross-cultural context of iCamp. It is the objective of iCamp to provide a careful exploration and evaluation of these aspects.

3. Conclusion

In conclusion, iCamp will strengthen the educational landscape in Europe and drive it towards a sustainable infrastructure. Since iCamp is not creating an additional eLearning system, but facilitates interoperability, a main advantage is that universities and students can continue to use and further develop their tools and services, while at the same time connect to other systems. In addition, learners and facilitators can practice and challenge a constructivist approach to learning in a mediated and

networked environment. The wide collaboration space envisioned by iCamp will facilitate up-take and deployment. iCamp will provide pedagogical guidelines as well as a software toolkit to ease integration into the iCamp Space.

References

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