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Seeding Cultural Change in the School System Through the Generation of Communities Engaged in Integrated Educational and Technological Innovation

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MULTI-DIMENSIONAL PROJECT SESSION

Seeding Cultural Change in the School System Through the Generation of Communities Engaged in Integrated Educational and Technological Innovation[1]

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SUMMARY

This session will consist of four presentations, each on a particular aspect of a multi-dimensional IST project addressed by means of its acronym, 'SEED'. The main objectives of SEED are: a) to develop technologies that support authoring and scripting, collaboration, reification and reflection of learning activities, integrated learning activity, kinaesthetic and concrete representations b) to design innovative activities supporting a social mode of learning in a collaborative setting, an augmented awareness of learning processes and meaning construction and autonomy and responsibility for learning c) to develop methods for generating integrated communities of education researchers, teachers students and developers designing and implementing context-sensitive school-based and at the same time innovative activity d) to develop methods for using the above experience, tools and infrastructure to proliferate innovative activity in the school system.

KEYWORDS: *Educational software development, cultural change, communities of practice, large-scale perspectives*

INTRODUCTION

This session will consist of four presentations, each on a particular aspect of a multi-dimensional IST project addressed by means of its acronym, 'SEED'. The main objectives of SEED are: a) to develop technologies that support authoring and scripting, collaboration, reification and reflection of learning activities, integrated learning activity, kinaesthetic and concrete representations b) to design innovative activities supporting a social mode of learning in a collaborative setting, an augmented awareness of learning processes and meaning construction and autonomy and responsibility for learning c) to develop methods for generating integrated communities of education researchers, teachers students and developers designing and implementing context-sensitive school-based and at the same time innovative activity d) to develop methods for using the above experience, tools and infrastructure to proliferate innovative activity in the school system.

The innovative framework for the project is set against the following context. In recent years it has been widely recognised that a new approach is needed in the schooling process. Students need to be encouraged to actively construct knowledge in social settings rather than passively receive information. They need to acquire deeper understanding, higher – order thinking skills and methods and greater communicational ability and this will come about as they are engaged in authentic tasks involving the integration of skills and concepts in social collaborative settings. Teachers need to become reflective practitioners shaping their own teaching methods rather than act as technical mediators of pre-defined static curricula. The school as organisation needs to open up and act as a window to a learning society rather than an isolated information channelling institution. Students, teachers and schools need to cope with pluralism and choice. It is also recognised that IST has enormous potential to serve as a catalyst for such a change and that this change is central to the advent of the Information Society. These issues are not about changes in individuals. They are about generating dynamic communities of practice. However, there is a growing awareness that human activities and communal mindsets are lagging behind the technological potential, raising serious institutional and cultural barriers to innovation.

In education, "technological fix" solutions and administrative top-down school reform paradigms are proving insufficient by far. Schools are not supported to change educational practices with the use of the new technologies and the system cannot make good use of exemplary cases.

In most cases, the available technological tools do not integrate technological and educational expertise but are simple adaptations of business applications or libraries of multimedia content. Education – specific high quality software and ideas for its use have high demand in resources.

The generation of developing information society communities of practice requires joint small scale and systemic intervention integrating educational and technological expertise. The broad use of such experience requires a method to use systemic mechanisms to spread such practice and engage people in active participation. The project will thus address factors that will enable local successes to serve larger agendas, scale up to widespread audiences, and evolve to meet new challenges.

The sessions will be organised thematically, each addressing one of the project's issues as articulated in the objectives. The first paper by D. Schneider and V. Synteta discuss the emergence of new systems supporting portal configuration and malleability to an extent which allows for the creation of constructivist scenarios for learning at an affordable cost in time and need for technical know-how. The second paper by U. Hoppe, D. Schneider and M. Koutlis describes the design rationale behind the three kinds of educational software under construction in the respective sites, emphasising mindtools in distributed workspaces, end – user configurable micro-portals and component – oriented architecture for authorable microworlds. The third paper by C. Kynigos, E. Trouki and N. Yiannoutsou addresses the issues in generating communities of practice involving the educational use of computational and communication technologies. The fourth, by U. Hoppe, C. Kynigos and R. Magli discusses the ways in which the experience from these 'best practice' communities can inform educational policy at the large – scale level. The session will conclude with enough time for some synthetic remarks by the coordinator and some discussion on the issues relating communities, technologies and educational policy. This proposal concludes with a list of abstracts from the four papers.

Notes

[1] 'SEED' No: IST-2000-25214, IST Programme, Key Action 3, Action Line: IST-2000-3.2.1