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Empowering human connected communities

The keynote's goal is to reflect on emergent opportunities for human Discovery (in science), Creativity (in art & industry), and Learning (in education) as processes often occurring serendipitously in individuals and in communities empowered by dynamic Web connections in the global village. These reflections seem to fit best with the mandate of the CBIE Conference: sustainable education.

Having been influenced by the pioneering work of the late ecologist Francesco Di Castri, former Unesco coordinator for durable development and main United Nations consultant for the Rio 1992 Conference, we envision major shifts in the societies of the future, concerning all aspects of their life in general and of their education in particular. We adopt his foundational view that local empowerment of isolated communities is enabled by bidirectional access to Information with a champion playing a catalytic role. The empowerment envisioned by Di Castri was described by him in several field studies, ranging from isolated islands in Polynesia such as the Easter Island, to isolated Inuits in the Arctic region, to peri urban regions in Argentina and Brazil, to rural villages in the south of India. At the time these studies mainly focused on the acquisition of primary means of survival, including self esteem from the recognition of a cultural identity. The observed phenomena did not register the enactment of mass sustainable innovation and development in rapidly developing Countries such as Brazil today. While the necessary conditions for development were postulated and experimentally verified, technologies were not yet ripe.

In the talk I will argue that processes of human massive scientific discovery, creativity and learning may today easily occur by exploiting available Web resources – bidirectional access to Information-, under the condition to be accompanied by “champions”, the new teachers playing a catalytic role in the autonomous, social acquisition of knowledge. These processes may be even accelerated by research focussing on the creation of new computational infrastructures and applications on the basis of in depth studies of human collaborative behavior in connected communities, as the Web Science movement envisages. Work, entertainment and health represent examples of rich scenarios for the production and consumption of knowledge by connected communities. The interactive scenarios show often intertwined professional, business oriented and educational, learning oriented phases: it is hard to distinguish when participants learn, teach or operate. Consequences are very profound since many classical frontiers are potentially broken facilitating a new period of renaissance at the global level.
These phenomena call primarily for an awareness by school actors (teachers and administrators as well as students) of the imminent necessary mutation of school practices with respect to what we know today, bringing to an acceptance and appropriation of the associated significant changes of their roles, skills and practices. Changing requires energy, thus is often considered harmful. However, in this case, the emergent connected global village offers the same actors a variety of important opportunities: recognizing their improved socio-economic role, extending their impact all life long, smoothing distinctions between research, education and business in institutions and enterprises, opening geopolitical frontiers to unprecedented exchanges, including breaking language and cultural barriers. The new world starts with new Schools, Universities and Research centers, eventually becoming virtualized in order to be more effective. It is evident that the Web plays today a revolutionary role similar to the one of the press in the XV Century.

In the first part of the presentation I will exploit known aphorisms, paradoxes, and common sense beliefs in order to argument the provocative propositions above. The second part will be dedicated to current Informatics research projects of the speaker and his team that support the vision presented above, in the domain of science construction, social ecology, entertainment (music), and human learning.

Biografia

He graduated in Physics in Pisa (1971); worked as tenured staff member at the Universities of Pisa, Amsterdam, Milan and Montpellier; as visiting professor at Brussels and Nice-Sophia Antipolis.

His main scientific contributions, since his thesis, concern the intersection between Informatics and Human Learning, combining Computation, Cognition and Communication. He authored about 130 papers in international journals, peer reviewed conference proceedings, chapters of books; edited 8 books; was invited speaker at conferences, Universities and Industries (45); participated to more than 25 European R&D Projects.

Between 2005 and 2010 he was Deputy Director of the Montpellier Laboratory of Informatics, Robotics, and Microelectronics: LIRMM: www.lirmm.fr, 400 researchers; that is a French cross-faculty research entity of the University of Montpellier and the National Centre for Scientific Research (CNRS): the Lab obtained the best evaluation score at the end of the mandate (A+) being therefore recognized as one of the top laboratories in France in the domain.

Stefano Cerri developed a unified formal model for human and artificial Agents mutually delivering stateful services (Grid services). Currently, his main commitment is about Web Science and related studies concerning models, infrastructures and applications supporting connected communities of human Agents jointly working, playing, learning and contributing to politics.