Global Collaboration in the ICT-aided Learning/Education

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Abstract

The wide spread of knowledge is a major aim of learning/education (L/E), for which it will be the basics of modern L/E to provide every person over the world with opportunities for accessing open knowledge resources via virtually unlimited communication capability. To cope with the recent ‘explosion’ of knowledge associated with highly complicated social activities, it is necessary to integrate and visualise the related knowledge and learning experience, within a bigger picture, each piece of knowledge clearly positioned and related with each other. Furthermore, in order to make world-wide knowledge and intellectual activities mutually linked according to the concept of knowledge structuring, rapidly advancing ICT should be best utilised as a powerful means. The paper first discusses the progress of open knowledge sharing and structuring/visualisation. It then analyses the issues of global cooperative activities in the L/E arena, and finally presents a variety of specific collaboration examples.

Keywords: global collaboration, ICT-aided, education/learning, e-learning, OER, knowledge structuring

1. Introduction

Providing every person throughout the world with opportunities for acquiring knowledge freely is the basic aim of modern L/E. The wide penetration of the Internet and broadband communication media, as well as the wide recognition of global issues such as global sustainability, will make L/E, including both e-learning and traditional methods based upon much more open and global collaboration. Rapidly advancing ICT can be best utilised as a powerful means for mutually inter-linking world-wide knowledge and intellectual activities according to the concept of knowledge structuring/visualisation, as MIMA Search [1] is applied to UT-OCW, etc.[2] This makes it possible for learners to benefit from self-orientation as well as tailor-made L/E, while instructors/researchers can see where their speciality fields reside in the knowledge world, how those fields are connected with others, what is missing, etc.

This paper discusses the progress of global collaboration in the Information and Communication Technology (ICT)-aided learning/education (L/E) in the higher education. Section 2 presents the significance of open knowledge sharing and structuring/visualisation. Section 3 discusses the forms, levels and issues of global cooperation in ICT-aided L/E. Then Chapter 4 explains global collaboration on the methods, technologies and tools for ICT-aided L/E and then analyses activities on open/shared L/E materials, contents and resources. Section 5 concludes the paper, with an expectation of more participation, co-work and communities of individuals.
2. Opening up and Globalising the Knowledge by Structuring/Visualisation

'Distributing knowledge evenly brings about equal opportunity.' From this point of view, the University of Tokyo (UT) has been advocating the concept of 'the opening of the gates of knowledge.' It is promoting programmes related with this, cooperating with national and global organizations, recognising that structuring knowledge within a closed entity (university) provides just a view of a separate island, and that globally linked cooperation should show a big picture of the whole world. In doing this, collaboration in multi-cultural and multi-lingual environments is a key factor. Since 'all things are in flux,' the structuring of knowledge must be a dynamic, flexible activity and should be able to integrate existing as well as emerging new knowledge bits and elements.

As mentioned above, knowledge sharing will be facilitated by showing the entire picture and elements within the collective knowledge with their relationships, e.g., the cross link trails of leading edge knowledge and practice, technology basics, basic theories, etc. in the engineering arena. Among the range of structuring/visualization tools, a UT researcher has developed 'MIMA Search.' [1] This allows a variety of views such as network display, category display, topic scoping, extension of a linkage to the next link, etc. UT employs MIMA Search modified to show the relationships among all courses in the School of Engineering as well as those of UT-OCW. [2u] To achieve global knowledge structuring and linking, efficient and effective federated search methods will be key, in addition to huge volume data(base) processing capabilities.

3. International Cooperation and Issues

3.1 Forms of Cooperation

Given the competitive environment that universities find themselves in recently, a number are trying to make 'global/international capability' education a major competitive advantage, selecting individual one-to-one cooperation, or at most group alliances, rather than federation, such as a virtual university. Regarding ICT support for the production and management of courses, a consortium approach is preferred due to the resource and technological burdens. This tendency will grow further in future, supported by the progress of open technology, industry and society.

Cooperation in L/E may be aimed at course content, materials, instruction methods, technologies, tools, etc. as well as development, use and maintenance of these. Collaborative work may be done as: i) sharing through origination and publishing via websites; ii) communication back to an originator/publisher; iii) mutual cooperation and sharing by distribution (among organisations, consortia, etc.) on specific objective(s); and iv) participation/collaboration as Web2.0-type activities. [3][4] This new form, one that encourages the participation of individual people, the wisdom of crowds, etc. will become a distributed cooperative learning platform, called 'ubiquitous L/E support.'

3.2 Level of cooperation

Collaboration among different cultures is not so easy in any field, much less are among universities characterised by brand power, academic freedom, collection of individuals rather than an organisation, and in some cases part of a nation. The following are often observed about the collaboration motivation/level:
- Cooperation within a region which is a collection of similar cultures will be easier, e.g., within Asia and the EU,
- Any such university as pursues a unique advantage in 'global education' intends to pursue one-to-one cooperation with prominent higher educational organisations in developed countries, typically those of the U.S.A.,
- Universities with high reputations take part in a specific new initiative if they can lead such initiatives. They prefer only high level of cooperation if many peer level members participate more or less equally, and
- Consortia are preferred to solve imposed problems common to universities, such as tax-like costs or social responsibility. In many cases, the latter comes out as a loose forum such as an international conference.

3.3 Issues

- Assurance of quality and level of sharing: Except in the case of bi-lateral cooperation, a multi-party case with open sharing needs requires considerable open, mutually agreeable assurance on the level of sharing and things to be shared.
- Intellectual Property Right (IPR): One of the most critical issues, some experiments are described in Ref. [5]
- Standardisation, implementability, interoperability: Method/description formats can be made common by producing standards. However, producing and maintaining actually workable systems in a university is very difficult, and may be tackled by forming a collaboration group.
- Language and culture: Language itself is a culture. For really productive cooperation, it's essential to understand your partner well and their culture/language. From this point of view, multi-lingual aspects in L/E have been discussed in such places as APRU DLI conferences [6u] and the OCW Consortium[7u]

4. Cases of Global Collaboration

This section reviews cases of global collaboration related with ICT-aided L/E, excluding infrastructure such as LMS (Learning Management System) and CMS (Course Management Systems).

4.1 Methods/Technologies/Tools for ICT-aided L/E

- ICDE (the International Council for Open and Distance Education): Recognised by UNESCO, ICDE serves as the global institutional organisation in online, flexible and blended learning, including e-learning / distance education. Its aim is to promote intercultural cooperation/understanding through flexible learning/teaching throughout the world.
- APRU (Association of Pacific Rim Universities): Members cooperate in Research Projects/Symposia, APRU Net & Distance Learning, etc. The latter comprises a variety of projects using the Internet, including annual DLI (Distance Learning and the Internet) Conferences [6u] DLI Conference 2006 is to be held at the University of Tokyo. Its main theme is 'Technology Enabled Global Knowledge Structuring' which further comprises such sub-themes as mobile and ubiquitous learning, open knowledge sharing, and multi-lingual learning environments.
- EU Activities: In 2002, the EU drew up a plan eEurope2005 to be achieved by 2010, which includes promotion of digital literacy, European digital campus, joint-provision of e-learning programmes and education training in Europe, and cross-cooperation for the promotion of e-learning in Europe. In May, 2005, the EU held a conference ‘Towards a learning society,’ [8u] The forms of ICT supported learning (e-learning) are increasingly being used for the re-skilling of workers, which is at the top of the agenda of the new initiative called i2010 (European Information Society 2010.)
- Activities in Asia/Japan: Examples include: i) Asia e-Learning Initiative approved by the ASEAN+3 (China, Japan and Korea) 2001, to diffuse e-learning within and among member countries; ii) JICA (Japan International Cooperation Agency)-Net, a distance technical cooperation project which provides different forms of country-specific supports via distance lectures, video conferencing, as well as multimedia content resources in addition to printed educational materials; and iii) AAOU (Asian Association of Open Universities) founded in 1987.
- Cooperation Related to Virtual Universities – Global higher Education Services via the Internet [9]

Examples include: i) U21global, a joint venture between Universitas 21 and Thomson Learning. Diplomas are issued by the consortium; ii) The Global University Alliance (GUA), a consortium of originally nine and now six international universities from New Zealand, Australia, England, and U.S.A. as well as NextEd. This alliance offers ‘off the-shelf"
online courses on vocational education in members universities and mid-career professionals; and iii) Cardean University, an online venture established in 1999 by Unext, an American Internet education company, in association with four American universities plus one UK school. It provides an online education to working adults.

4.2 Open, Shared L/E Materials, Content and Resources

- OpenCourseWare Consortium (OCWC) [7u]: Its members are universities and educational organisations from U.S.A, Europe, Asia, etc. Regional/national groups such as CORE (China), JOCW (Japan), translation/distributor groups, etc. are also cooperating with and within OCWC. It has been studying the sustainability model of OER activities, developing a Wiki-type portal and Q&A functions for user convenience. Another example is the trial use of automation tools for OCW-oriented courses by Sakai (Univ. of Michigan) plus eduCommons (Utah State Univ.).

- OER (Open Educational Resources) [10u]: OER is a UNESCO's activity aiming at fostering open and sharable educational materials globally such as OCW. The OER's three major activities are: creation of open source software and development tools, creation/provision of open source content, and development of standards and licensing tools.

- iCampus - Technology, Method, L/E content, etc. [11u]: Initiated in 1999, this alliance between MIT and Microsoft sponsors innovative projects to develop not only L/E materials/content but also methods; it aims to apply these to classrooms/labs. iCampus is increasing the number of world-wide partners to jointly develop and diffuse contents as well as methods.

- Sharing of Learning Content [5]: Examples include: i) MERLOT (The Multimedia Educational Resource for Learning and Online Teaching) initiated in 1966, which aims to share high quality on-line resources which are freely accessible and community function in order to improve distance learning in the higher education, ii) ARIADNE (Alliance of Remote Instructional Authoring & Distribution Networks for Europe) to diffuse a paradigm of 'learning objects,' and iii) NIME and NIME-gl-ad (Gateway to Learning for Ability Development) for content search for existing (pre-registered) e-learning content started in March 2005. English NIME-gl-ad is now under development.

5. Conclusion

This paper has discussed recent progress and issues on global collaboration in the Information and Communication Technology (ICT)-aided education/learning (E/L) in higher education. Today, most global collaboration activities are done in an organizational mode. In future, in addition to these, multi-dimensional cooperative activities should proliferate with Web2.0-like activities; i.e., self-growing collaboration, wisdom of crowds based on participation, co-work, learning/creating community, etc.

References