Collaborative Technology and New e-Pedagogy

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1. Purpose & Abstract

The educational environment is changing from traditional classroom teaching ecology from the adaptive individual/collaborative learning one by development of Internet, mobile and wireless technology. Therefore, we need to develop the new pedagogy in consideration of such new technologies. Especially, our knowledge and wisdom are cultivated by interactive learning/problem solving/building-something through collaborative activities. In this panel discussion, we would like to examine the meanings/ecology of “Collaborative Learning” again and explore the new technologies of communications which evokes and enhances it.

Varieties of knowledge will be taking a form of multimedia in a highly technological, network society and wide varieties of educational applications and teaching systems will be provided. However, the problem is that we need ability to grasp the essence of that knowledge. Also this knowledge should not be enclosed just in a human understanding of the world. An ability to create a new knowledge out of that understanding is sought now. The knowledge in a closed textbook will be transferred to this real world. It is important to form a live knowledge. So, this kind of learning requires collaborative and creative activities in its process, therefore we need to exploit a new learning ecology and explore e-pedagogy.

In this Post-Modern age, our new learning viewpoint is as follows.

a) Group modeling and collaboration for social activities.

b) Exploration-minded experimental learning.

c) Learning (urged) by asking, explaining and teaching to make a new insight.

d) Interactive diagnosis and open learning model.

Moreover, as one of current big issues in e-Learning world, the concept/technology of Learning GRID is proposed in order to build the learning environment for the mutual/sharable utilization of learning resources. We would like to clear its framework and discuss the relationship between new e-Pedagogy and learning GRID from collaborative learning point of view. We suppose that Learning GRID is to drive distributed computing and seamless accessibility for learning resources and communication activities with interoperability and knowledge sharing. Under this environment, we need to establish new e-Pedagogy in order to create the effective/significant systems for the future education. Finally, we expect standardization of the infrastructure for collaborative learning environment in order to share data/materials/tools/applications related to the events of Collaborative Learning.

2. What is Collaborative Learning?

In terms of Roschelle & Teasley (1995), they defined “collaboration” to be “a coordinated, synchronous activity that is the result of a continued attempt to construct and maintain a shared conception of a problem”. Dillenbourg (1999) takes up the following 4 points as the features of Collaborative Learning, which are a situation, interactions, process (learning mechanism) and effects. Cowie & Rudduck (1988) defined that collaboration in leaning is the opportunity to learn through the expression and exploration of diverse ideas and experiences in cooperative company. It is not about competing with fellow members of the group and winning, but using the diverse resources available in the group to deepen understanding, sharpen judgment and extend knowledge”.

In consideration of those views, Okamoto (2000) pointed out that Collaborative Learning should be emphasized as follows:

1) Process/situated context
2) Individual learning achievement such as knowledge acquisition, skill formation and concept formation, learning set
3) Versatile cognition for both of holistic and serialistic thinking schema
4) Understandings of the relationship among participants
5) Effects of observation learning (reflection/self-monitoring)

Collaborative Learning doesn’t depend on place and time. Especially, in an Internet environment, the type of asynchronous ecology of Collaborative Learning is more useful than the synchronous one (such as a Videoconference). Moreover, in the process of Collaborative Learning, individual learning may be sometime embedded, based on a certain curriculum in schools and vice versa. Collaboration in learning or Collaborative Learning often happens during ordinary educational situations.

3. The Concept of Learning GRID for Collaborative Learning and e-Pedagogy

As one of current big issues in e-Learning world, the concept/technology of Learning GRID is proposed in order to build the learning environment for the mutual/sharable utilization of learning resources. We would like to clear its framework and discuss the relationship between new e-Pedagogy and learning GRID from Collaborative Learning point of view. We suppose that Learning GRID is to drive distributed computing and seamless accessibility for learning resources and communication activities with interoperability and knowledge sharing. Under this environment, we need to establish new e-Pedagogy in order to create the effective/significant systems for the future education. Finally, we expect standardization of the infrastructure for Collaborative Learning environment in order to share data/materials/tools/applications related to the events of Collaborative Learning.

Figure 1 shows the framework of learning GRID technology. From participants’ performance information and learning resource information, Learning GRID has the functions of modeling the situation of Collaborative Learning and perturbing knowledge exchange and transform by distributed collaborative agents in order to facilitate knowledge building. Learning GRID has also the function of collaborative filtering with recommendation function. So, we can regard this as a coordinator in a marketplace and a kind of negotiation-circulation engine for knowledge management.

In this panel discussion, we aim to understand and share the concept of Computer/Internet Supported Collaborative Learning, and then we explore the technologies of collaborative tools and infrastructure to promote Collaborative Learning in consideration of the image of new e-pedagogy for Collaborative Learning. Finally, we would like to discuss about the international standardization for those technologies.

References

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