

Possible Extension for Electronic Media in the revised Applications

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Abstract

Our educational/social communities are growing from small to large and in a more widespread direction. There needs to be one solution that contributes to providing smoother communications with standard educational models and creates a more plentiful and harmonious situation in our communities. Here are typical basic concepts, concrete schemes and clinical practices on real higher educational sites that have been prepared for cooperative learning. The more highly educational a piece or the overall parts of content become, the more diverse the individual learning and mastering processes become. Consequently, there may be more opportunities to mutually share a domain with the advance of confirmations, not only in teaching staff but also among the individual learners.

Introduction

Recently, there have been many kinds of obstructions found covering almost all aspects from the widespread social sphere to the personal sphere of the world. It can be pointed out that even in a small space, there is going to be something slowly prevailing by the obscure or vague atmosphere, not only from the economic point of view but also from the social life point of view to the domestic point of view. Under the existing conditions, we are eager to make an effort to find any solution for the next step. As for one of the biggest attempts at a realistic solution, IT (information technology), including electronic media applications, is being discussed as one of the key candidates.

IT Basic Impacts on Educational and Social Environments

Our educational environments prefetch our next social image in the future. Social phenomena or daily events have become different from temporal or discrete ones. They have gradually appeared on the surface from one of the most deep-knit relations in our society between each other, such as in daily life, the business world, public education, and social culture (cf. deschooling 1970s). Therefore, it can be pointed out that it is important to find a viewpoint with a realistic approach on a solution to help contribute to daily life in our educational and/or social communities. There needs to be one solution that contributes to providing smoother communications with standard educational models and creates a more plentiful and harmonious situation in our educational and/or social communities. These are rapidly changing in the forms of manner and roles in education and/or society.

There are higher speed network terminals, where the Internet can be reached from any local site in the world. Though it is still in the trial and error stage, we are now going to seek a blueprint image which will span all the way until the next generation. It is to be feasible without as many complications as possible between mutual dependencies and individual self-reliance.

In the final part of this section, the author summarized some items relating to basic IT impacts on educational and social environments.

#1. From humans or material mobility in the real world to "abstract mobility" based on information mapping; ex. human behaviors and activities are becoming much quicker, and then can be amplified and extended on an intelligent and/or physical capability basis.

#2. "Information cost" to be remarkably reduced; ex. anybody can participate in more joint ventures in the reconstruction of information not only on a large scale or capital basis.

#3. "Information productivity" to evolve and increase both on individual and organizational sites; ex. economic trends both in investments and consumptions can be greatly influenced and changed.

#4. "Information transitional states and phases" to be widely affected in personal, group, and mass communities; ex. mutual relationships between each other such as instructor/students, enterprise/customers, and so forth have changed greatly. Then, even middle layers can be merged into any

situation, at the same time producing new coordination.

#5. The sovereign powers in any region, to be greatly shifted, or distributed for "information initiatives;" ex. reciprocal dynamics can be changed at large and terminal users or beneficiaries can be predominant over their predecessors.

#6. Widely "integrated intelligence and know-how" can be more available on both local and public connections in any information environment; ex. open policies and concepts can be more advantageous and secure than closed ones.

#7. Newly expressive "electronic media tools" and activity manners and/or styles, to be developed and diffused on the basis of viewpoints and value added theories; ex. traditional family based units to social structures may be more adaptive for the next generation phase.

#8. Conventionally "deep-rooted constraints" including space-time dimensional factors, to be extraordinarily overcome and more controllable; ex. many kinds of handicapped matters can also be extraordinarily overcome and gradually integrated to create a new worth based on value-added theories and principles, or sometimes merit/demerit situations, strength/weakness and so forth can be reversed.

#9. From one dimensional utilitarianism to "more multi-dimensional and higher quality principles", to be explored with an introduction of intelligence using electronic media; ex. what is QOL (quality of life) can be pursued with the diffusion and use of deeper knowledge and higher intelligence.

#10. Basic "media literacy" is strongly needed to process information properly and be expected to extend an affluent daily life with higher QOL; ex. classical abacus base literacy, computer literacy, and network literacy to new media literacy can be discussed as one of the most important fundamentals for ordinary life.

Concrete Case Studies

As suggested in the previous sections, IT technology needs to be discussed further for us to be able to make use of it as much as possible. This can make our daily life more fulfilling and help create smoother

communications in educational and/or social communities while being feasible with more reduced constraints of space/time dimensions, and even traditional customs and manners (cf. A canned learning content of wonders on the network – “Scientists are coming to the classroom over networked computers” 1997).

The author would like to contribute in some way to smoother intentional communications and also to the forthcoming, higher quality communities through electronic media and IT technologies, ex. self-emancipation and assertion, how to be connected, newly formed sympathy and belief etc. The above items have only begun to be discussed widely and are considered as one of the most fundamental elements for the next phase. Some featured breakthroughs should be researched and developed from an integrated viewpoint that was previously mentioned; remote control through mobile phones, handwritten character profile creation/recognition systems including pen and paper concepts, human concepts formation, distributed algorithmic parallelization, parallel inference model, educational hypermedia applications, electronic books (e-books)/portable electronic compact version, collaborations over distances, teleconferences on a broadband network, electronic distance education (EDE) etc. The 11 items listed above have been mutually related in research and development. Here the author discusses one of the main themes which includes human activities and mobile terminals at a distance from the behavioral and intellectual viewpoints. Other related items were also reported in detail at the international conferences and in the international journals (1) (2) (3) (4) (5) (6) (7) (8).

For example, how possible is it for educational staff to fully grasp the better understanding of students for the next phase? What are the differences between real and electronic/virtual educational processes? What does it mean for learning space to be over distances? Can they coexist without any inconsistency between each other? At last, related specialists have begun to communicate about and discuss more feasible pedagogy research and development in the latest decade; such as Hybrid Learning, Social Learning and Next Generation Distance Education/Learning etc (9) (10).

The intermediate step describes essential capabilities for multimedia telecommunications and conceptual models introduced for their

telecommunications. This enables a realistic solution of multimedia telecommunications in a widespread range of personal to social community, finally oriented toward personal to social multimedia computing environments integration, on the conceptual configuration of multimedia telecommunications schemes towards cooperative learning (11). There are continuously remarkable practices to be conducted and discussed on daily educational situations under the R&D integration with feasible real-time software concepts and fundamentals for multimedia telecommunications (6) (7) (8) (12) (13).

Here are typical basic concepts, concrete schemes and clinical practices on real higher educational sites that have been prepared for cooperative learning — educational progress through media technology (as shown in the latter Figure 1 and Figure 2). Many kinds of design educational processes are to be repeated between teaching staff and learners based on a real-time display. Red, yellow and blue in a circle mean understandable, slightly understandable and not understandable, respectively. Some detailed dialogues among them are shown in the Q/A contents. Clinical practices were recorded and will be shown in a video demonstration.

Fundamental communications in education, which are similar to those in a general conference, are also to be argued for. It can be suggested that one of the bigger differences between them has been the inclusion of more qualitative items with more weighted values from the viewpoints of cost and quality in education. It should be important to improve higher quality communications with less mutual disturbance in an individual's mental and/or behavioral processes under any circumstances for typical features such as instantaneousness, portability, physicality, integrity, multi-contexts and reality for unwired and/or real-time communications.

Together with staff, the author has applied, revised and more optimally adapted the resource and its process necessary for more educationally practical situations. Here, two points should be particularly emphasized for their importance above all: one being that basic IT impacts are an essential quality, and the other is the need for a relatively practiced application on educational and social environments. In particular, it is needed to know both its application and verification process details in order to better meet

the needs for practical success. Looking back on the long-ranged projects, the one of greatest importance, one in which we have learned about our own teaching while using the resource, is as follows : The more highly educational a piece and/or the overall parts of content become, the more diverse the individual learning and mastering processes become, and consequently, there may be more opportunities to mutually share a domain for the cognitive, affective, and psychomotor ones with the advance of (re)confirmations, not only in teaching staff but also among the individual learners.

Concluding Remarks

Some of the concluding remarks are referred to for extending electronic media towards cooperative learning. The author could present some results of case studies researched through IT technology and electronic media with IT basic impacts on educational and social environments. With intelligent electronic media, which have been cultivated more widely and in-depth even under cultural situations, it would be more feasible to educate others about their communication ability for cognitive, affective, and psycho-motored dialogues with physically sensible communication skills. At the same time, it could be possible to precisely grasp mutual understanding based on both the human brain and more physical intelligence regarding individuals, smaller/larger communities up to their overall mass with an introduction of their mapping status on a real-time basis.

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Bibliography

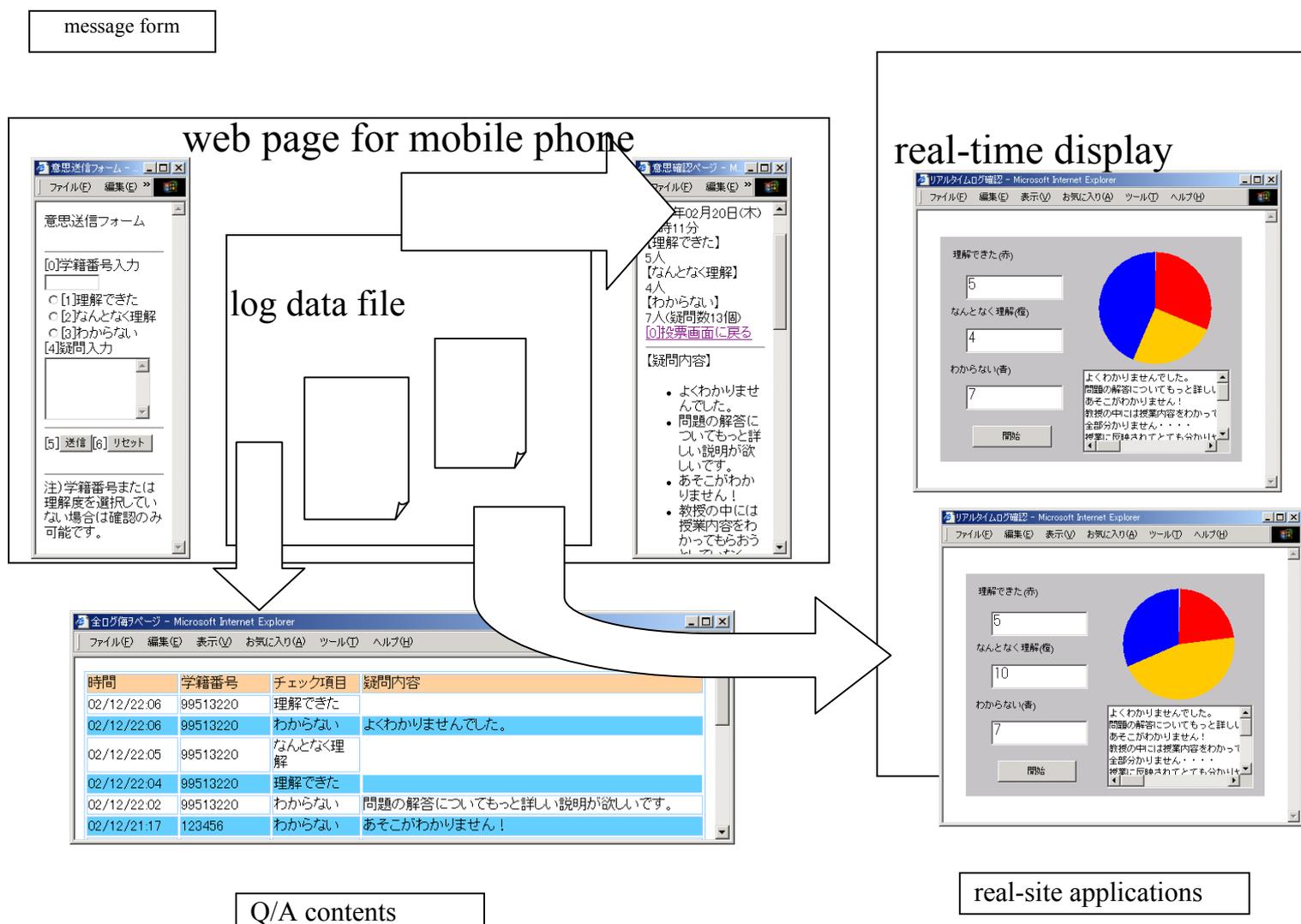
1. T. Ichiko, "An Advanced Software Paradigm for Intelligent Systems Integration," John Wiley and Sons, Inc.(ed B. Soucek) 1991.
2. T. Ichiko, M. Yamamoto, M. Hanano, "Tele-education Based on Images in Multimedia Computing Environment," Proceedings of the IEEE International Conference on Robot and Human Communication Roman 94, Nagoya (pp240-245) 1994.
3. T. Ichiko, "Possibilities for Extending Handwritten Character Recognition on a Multimedia Computing Environment in Education," Proceedings of the International Symposium on Human Interaction with Complex Systems, North Carolina 1995.
4. T. Ichiko, "Conceptual Software in Hypermedia Environment - Cooperative Learning in Electronic Distance Education," Proceedings of USA AACE (Association for the Advancement of Computing in Education) Site 97, Florida (pp885-888) 1997.
5. T. Ichiko, "Interactive Teaching and Learning at a Distance in Science Education Research," Proceedings at the International Conference on Systems Research, Informatics and Cybernetics Volume VII, Baden Baden (pp42-46) 1999.
6. T. Ichiko, M. Yamamoto, Y. Kawamura, M. Hanano, "Advanced Multimedia Telecommunications using a High Speed Broadband Backbone Network beyond all Aspects of the Current Internet (Revised)," International Journal of Computers & Education, Volume 37 (pp211-224) 2001.
7. T. Ichiko, "Possibilities for Extending Media with a Sense of Immediate Reality in their Applications," International Conference on Global Issues and Solutions 2003.
8. T. Ichiko, "A Case Study on Highly Cooperative Learning in Distance Education," Wikinomics 2007-2012.
9. A Program of the California State University
<http://www.merlot.org/merlot/index.htm>

10. KEEP Social Learning Suite (SLS) by S. Curtis
<http://keep.curtiscomp.com/>
11. The Science Education Resource Center SERC at Carleton College
<http://serc.carleton.edu/introgeo/cooperative/index.htm>
12. Blackboard Collaborate 12 <http://www.blackboard.com/>
13. Google Apps for Education <http://edu.googleapps.com/>

Bibliographical Information

Research works in Yamagata National University, also included (before his retirement).
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Figure 1. Practical application models



- To mutually send/confirm individual intentions on clients' phones
- To display log data for the staff on a real-time basis for confirmation
- To extend a conceptual process for interactive communications and confirmation among students

CIMG0618 Figure 2-1 One scene in a mobile application

