



A Core Leading Scheme in Deeply Cooperative Learning with a Mobile Focus

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Upon receiving an official appointment to the faculty of the National University, dealing with both higher education and basic research, the following responsibilities regarding computer and electronic media R&D in education were undertaken; e.g. attainments in the fields of advanced educational environments and software engineering R&D on high quality software using intelligent design schemes and design aids. Especially, research based items such as newly developed system design processes initiated by upper software for the purposes of higher functionality (software dominated) and multidisciplinary R&D on electronic media introducible environments into higher educational situations, along with education based items such as on-site case studies for pedagogical methods and electronic media materials applications to meet internationally accredited engineering education qualifications were daily requirements of this position. Afterwards, practical applications for cost effective educational environments and feasible types of verification including evolutionary R&D, along with pedagogical analyses based on multimedia quantitative data and fundamental practices in highly structured network environments were researched: i.e. distance education and learning, local media to hypermedia, electronic reading, paper to electronic books based on mobile phones, next generation web platforms and so on. Incidentally, works on distance learning research integration in international conferences and societies, reviews of accomplishments in cooperation with USA/ European professionals, paper publications on distance learning with related activities and also international collaborative work on multimedia materials used in higher education in the US continue to be conducted.

A Core Leading Scheme in More Deeply Cooperative Learning with a Mobile Focus

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Abstract. Learners are provided with deeply cooperative learning experiences through intentional communications, as well as knowledge and intelligence integration, ensuring a beneficial result from the features and functionalities that have been verified for teaching and learning with a mobile focus. Building high quality communications with less mutual disturbances to individuals' mental or behavioral processes under any circumstance for typical features, such as instantaneous wireless real-time system architecture, should be considered fundamental. Cooperative learning deeply enables high quality communication to be consistent with conventional education environments. Moreover, different from previous styles, cooperative learning also deeply enables the extension of individual abilities for a more advanced comprehension, sharing thoughts with other learners and maintaining bidirectional interactions between learners and teaching staff, or among learners, without any disturbance to class contexts. It is expected that the form and roles of distance education will rapidly emerge from the conventional methods and lead to some innovative approaches to provide feasibly extensive options in educational processes, which are required to enable individual learners to mentally or physically keep up with the changing times.

Keywords: Cooperative Learning

Mobile Interfaces

Multimedia Telecommunications

Learning Quality

Introduction

More in-depth research is required for digitized and electronic distance education and learning methods. At the beginning of that time when the digitized and electronic learning methods were observed, for instance, educational methods have been strongly discussed from higher technology points of view.

Even now, it is no exaggeration to say that it is not enough to take notes for such methods as up-to-date distance education and learning. A completely digitized and electronic distance education environment is not necessarily a final destination for higher education situations. On the other hand, it may be worthwhile to take “deschooling” (since the 1970s) into consideration and compare it with current trends. What are the differences between real and electronic or virtual education processes? What does it mean for a learning space to be over a distance? Which would be a better way of how to get knowledge or how to learn? Related specialists have begun to communicate about more feasible pedagogic research and development as well after some open education declarations in recent decades; such as Open Education, Hybrid Learning, Social Learning and Next Generation Distance Education and Learning.

1. Basics for Intentional Communications

The necessary resources and their processes have been applied, revised and more optimally adapted for more practical educational situations[1][2][3]. Building high quality communications with less mutual disturbance to individuals’ mental or behavioral processes under any circumstance for typical features, such as instantaneously wireless real-time system architecture, should be considered fundamental[4]. The basics could be discussed, in detail, which have been leading up to the current trends of distance education and learning, as well as those of future generations[5][6]. There are typical basic concepts, concrete schemes and clinical practices on real higher educational sites that have been integrated into cooperative learning[7][8][9]. Cooperative learning deeply enables high quality communication to be consistent with conventional education environments. Moreover, different from previous styles, cooperative learning also enables the extension of individual abilities

for a more advanced comprehension, sharing thoughts with other learners and maintaining bidirectional interactions between learners and teaching staff, or among learners, without any disturbance to class contexts. Thus, the improvement of the current model can be realized with intentional communications and up-to-date knowledge and intelligence sharing situations.

2. Practical Case Studies

Generally speaking, teaching staff can recognize questions, as an example, by the individual learners' intention together with any behavior during the process of lectures or seminars. It should be noted that the questions range in a wide and in-depth space, and that more severe mismatches are able to occur in educational situations. This means real-time communications are essential for a simple example of questions and answers (denoted Q/As) and up to more detailed example in mind. Intentional communications with confirmation on a real-time basis are also essential for better mutual comprehension in distance education and learning[4][8].

Here, it enables users to send and confirm not only the individual learners' Q/As, but also their more in-depth intentions, with fewer disturbances present in a class context. Teaching staff can also control communication in many timely situations for a better progression of class context, with their logged data displayed during the process. At the same time, mutually intentional communications are more available between learners and teaching staff, or among learners. Student learners can best use the logged knowledge and intelligence integration for their own respective solutions.

On the other hand, an improved educational environment which is better facilitated by smoother communications and with more integrated software means in real-time has been enhanced[3][8]. This suggests that learners have been provided with deeply cooperative learning through intentional communications, as well as knowledge and intelligence integration; ensuring a beneficial result from the features and functionalities that have been verified for teaching and learning with a mobile focus, including how best to use them. Currently, it enable learners to make the most usage of both a peculiar or public knowledge and intelligence that are connected globally on social networks. Also here, many educational situations to be conducted have been properly integrated in a timely manner for later introduction to be referred to for an improved class context.

3. A Core Leading Scheme

As shown in previous sections 1 and 2, an educational scheme in cooperative learning has been studied and improved upon in real educational situations with strictly verified applications, which are proved feasibly effective and practical, on the basis of an individual learners' level, to be led up to deeply cooperative learning.

Looking back on their long-range projects, the one of the greatest importance, from which they have learned about their own teaching while using available resources is as follows: the more highly educational a piece and the overall parts of its contents become, the more diversely the individual's learning and deep processes must extend themselves, as discussed in their publications. Consequently, there may be more opportunities to mutually share such a domain, as suggested, in widespread cognitive to psycho-motor domains with the progress of reconfirmation.

Educational issues in the downsizing of cultural and civilized societies are now being faced. According to a typical specialist, it is recently necessary to adopt some feasible policies. Now more than ever, forms of communication which are able to capture an educational core leading scheme are being deliberated for deeply cooperative learning, especially in a more advanced comprehension with a scope of regional to interdisciplinary worth, which is greatly needed, e.g. STEM to STEAM synthesized the Arts.

It is important for a learner to make the best use of such a scheme through intentional communications with confirmation as dynamically conducted, for a learner-based driving force in a more advanced comprehension between both each other and within a learner's more advanced comprehension. Human comprehension and memory consolidation can be better empowered through such intentional communications with confirmation as dynamically conducted, even without any disturbance to class contexts.

Incidentally, it is no exaggeration to say that one of the most important issues and matters is students' learning quality assurance. As compared with typical rubrics, such items that should be noted as follows; e.g. stated objective or performance evaluation visible for learners, learning activities scaling is fair and swift, possibly real-time feedback of learning outcomes on rubrics in deeply cooperative learning, from the

viewpoints of software values on a core leading scheme. The general rubrics are intended for common use in evaluating and discussing learners' learning, not for grading. Here, as referred to previously, the rubrics are intended also for trying a dynamic scaling in each grade on real-time basis. The rubrics articulate criteria for each comprehensive outcome with performance descriptors verifying more sophisticated levels of advanced comprehensions; cf. AAC&U VALUE Rubrics. There are three phases to be needed in the rubrics process. Such processes could be continued also for learning more in an advanced comprehension, at the same time with processes in the rubrics; cf. Rubric Template (Huba and Feed 2000). Moreover, it should be continuously studied how to introduce any kinds of rubrics extended in deeply cooperative learning. The rubrics would be expected to extend for such next higher level stage rubrics as creative thinking rubric and so on.

In particular, the essential capabilities have been extended for smoother telecommunications and conceptual learning models introduced into a multimedia computing environment. This enables a realistic solution of multimedia telecommunications which originates at the personal level and expands to the community, one that is finally oriented toward the integration of personal to social multimedia computing environments, on the background configuration of multimedia telecommunications. There are continuously remarkable practices that have been conducted under the R&D integration with feasible real-time software concepts and fundamentals for multimedia telecommunications. Multimedia telecommunication designs and experiments have also been studied to be overcome in a practical manner. The current electronic network is becoming richer in any of the real human senses, especially the audio, visual and physical ones, which continue to prove a greater effect on the common space through multimedia telecommunications on a local to social network. It has been improved enough to make high-quality capacity multimedia telecommunications feasible, and also to allow timely access to an environment which enables improvements of mutual communications of space over distances toward a realistic face-to-face communications space, based on a design and a practical method, which are both suggested conceptual learning models. They are referred to for various kinds of multimedia telecommunications categories. The telecommunications site is assumed as a space, where messages are exchanged between or among processes in software engineering terms, which means it is a process message space (i.e. a space for process messages)[2][4][8].

From a macroscopic point of view, Figure 1 shows a conceptual image diagram in the case study research, focused on essential parts in more advanced comprehensions in cooperative learning. It should be assumed for anyone, not only teaching staff but also student learners with leadership roles to take a part as an educator under the necessity of advanced comprehensive processes.

As one of the most typical implementations, Figure 2 shows one of the examples in practical case studies in a real educational setting. In Figure 2 and 3, including questions and answers (denoted Q/As), teaching staff, staff assistants, and student learners are denoted T, Ast and S1, S2,..., Si, Si+1,.. (here i: integer), respectively.

Figure 3 shows an extended schemes application on a platform in a multimedia computing environment (sound or voice based chat is also available in collaborative drawings, cf. blog, tweet, and messaging or broadcasting together with more technologically directive sound or voice etc.), which enables learners to acquire a more advanced comprehension during an optionally learning process through intentional communications with confirmation. Especially, staff assistants sometimes participate in an applied class in place of teaching staff, on a multimedia computing environment, as a key educator who provides well-refined coordination for newly disciplined education on deep learning .

Here, as shown in the previous Figure 1 to Figure 3, it is suggested that it enables learners to acquire a more advanced comprehension from the viewpoints of advanced comprehensive processes as well as skills. It should be noted that more advanced comprehensions are extended for additional improvements together regarding how to learn on a platform during the process of lectures or seminars, where interactions effectively occurred through mutually intentional communications between learners and teaching staff, or among learners connected in cooperative learning.

Therefore, methods for how to smartly enable learners to acquire a more advanced comprehension vital to cooperative learning with high quality multimedia telecommunication have been studied and greatly improved so as to be consistently integrated with conventional education environments.

In such lectures or seminars as conducted on a practical site, it have been verified on a trial platform in the research that it enables learners to develop a more advanced comprehension, which could be assumed to be feasibly based on all of the human

cognition to creation through intelligence, together with potential skills up to a formed character. At the same time, there might be standpoints for keeping aloof from the others, depending on the respective learners' position there. Moreover, it should be pointed out, to begin with one of the simplest types of media (e.g. web-based message board) among various kinds of multimedia telecommunications. In a sense, this is conducted on a primitive platform to slightly overcome some difficulties because of human advanced comprehension as described so far.

On the other hand, the individual learners are able to have their view of the world on issues and matters in distance education and learning. Due to this, it has been set as a milestone to prepare learner based educational processes for more advanced comprehensions in daily education. The previous rubrics are also constructed on the background of such a concept.

Many years have passed since methods to acquire knowledge and to mutually share such a domain, in the human brain as suggested, in widespread cognitive to psycho-motor domains began to be discussed. It is required to introduce and create a dynamically advanced comprehension in small-to-large range educational processes, together with integrated case studies.

With intelligent electronic media in local to social networked environments, which have been more widely and thoroughly cultivated and integrated within educational and cultural situations, it would be more feasible to educate learners about their communication ability for cognitive to psycho-motor domains with physically sensible communication skills. At the same time it could be possible to precisely grasp a mutual comprehension based on both the human brain and a more physical kind of intelligence regarding individuals to larger communities.

Educational case study designs, experiments and verification have progressed. These lead to a core scheme based on in-depth paradigms and dynamic mappings, also on video, for a more advanced comprehension between teaching and learning, considering those in their practical case studies which have included quantitative learning evaluation results of multimedia applications.

4. Concluding Remarks

The following can be currently discussed as remarks:

1. A core leading scheme for deeply cooperative learning enables learners to acquire a more advanced comprehension together about how to learn between learners and teaching staff, or among learners.
2. The scheme enables users to extend them into various forms and the quality of the learners' community through intentional communications using a multimedia computing environment.
3. Well-refined coordination is required for newly disciplined education on deeply learning, which is feasible through high-end media technology in serious educational situations: such as those driven by educators or learners with leadership.

It is expected that the form and roles of distance education will rapidly emerge from the conventional methods and lead to more innovative approaches to provide feasibly extensive options in educational processes, also under the concept of a life-long educational model, which are required to enable individual learners to mentally or physically keep up with the changing times.

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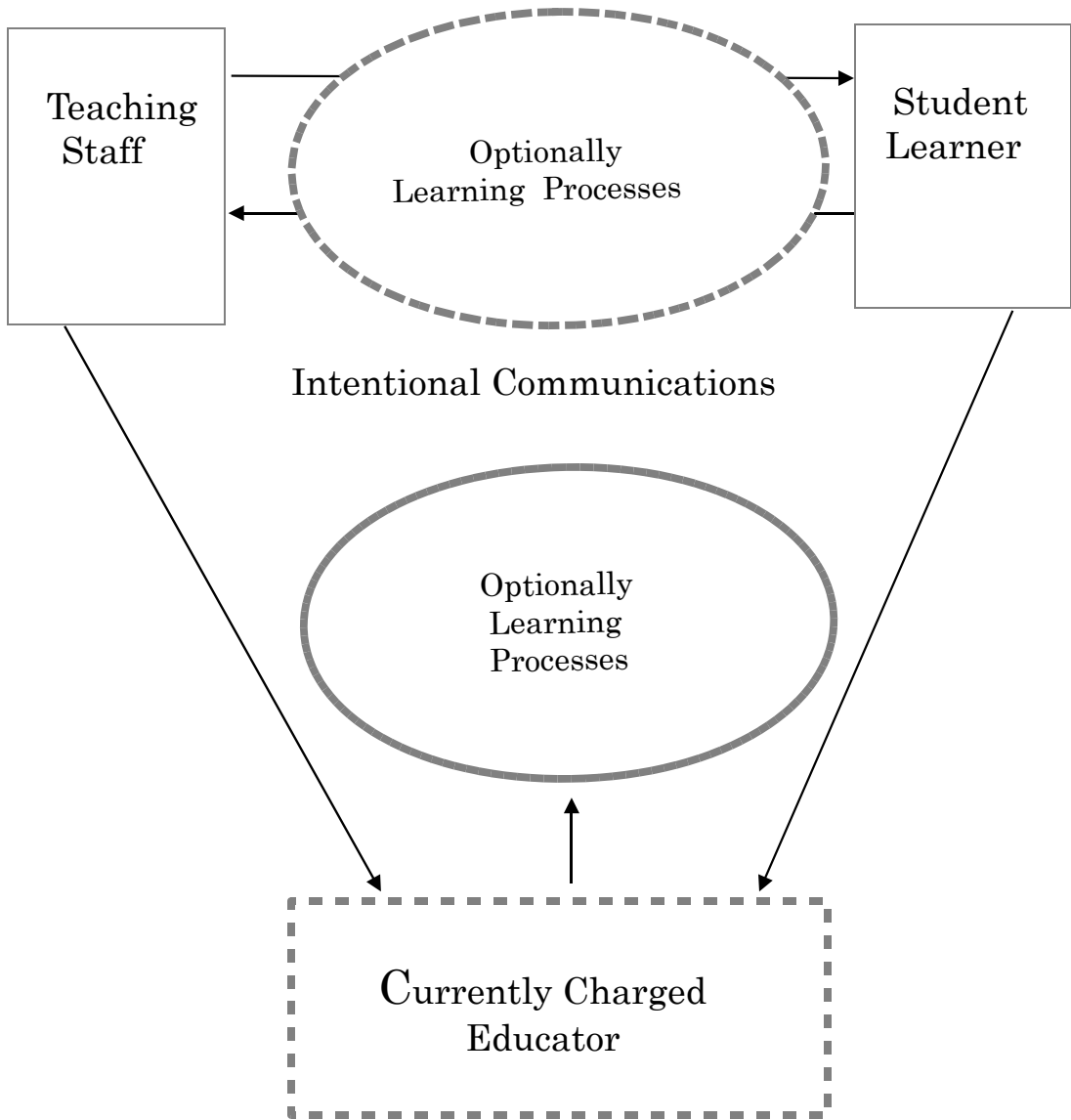


Figure 1 A conceptual image diagram in advanced comprehension.

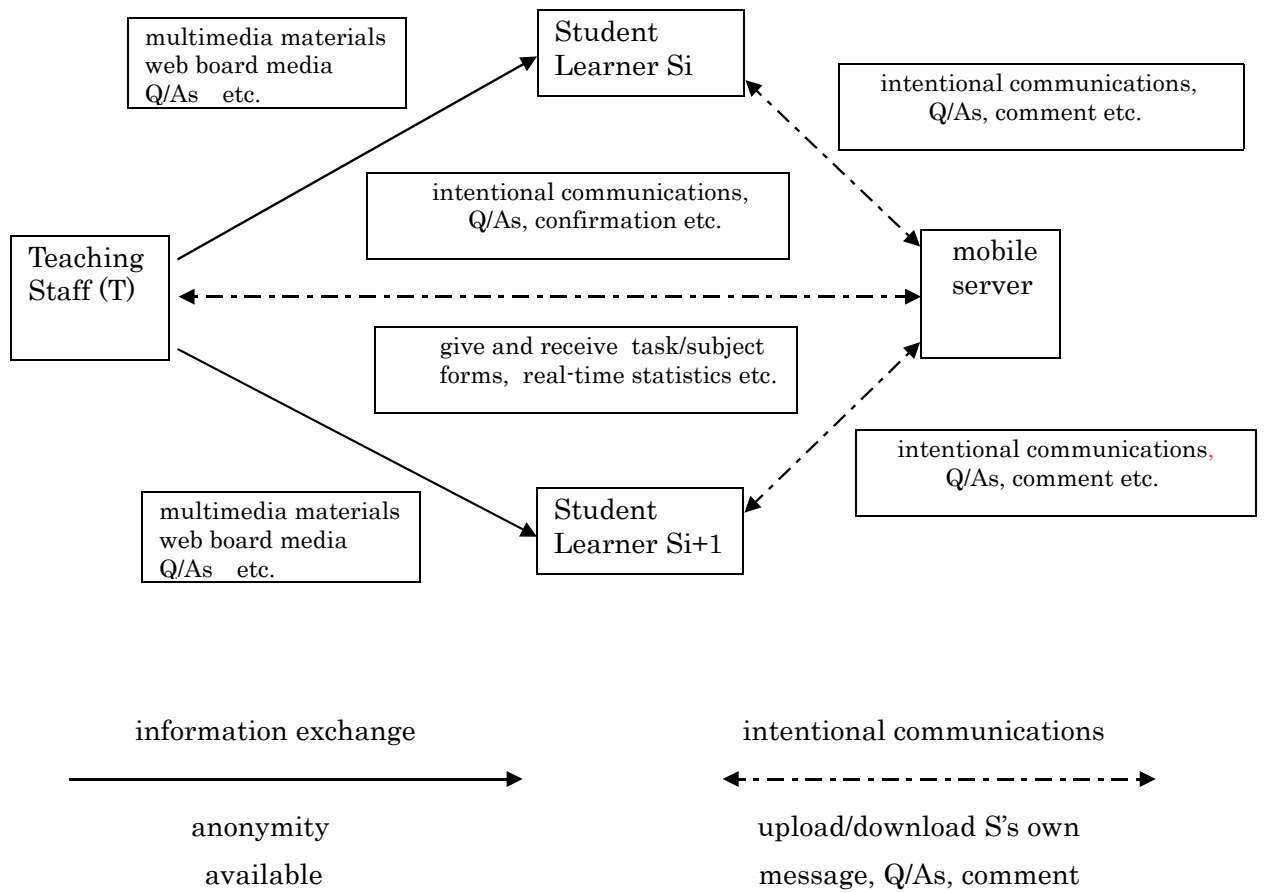


Figure 2 A practical case study on intentional communications in a multimedia computing environment.

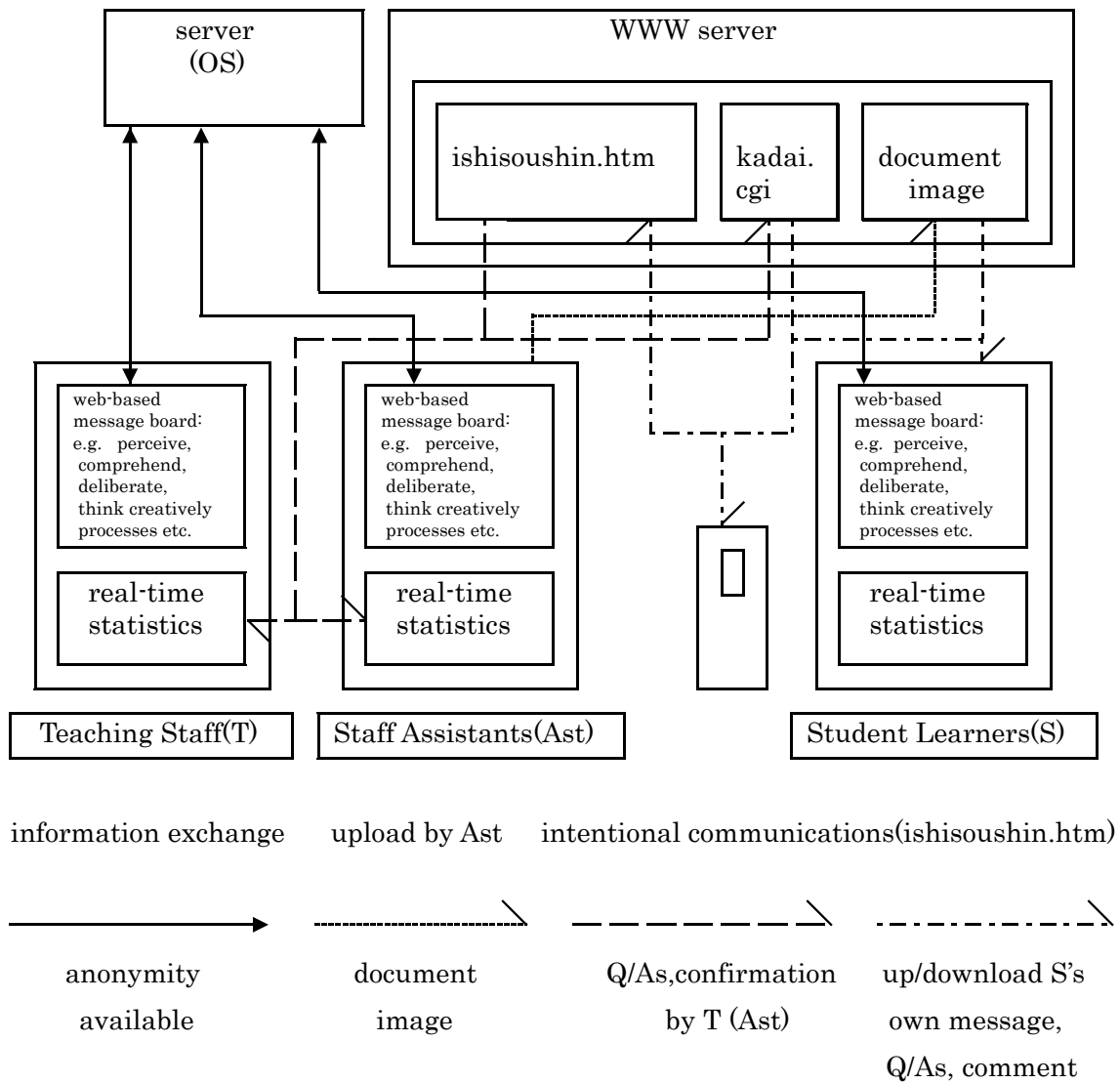


Figure 3 An extended schemes application for intentional communications with additional educator functionality.