Distance Education and Learning toward Cultural Computing through Intentional Communications in Information Networked Environments

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Abstract: - One of the most important challenges in distance learning is ensuring the quality of learning. In this study, learners are provided with cooperative aspects of learning and its applications through intentional communications, as well as knowledge and intelligence integration, ensuring beneficial outcomes of essential knowledge and intelligence to be shared through mutual understanding. These outcomes are supported by features and functionalities that have been verified for teaching and learning in real-time. Cooperative aspects of learning enable high quality communication based on design concept and design rules consistent with virtual space in information networked environments and with physical space in conventional environments. Distinct from previous styles, cooperative aspects of learning also enable the extension of individual abilities with the possibility for a more advanced intelligence to comprehend, the sharing of design concepts/thoughts with other learners and bidirectional interactions between learners and teaching staff, or among learners, without any disturbance to contexts to jointly extend comprehension with integrity (: e.g., maintaining theoretical coherence). It is important for a learner to make the best use of such a concept-mapping scheme based on integrated rubrics through intentional communications as dynamically conducted confirmation. This approach empowers learners to play an active role in deepening both their agreeably mutual understanding and shared intelligence with others. It is not necessarily concise to communicate about the assessment of qualitative and quantitative aspects of learning with possible applications in distance education and learning.

This study, introduces a concept mapping-scheme based integrated rubrics for assessment of advanced comprehension in distance education and learning with a focus on mobile communications in information networked environments. The introduction of subjects which may help readers visualize learners' advanced comprehension of distance learning, and support the extension of learning quality through possible applications, has been experimentally tested. A method should be proposed to effectively integrate vivid human knowledge and intelligence to promote shared mutual understanding and minimize confusion or disruption between them to be responsive to sensitivity. Increasingly, forms of communication that can capture possible applications are being carefully examined through intentional communications in distance education and learning to more advanced comprehension with a scope from regional to interdisciplinary siginificance, which is greatly needed, e.g. STEM (science, technology, engineering and mathematics) to STEAM (by integrating the Arts) education and research.

Thus, it is feasible to introduce cooperative aspects of learning into a conceptmapping rubrics based assessment to more objectively the quality of learning through intentional communications in real-time. It must be gradually expanded, with possible applications in both STEAM education and research basics. The forms and roles of distance education and learning are expected to rapidly evolve from the current conventional methods and lead to cultural computing phase with more innovative approaches. These approaches will offer broader options in educational processes, including the concept of a life-long educational model, which is required to empower learners from a harmonious view of intelligence and sensitivity toward artistic value/cultural significance.

Key-words: - Cooperative Aspects of Learning, Quality Platform Culture on Web 3.0 Availabilities, Robustness, Properties/Wits, STEAM Education and Research, Distributed Power Generation Systems, Social/Ethical and Cultural Issues, Closed at Hand to the Singular Point(s) of AI Engineering.

1 Introduction

Currently, it may not be sufficient to take notes for methods such as up-to-date distance education and learning. A completely digitized and electronic distance education and learning environment is not necessarily a final destination for higher education and learning situations. It can be said that one of the most important issues is learning quality[1]: what is better understanding? what is deep learning in distance learning environments? Furthermore,

what is the reality of learning with its possible applications? From a general viewpoint, it may be strictly related to the substance of learning in educational environments beyond the current deschooling.

2 An Introductive Scheme

There exist a few breakthroughs for learning quality, especially leading to forms of communication which can support an assessment in scientific fields relating to human culture[2][6][7]. Moreover, there likely exist many methods regarding the acquisition of knowledge because it depends largely on the individual learner's brain and their data/knowledge bases[10][12][14]. There are typical basic concepts, concrete schemes and clinical practices on real higher educational sites that have been integrated in cooperative learning. An example of educational core leading scheme with an assessment concept scheme is on a platform, which may be assumed to be principally similar to that on a primitive platform as depicted in Fig.1 and Fig.2. Fig.1 illustrates a conceptual image focused on the essential parts for a more advanced comprehension of cooperative learning. It can be assumed that anyone, not only teaching staff but also learners with leadership roles can participate as an educator under the necessity of advanced comprehensive processes. As one of the simplest implementations, Fig.2 depicts one of the case studies on experimental schemes for a real educational emotion and sensibilities information setting. In Fig. 2, including questions and answers denoted Q/As (: e.g., by a description of Q/A) teaching staff, staff assistants, and learners are denoted T, Ast, and S1, S2,.. Si, Si+1,... (where i is an integer), respectively.

In such lectures or seminars conducted on a practical site, it has been verified on a trial platform that it enables learners to develop a more advanced comprehension, which could be assumed to be feasibly based on all of human cognition to creation through vivid or intelligent activities. It is also important for a learner to make the best use of such a scheme through intentional communications with spontaneously conducted reconfirmation, for a learner-based driving force in a learner's more advanced comprehension or up to being led to mutual learning. In a sense, a learner is making an effort for advanced comprehension, which may incidentally lead to creation through vivid or intelligent activities. It is expected for learners to expand each conceptual scope based on mental sensibilities with regards to mutual chats or whispers, which may be helpful aids for the respective understanding through intentional communications with a mobile focus, including additional clues for deliberations of learners' advanced comprehension and may also be co-operating on learning between learners and teaching staff. In fact, it might have been practically feasible to give various suggestions or ideas for research participants through intentional communications in the research case studies. It is indicated that it could be meaningful to begin with one of the simplest types of media (e.g. web-based message board) which may have fewer constraints on media hardware and software logics/operational options for intentional communications among various kinds of multimedia telecommunications[8][11][13][15]. At the same time it is able to obtain statistics data about advanced status and degree of progress for the respective learners' comprehensions according to the progressively comprehensive degrees to orient their own abilities in a digital research educational environment toward artistic value/cultural significance With the introduction of mobile terminals, which have been more diversely and deeply cultivated under cultural situations, it would be more desirable to provide education about communication for cognitive, affective, or psycho-motored dialogues with a mobile focus on smoother communication skills under their respective potentials.

3 Basic Research on an Experimental Case Study

Multimedia telecommunications designs and experiments have been studied to overcome their limitations in undergoing an assessment for a concept-mapping scheme based on critical thinking and creative thinking in a practical manner[1][2]. Software core leading schemes have continuously been designed for advanced comprehension on the basis of such a software design concept as previously referred to complex software design paradigms[2][9].

Some case studies have also been conducted using an example of the most primitive platforms on a descriptive basis with more technologically directive audio/visual and image extensions in cooperative learning with additional clues for deliberations based on mental sensibilities with regards to mutual chats or whispers, which have increased in both speed and quality; e.g. Q/A structural analyses, multimedia materials (Q/A contents), real-time statistics and the related research and development results on themes in case studies and so on [2][3][4][5][10].

It may be said that any category of design

concepts and themes could be used as an example of the most important and difficult issues and matters in STEAM engineering education to be specifically targeted in the research. It is feasible this may be a trial case that is expected in high-end complex design situations, with mutually shared space for STEM based research: e.g., mental sensitivity and conduct information, memorandum, data/knowledge base, up to human dynamic memory and human intelligence including sensibilities. In this research, an assessment for a concept-mapping scheme is introduced for advanced comprehension with a mobile focus on interdisciplinary concepts and sensibilities. The introduction of subjects which may help readers visualize learners' advanced comprehensions, and also for extensions leading to mutual learning quality, has been experimentally challenged. This research should result in a positive suggestion on how to integrate vivid human knowledge and human intelligence including sensibilities. On a trial research platform, forms of communication which are able to capture possible applications, both an educational core leading scheme and an integrated assessment conceptmapping scheme, are able to be deliberated in distance learning for a more advanced comprehension with a scope of regional to interdisciplinary significance toward highend design.

It may be important to determine how to attain agreeable or heartfelt mutual understanding between each other (: e.g., educator and learner, learner and learner, and so on), leading to mutual understanding toward artistic value/cultural significance. At the initial stage, it may be necessary to confirm how to design concepts on a trial research platform: e.g., design concept, software concepts and so on. In the research, it may be required to arrange communication channels useful for agreeable or heartfelt mutual understanding through intentional communications between each other from the perspective of human intelligence/mentality and humanistic sensitivity/sensibilities. Increasingly, in the research, those channels may be able to be arranged through intentional communications, so as to effectively lead participants toward agreeable mutual understanding within every community or group of learners distinguished by the extent of mutual understanding.

Thus, it may be approaching extraordinarily near to agreeable mutual understanding through intentional communications toward artistic value/cultural significance. It may be essential to bring the purpose home to a reader or learner's mind. In the research there are two core leading steps as follows:

step1. advancement of comprehension; and
step2. deepening of agreeably mutual understanding from the perspective of human mentality or intelligence and sensitivity/sensibilities in search of possible applications within communities or groups. In the concrete examples, there may be some groups to be divided by an educator according to the essential extent of mutual understanding. From the perspective of practice, there may also be division into some sub-leading steps in more detail. In a case of practical difficulties, it may be necessary to introduce for communities/groups to be divided by online grouping due to difficulties in practice; e.g., communities/groups based on the different theory of value, with cultural gaps and so on. It may be feasible to succeed in capturing agreeably mutual understanding to make progress through the processes such an eminent paradigmatic example of typical concept-mapping scheme based on rubrics as shown in Fig. 3 and Table 1 to reach the final step and commence the stage where a culturally worthy result may be captured.

From such an ordinary view of human life to be providentially given in a social community/communal society through the modern culture, it may be deserving of human's efforts for contribution, at least the creativity of things/doing or not only such innovations but also much more large scale community networked communal society up to be led to socially agreeable activities based on public welfare work without any partialities so as to be essentially heightened culture through the current cultural potentials within the sphere of cultural/environmental zone with an integration of cultural capitals to be originated through such convenient and mentally challenging activities, with an orientation for the larger scale networked environments for communal societies, including socially-cultivated regions, respectively.

Not only regarding the categories of historical culture to be manifestly recognizable, but also regarding a few categories of culture may have been supported by evidence through such integrations as mentioned above (: not a category of civilization). For instance, at the same time, such expressive power of culture with expressionism may be affluent and extensive to be dependent on the situations as if it were alive (: e.g., about STEAM activities and works, inscription, dialect etc.).

In summary, it may be slightly difficult to conduct such a design review that takes into consideration an example of possible applications on high-end design about social community/society standard architectural systems and schemes to few

communities/societies/country within the sphere of cultural/environmental zone wide systems/schemes which may have been spontaneously perpetuated due to essential culture categories without any kinds of impractical design reviews, even if taking into consideration the different political perspectives.

Referring to the examples in Fig.3 and Table 1, it has been relatively effectual for more advanced comprehensions through intentional communications with an assessment concept-mapping scheme (e.g. integrated schemes) and a trial solution oriented toward cooperative digital creation, as compared with such constrained communications which are conducted through virtual space, which is needed to take existing conditions into consideration based on the design rules consistent between the virtual space and physical space in practical environments[7][10][15][16][17].

4 Concluding Remarks

On a trial research platform, forms of communication which are able to capture both an educational core leading scheme and an additional scheme based on the integrated rubrics are being deliberated in distance education and learning for an advanced design concept with a scope of regional to interdisciplinary worth, which is greatly needed, e.g. STEM (science, technology, engineering and mathematics) to STEAM scientific fields on human culture, especially toward high-end design. And in cooperative learning, it may be expected for each learner to be assisted in deeply comprehending other learners' intellect and emotion according to agreeably mutual understanding to surpass a work in progress toward becoming a work of high-end design, which may be powerful for the respective learners' advanced design concept.

It may be suggested for the respective community members to orient toward higher quality activities in any kinds of active communities, referred to as cooperative aspects of learning with its possible applications on high-end design. That is, an impartial scheme on current community/group activities may be extended and qualitatively integrated with mentality/sensitivity from other community/group activities or also from natural living activities in the world-wide areas for a more profound understanding about how to design by way of such a harmonious power between human mentality/intelligence and sensitivity/sensitibilities through intentional communications that have a high potential to affect respective learners' ability.

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Teaching
Staff

Optional Learning
with its Possible
Applications
Processes

Learner

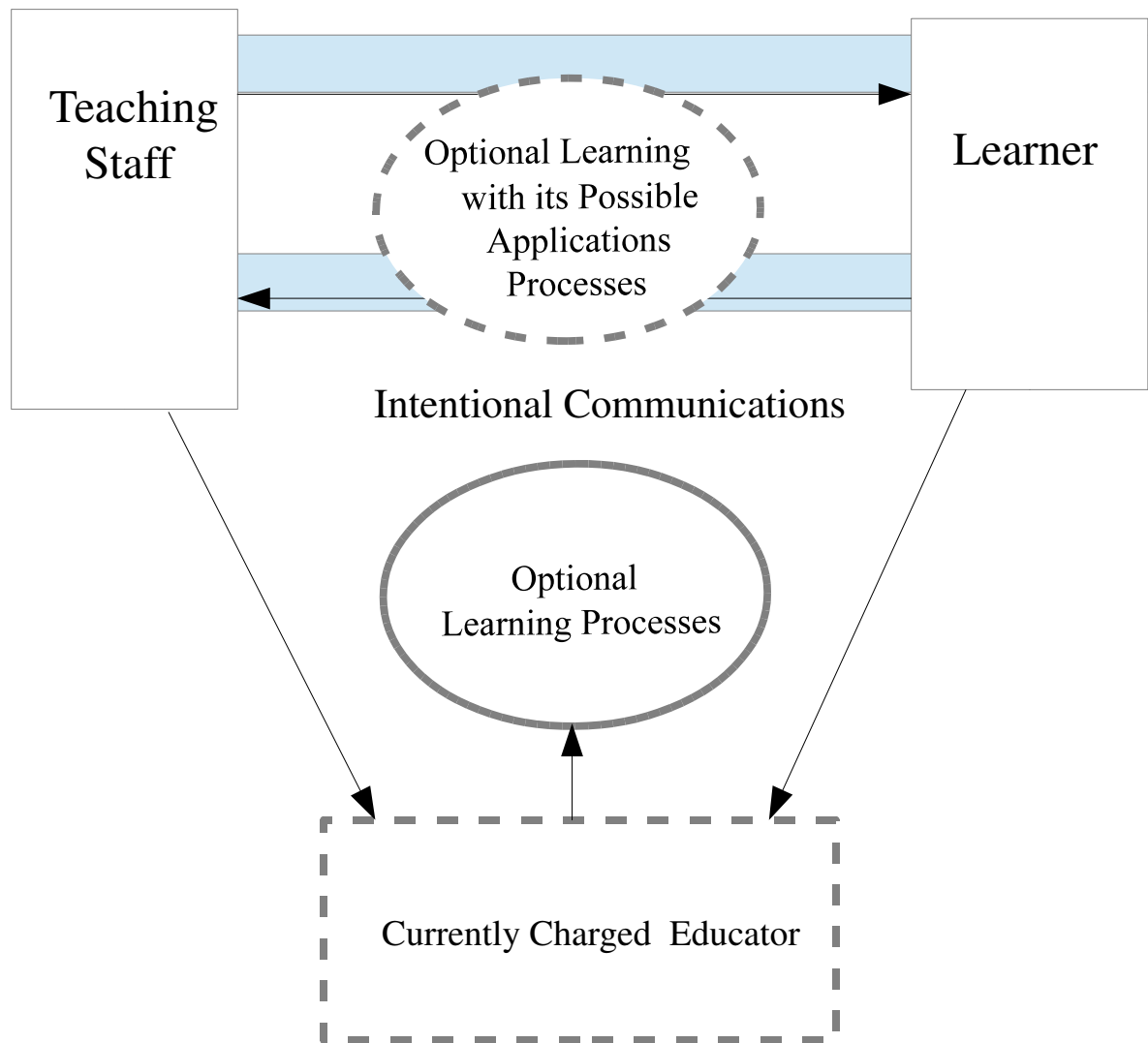Intentional Communications

Optional
Learning Processes

Currently Charged Educator

Fig.1 A conceptual image for cooperative aspects of
learning and its possible applications to advanced comprehension.

multimedia materials
web board media
Q/As etc.

**Learner
Si**

intentional communications,
Q/As, comment etc.

**Teaching
Staff
(T)**

intentional communications,
Q/As, confirmation etc.

mobile server

give and receive task/subject
forms, real-time statistics etc.

multimedia materials
web board media
Q/As etc.

**Learner
Si+1**

intentional communications,
Q/As, comment etc.

Educator
Staff Assistant(Ast)

intentional communications,
multimedia materials to Q/As,
real-time statistics etc.

information exchange

intentional communications(ishisoushin.htm)

anonymity
available

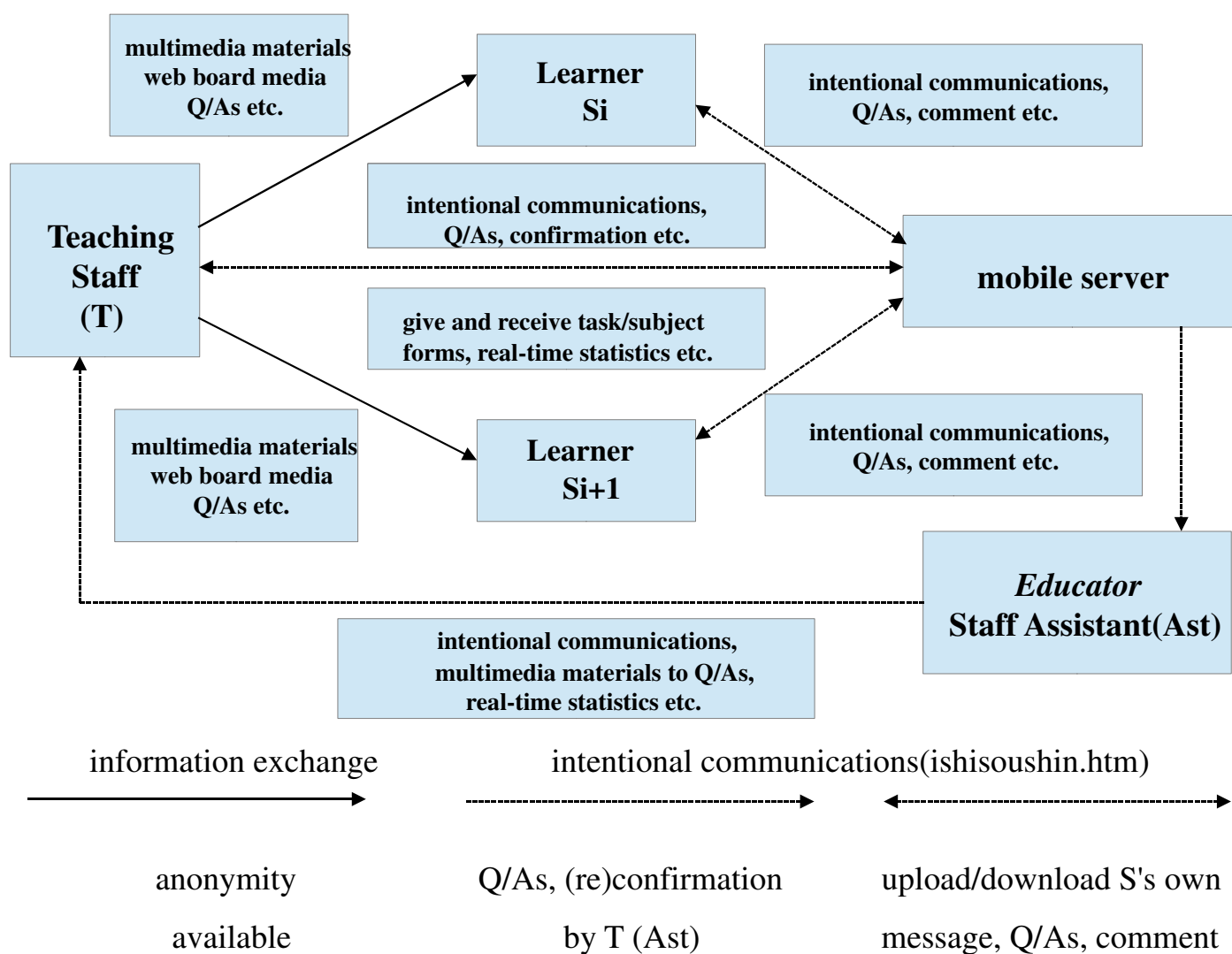Q/As, (re)confirmation
by T (Ast)

upload/download S's own
message, Q/As, comment

Fig.2 An example of experimental schemes

through intentional communications extended with educator functionality.

server (OS)	WWW server		
	ishisoushin.htm	kadai.cgi	document image

web-based message board: current processes to assess the mapped rubrics integration

real-time statistics

web-based message board: current processes to assess the mapped rubrics integration

real-time statistics

web-based message board: current processes to assess the mapped rubrics integration

real-time statistics

Teaching Staff(T)

Staff Assistants(Ast)

Student Learners(S)

information exchange   upload by Ast,   intentional communications(ishisoushin.htm)

anonymity available | document image | Q/As, confirmation on concept scheme by T (Ast) | up/download S's own message, Q/As, comment
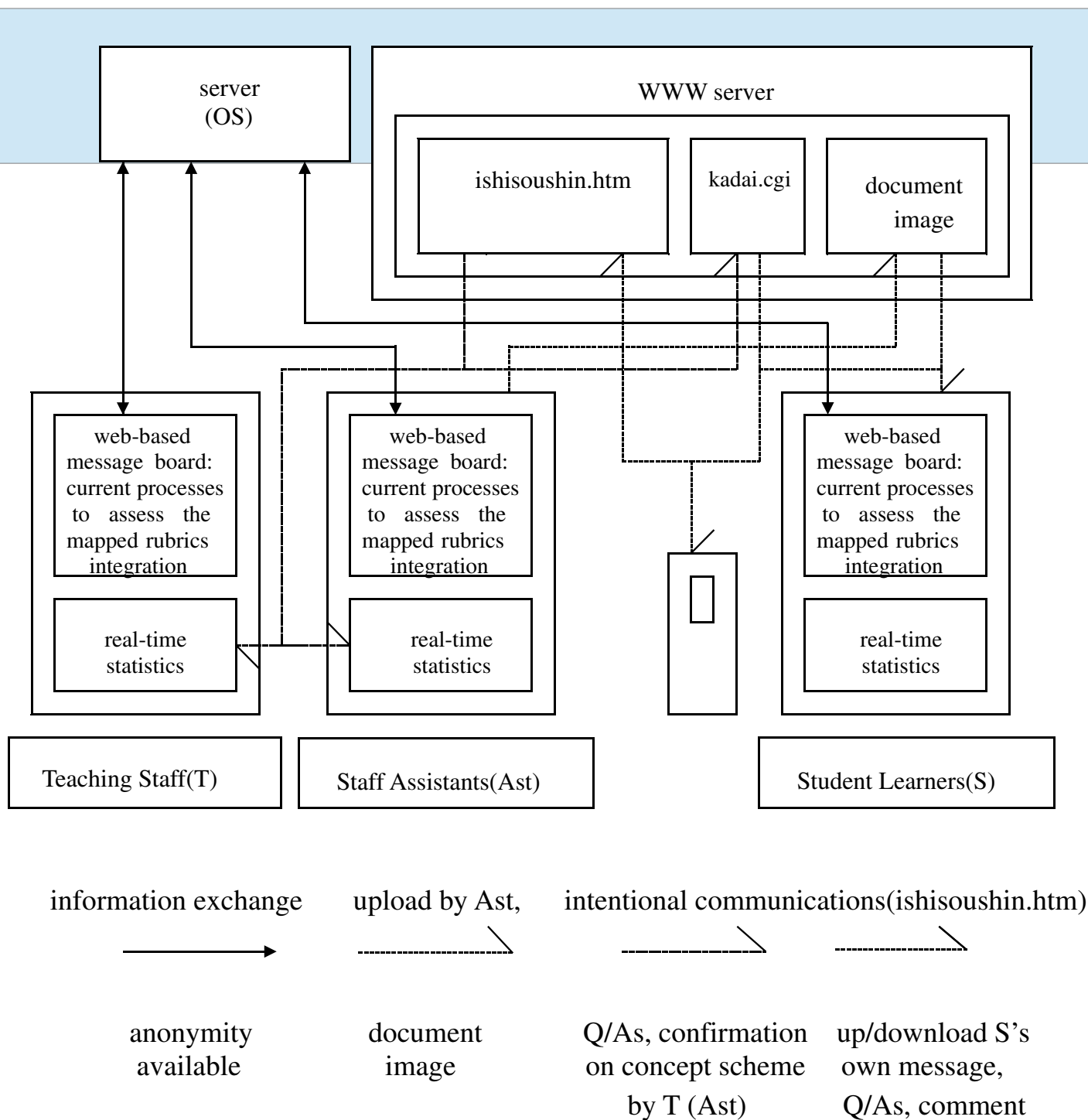
Fig.3 An overview of assessment schemes applications for integrated rubrics through practically intentional communications in a multimedia computing environment.

Table 1 Concept mapping-based assessment.

Critical Thinking & Creative Thinking Integrated Rubrics

	Capstone 4	Milestones 3 to 2		Benchmark 1
Conceptual explanations of issues/problems	Stated clearly and comprehensively, delivers all information for full understanding.	Stated so that understanding is not seriously impeded by ambiguities.	Stated, but with some unclarified terms, regions, backgrounds or ambiguities.	Stated, without any clarified terms, descriptions, etc.
Evidence documents, selecting/using on a point of view or conclusion	Derived from sure sources for advanced comprehension. Well-reasoned viewpoints of experts.	Derived from sources well enough for comprehension. Enough viewpoints.	Derived from insufficient sources for comprehension. Sources are uncritical.	Derived from sources without any thought. Omission of expert opinions.
Influence of context and assumptions	Thoroughly analyzes own and others' assumptions, and carefully evaluates contexts when presenting a position.	Identifies own and others' assumptions, and evaluates several contexts when presenting a position.	Questions some assumptions. Identifies several contexts when presenting a position.	Shows an awareness of assumptions, but also some label assertions. Begins to identify contexts.
Learner's position (thp: thesis, hypothesis, perspective)	Specific position (thp) is imaginative, and takes into account the complexities of an issue. Limits of position are acknowledged. Others' points of view are synthesized within a position.	Specific position (thp) takes into account the complexities of an issue. Others' points of view are acknowledged within a position.	Specific position (thp) acknowledges different sides of an issue.	Specific position (thp) is stated, however, it is simplistic and obvious.
Conceptual contents	Perceived that if full of relevant concepts, use is good.	Most concepts are others taught in classes, except for a few limited ones.	Scarce concepts. Many more improper ones are included.	Under Milestones 2.

Concept formation	Able to timely make the best use of concepts for advanced comprehension in a timely manner.	Makes an effort for an original formation, but is restricted.	Not easy to make such a formation, including original ones.	Unable to make such an effort.
Linkage spanning	Many proper linkages are spanned among concepts. Flexible structures are feasible: hierarchy up to plexus with complexities.	Not so many proper linkages. Hierarchical or branching ones are not enough. Partial crisscrossing found.	Spanned linkages are improper. For example, hierarchical or branching ones are not found, as well as with more complex ones.	Under Milestones 2.
Relationships of linkage	Many meaningful ones are included and are suggested also among linkages.	Many are included, but such improper linkages are found.	Few are included and many improper linkages are found.	Under Milestones 2.
Descriptions centered on a thesis	Conceptual mapping is focused on the thesis and completely expressed without inconsistencies.	Conceptual mapping is related to the thesis, but restricted to partial relationships.	Make an effort to center on the thesis. Such mapping is slightly unrelated.	Under Milestones 2.
Conclusion & outcomes	Conclusion and related outcomes are logical and reflect learner's evaluation and ability to show evidence or thp, discussed in order.	Conclusion is logically tied into a range of data, including other views; related outcomes are identified clearly.	Conclusion is logically tied to data (which is chosen to fit); some related outcomes are identified clearly.	Conclusion is inconsistently tied to some data discussed; related outcomes are oversimplified.

Capstone 4	Milestones 3 to 2	Benchmark 1

Note) thp: thesis, hypothesis, perspective. Specific position
includes a thesis(to be centered), hypothesis or perspective.