NOTE

e-Learning and Higher Education in Japan

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Expectation and Criticism to University

The criticism and the expectation for the university have been often repeated up to now. The university has been denounced by the public many times in the past as follows. Universities are "Ivory towers" and they do not try to respond to the request of the society. Universities are in the place in which they were far apart from the people and widely different from a realistic society. It seems that they are not facing at the direction of the present trend.

On the other hand, there is a person who finds universities significant existence meanings. That is, universities, keeping a constant distance from the present world, are well managed. Also they are searching out "seed" of the development of the society and are creating "bud" of the world. In such a meaning, it can be said that the posture of the university that does not easily long time. In this issue, we may say that the criticism to the university originates the fact that the university begins to be paralyzed in the distance feeling with this world. The clever balance between the university and the society has collapsed by the distance feeling with these people.

The world has continued to change dramatically. The university has been often left from this real society that is rapidly changing. This is clear that the unbridgeable gulf of the university and the society is not happy situation for both parties. However, universities seem to shut themselves up in its husk and lock their doors. As universities do so they affirm an undesirable situation.

This problem might originate partially in a historical background of the higher education system in Japan. This system was strongly related to the national target and the policy of

construction of the modern nation, which is well known by us. The government wished to control strongly over not only National Universities sited in the whole country but also private universities. There is a fact that the present higher education system of Japan has been established in such an above-mentioned situation. It might be an effective measure that the higher education system has been established with a strong official control, because the fundamental for the nation-construction was so poor to speed up the modernization at that time.

Perhaps, at an initial stage where a modern system is established, the government is likely to hold much control. This is not only a case of Japan but also of other countries. As a state is modernized, the control to a university becomes smaller in general. However, in the case of Japan, since World War II had broken out in the Showa era when the university system was almost in order. It led to the continuance and the reinforcement of the control over the university by the state again. The university in Japan was completely impoverished in the war. The university was not able to revive by own power. Consequently, the government needed to give the assistance not only with National Universities but also private universities. Those historical backgrounds will influence in various respects in the university system of the present Japan. As a result, a historical condition might also influence the position of a university in the present Japanese society.

Anyway, such a situation is nothing less than a misfortune. The university tries to advance on an own road besides the main stream of the society. The society criticizes that the university does not ride on the flow in the present trend. Moreover the university shows a cold heated reaction as we have seen even a kind of taking a defiant attitude.

At the time when the movement of the society was made comparatively slowly, the university, in a sense in a relaxed manner, has been allowed at the people. The speed is necessary aspect in various scenes in the society.

Of course, university should not have temporized to the fashion in the society. It is also true that the world does not hope so. However, keeping a certain distance from the real society the university should catch the essential change and how the big undulation to people. This means that the university must not be a mere onlooker at the changing world.

Especially, the change of a situation of today in the field of telecommunication technology is also intense, and the changing world asks to break out externals of the university. The development of this telecommunication technology is to say that it influences as the Industrial Revolution did. The influence might be wide and deep. This "IT revolution" presses a big adjustment including our lifestyles and values. The university cannot also correspond to the change well like being so the society because the change in the situation

is too rapid. However, we can say that the mission of the university will be asked. The university should show the appropriate view what influences the coming of a highly developed informationalized society gives to our life.

This report applies the focus to the problem of the multimedia and the university education. The work on the information technology and the multimedia was positive in the higher education organization such as universities from at first. How does the teacher use to research and to educate the multimedia environment? It is true that teachers have examined the possibility and availability of using the multimedia enviconment. The usage possibility will have to be examined in the future because the appearance of a new multimedia technology never cuts. On the other hand, It can be also seen that there is a movement of the evaluation or reexamination as to the multimedia.

"Multimedia" and "Multi-media"

The class of the university is various[1], and we cannot indiscriminately discuss the matter. However, it is not too difficult to show one type in case of the class of the lecture form of the social science that intends for comparatively a lot of students. The professor specifies the textbook for the student in the syllabus in advance, and in many cases he or she requests the students to bring it in the classroom every time. The students are expected to read two or more reference books at the same time. It is not rare that the professor distributes in the lecture the printed matter called a resume besides the textbook. Professor often uses the video device that is provided in most classrooms, and he or she uses the video teaching material that uses a part of the program telecast with the television. Professor explains with the monochrome imaging materials that need not be made animation by using OHP. The environment where it is easy to use OHP is ready in the classroom now. There are a lot of professors who use OHP most according to the resume in which the progress of the class. Of course, a conventional method where professors write on a blackboard by using the chalk (or the white board with ink) is still also common.

Thus, the class of a university have been performed by utilizing two or more media, such as writing on a blackboard, a printed matter, a motion picture, a sound, an image and so on. Since lecturer uses two or more media as teaching materials it can be said that "multi-media" in a certain meaning has already done the university education. However, there is a point where the "multimedia" that is going to be discussed here is utterly different from "multi-media" definitely. For instance, it is almost the case that the distribution from of the data by which the teaching materials shown by OHP are once distributed by printed matter only replaced OHP from paper. In a word, OHP is an

alternative mean of media of paper, and there is almost no relevance between media of paper and media of OHP.

Here, I would like to arrange the meaning of the multimedia. The word of "multimedia" was frequently observed in the latter of 80's. Recently, "multimedia" might have become a general language that permeated widely. The item of "multimedia" that had been found in "Imidas" was deleted in 1999. Also, "multimedia" became only an easy explanation as a loan word. "Multimedia" can be concisely explained by Imidas 1998 versions immediately before being deleted as follows: "Method of the Integration of digitalized data such as a character, mathematics, a sound, a still picture, an animation and so on." "Chiezou" of 1999 version, which is one of another typical term dictionary, explains "multimedia" as "the form to be able to operate processing by integrating them into a past character as information that the computer treats in the form of digital information including a figure, an image, a voice, a sound, animation, and a solid image." Basically, it can be said that the multimedia[2] can integrate three kinds of information elements including a kind of sound, an image, and data.

The most important function of the multimedia is to integrate two or more media and to make them treat as a single medium. There are backgrounds related to a digitalization of information, a computer technology, a digital information and a transmitted network. In general, three areas can be pointed out as a primary partition of the multimedia as follows: (1) the platform (installing device and operating system), (2) the network environment, (3) and digitalized contents. Just as a blackboard and a piece of chalk are indispensable and some sheets of paper and inks are necessary for the print thing, so the platform and the network-environment are crucial conditions for the multimedia.

In the viewpoint of education at the university, those three domains bring a serious problem and become a bottleneck in the case of practice. A huge initial investment requires for maintenance of network environment as compared with preparation of paper and ink. It can be said that whether the multimedia environment is achieved in the limited resources in university will have strongly affected the success or failure of the multimedia education.

Education and Multimedia

The Open University is often taken up in many cases as an example of laying case of the multimedia and the education each other. The Open University is a higher education system that started in 1969 in Britain. This high-education system that utilized the mass media, such as the televisions and radios, has been carried out for all the British residents. This education system has tried to combine various adult-education institutions in the

provinces and distance-learning courses, and gave the citizens the graduation qualification from a university. Afterwards, the same kind of opening college was developed in the United States and Germany. In this sense, the Open University in Britain was an outrider-example. The University of the Air that is executed by NHK is Japanese versions of the Open University in this Britain. Recognition that the higher education is only possible to be received inside the campus was overturned by using the developing mass media. The Open University in Britain was an epoch-making system in the point to have created a basic type of the distance learning of a higher education. However, the utility methods of some media in the Open are different from the contemporary multimedia-education-system that we are going to discuss.

The contemporary efforts for multimedia and education in a campus became realistic after entering in 70s when spread in the education facilities of PC devices that come to realize the network environment. Also for the performance of the computer, it was so poor as compared with the present devices. Also some surrounding technologies such as an information compression technology were also still undeveloped in 70s. Furthermore, there was a restriction when the network environment was built, since most of the network environment had to be designed on its own account and at its own expense. A big system was necessary in order to treat two or more digitalization informational data such as on a text, an imaging data, and a sound. Specifically, in order to transmit the multimedia-data to a remote place the dedicated lease line was laid and the communications satellite was minded by the case. That is, a great initial investment was required to maintain and improve the multimedia environment. Although it is possible to fix it by half the expenditure of the necessary capital by given of financial assistance of the subsidy from the government for the university, this is not few amounts of money of the investment. Moreover, at least the special staff involved in the multimedia was necessary, if not so, neither a teacher nor a student was able to use it readily.

When we have discussion with peoples at the remote place via TV, it is most likely to require a dedicated line and some network administrators of devotion. All participants sit down at front of the monitor and the console, and the whole members and the individual are projected onto the monitor at the same time. In order to transmit those huge imaging data to the remote place a lease line and/or a communications satellite is utilized. Thus videoconferencing progresses. There has been a virtual class at a campus to make good use of such a high technology. Concretely, a joint research of Kyoto University and UCLA, the satellite lecture of the Kansai University graduate school that is carried out on Osaka Kita-ku campus and 20 km away from Takatsuki campus, and the research presentations

interactive meeting held on Kansai University graduate school and Keio University at SFC campus are typical models utilized multimedia.

As to a higher education we can see the "heavy" multimedia environment, which is received much high-tech benefits but requires a big investment. On the other hand "light" multimedia education system is now appeared. The background for the "light" system is including a development and widely spread of a PC and an efficientizing of network related technology, and especially the rapid spread of Internet availability. Up to now, huge data could be sent only by the dedicated line. However it is enabled to pour those huge data into the Internet that passes a general telephone circuit. In a word, it is an image of a light multimedia in which existing information processing technology and an existing network environment are used. Specifically, that is the web environment.⁽³⁾ This "light" multimedia environment is showing a possibility that it is equal to the "heavy" multimedia education system.

Pioneering lecture has been executed in Keio University at SFC. It was tried with the basic subject of Keio University at SFC, "Social research method." The course of "Social research method" was started at the semester of autumn in 1996 and had comparatively a lot of students enrolled as about 250 persons. Prof. Senoo, Sanno Institute of Management is a part-time lecturer that suffers much restriction. He experimentally attempted the multimedia education in the web environment in Keio University at SFC. Prof. Senoo had worried about a limitation of a report examination that the evaluation for the student is given from only the result and he could not guide on the process of a class as he has experienced. As a method of performing instruction in an on process in the course with many students enrolled, he tried to guide the "methodology" about a social research with the project base. He gave an important role for the homepage and E-mail on web.

First of all, Prof. Senoo established the homepage of the subject itself at his lecture. This homepage did not contain only a syllabus of his lecture. It was not only the homepage that provides students with information on one way. Offering the information concerning a lecture on semi-real time, it played an important role as an interface of a lecturer and a student. Moreover, the group that consisted of three or four persons served as a unit of the project. Seventy groups were established and they uploaded the homepage respectively. In their homepages, enrolling students exhibited the process and the progress report of the activity of each group on a semi-real. A lecturer examines the contents of homepages exhibited by each group, and a comment can be added timely to students. As contents of the homepage are open to the public, groups can examine each other. Students who attend his lecture add correction on the basis of his comment. Students can continue to study

without a directional mistaking.

A student is able to observe those homepages that other groups open to the public. A student compares their homepages with his homepage. Also a student is carrying out self-evaluation continuously. In parallel to that, communications by e-mail are performed among lecturer, SA$^{(4)}$ (student-assistant) and students enrolled. Finally, it is reported that there were finally more than 2000 copies of e-mail that they have been exchanged during the semester. Since the whole information on lecture is mostly opened not only to students but also to external people through a homepage, there is also exchange with the outside-the-university person whom concern has. Prof. Senoo has pointed out that it was effective in the criticism and the comment from a specialist of such exterior raising students' volition.

The higher education that is utilized by a light multimedia such as a system using web and e-mail is progressing rapidly. The trial in which not only each class but the whole educational course is managed on-line basis appeared. It seems that the result has gone up it.

Some universities and graduate schools are utilizing positively as the new method of remote place education especially in the United States. At the end of 1999, many students are provided with 105 classes at the extension course that is the distance-learning program of UCLA. More than 300 courses can be online-studied at the New York State University via the Internet. Moreover, at some universities in United States, the on-line lecture is increasing. Even if a student does not go to the campus at all, the credit of the unit can be taken. Universities that give the master's degree and even the doctor's degree only by on-line education have been increasing.

Not an obscure university but a famous university is eager for recruiting a student by performing an on-line study. This point deserves attention. For instance, master's degree can be earned online from schools as prestigious as Stanford University. However, cyber-students may not be getting a bargain. Stanford University, which traditionally charges higher tuition to part-timers bills a distance-learner about $45000 in tuition to earn engineering master's degree versus $26000 for a classroom student. It is quite interested that low-tuition students do not use the campus at all. A cyberstudent's tuition is about 20000 dollars higher than a usual student is. In addition, there is a course where MBA can be acquired in the Duke University graduate school. At the John Hopkins University, master's degree of the public health can be acquired on-line. There is an online course for the doctor's degree of the nursing study at the Duncan　University. The bachelor's degree, the master's degree, and the doctor's degree can be online acquired from among 20 courses

at the Phoenix University. Nihon University is setting about the graduate school utilizing the Internet also in Japan. Such a tendency would be expanded increasingly.

The Business Week magazine of October 4, 1999 issued the special edition of the volume exceeding 70 pages from the 42nd to the 118th that can be regarded as exceptional. It is describing whether the development and spread of the Internet have what influence in the special feature article entitled "The Internet Age." It describes how the influence of the Internet will become in the future. The article is separately explained about the business, the government, and the society.

Six topics are introduced in the part of business, which includes the influence of the Internet in a consumer's purchase action, manufacture field, and finance, etc. Two topics are reported about the influence of the Internet to the government and politics. One is the topics about what influence www of the Internet had on the issue involved with politics such as a Chinese democracy movement and an ethnic conflict problem of Serbia and Kosovo. Another is the topic about the regulation rules of the network contents involved with copyright.

This special edition of Businessweek has carried five reports about the social influence of the Internet. It is of the same volume as the influence on business. The first report is the subject about the education entitled "School Is Never Out." It is suggested that the possibility to be greatly transformed in the education system is increasing by the development of a multimedia environment.

Let me easily introduce the article "School Is Never Out." At first the Business Week magazine introduce some examples of the correspondence course of a university and a graduate school that utilize the Internet. It is predicted that the form of such higher education is likely to increase in the future. It is because "update" of education is needed when a person starts to work in an office. Where only 400 company-run universities, synthetic high-education institution, operated in the United States in 1988, there are now more than 1600, according to Corporate University Xchange Inc., a New York research and consulting firm. Moreover, it is also one of the reasons that a company-run university can correspond to a broad educational field by use of the Internet. Taking in the Internet opens a course of many lectures that suited the needs of the occupational people. It has also been the strong point of a Company University. Consequently, it is different from the conventional lecture for credit acquisition of an academic university

The existing university also corresponds to the change of the above-mentioned situations. For example, it is even possible to acquire a master degree by "online." The Businessweek magazine introduces the case with the university with a high prestige like

Stanford University. It might be suitable for a graduate student of character who wavers for the discussion with professor of charge after the lecture. In a cyberclassroom, students too shy to raise questions in person may be less inhibited, and the answers they get from peers and teachers may be better thought out. What is more, there is no hasty scribbling of notes from slides when the whole slide set in downloaded.

There is some criticism to such a situation. "There is no substitute for the academic environments," insists Carole S. Fungaroli, an adjunct professor of English Literature at Georgetown University and author of "Traditional Degree for Nontraditional Students" published recently. "As professors, we can really change students' lives, but not if we never see them, not if we are never face-to-face," she described. She has emitted warning about the cyber-student.

The importance of face-to-face between a student and a teacher may decrease in the future. The way of education and the form of study tend to be changed by the Internet, however. Businessweek introduces the graduate student who learns on MBA course of University of Toronto. MBA students at the University of Toronto still meet with professors and fellow students in classrooms. However, they typically download lecture notes in advance, discuss them in online chat rooms, and swap materials for group work electronically. Instead of spending the wee hours at the library, they are often hunched over computers at home. The figure of the conventional graduate student who spends much time at a library is differed from greatly.

Benefits and Problems

We have already discussed some advantages in the "light" multimedia environment. Some benefits are as follows:
- Practical use of the existing information system
- Possibility of instruction of an on-process
- Effect of target benchmarking at any time
- Possibility of external evaluation
- True computer literacy

Construction of multimedia environment is not directly connected with the increase in efficiency of university management. It needs not only a great initial investment rather, but in accordance with technological development an additional investment may be needed. Moreover, a university may have to secure the staff of devotion. Therefore, these become a new cost factor. Because the whole on-line educational program becomes large-scale system, realizing multimedia environment becomes more difficult. However, almost all

universities install a server for an Internet connectivity, get mixed up with it, and yard LAN was fixed in recent years. The teacher accesses the Internet from the personal computer at his/her laboratory or home, and the students access to web sites from personal computers in a campus easily. It can be said that the direct cost factor about the multimedia education was lost now.

In the viewpoint of the educational effect, the possibility of an on-process instruction can be pointed. Although it depends on the character of the lecture, the "process" of learning is to be said as quite important. In a classroom with a small number of students such as a seminar it is possible to follow up the process of learning by a student. However, it is the lecture that the student whom a large number registered attends, and it is almost impossible to practice the lesson whose teacher thought the process as important. In many cases, a report is made to submit in the middle of an academic term, and the professor can check the learning process partially. On the basis of the report, the teacher is checking the process. It is like this catching a field at a point completely. Setting an interface of a homepage between a teacher and a student, it is enabled to catch the learning process of a student in detail.

Moreover, a kind of benchmark effect is expectable from the high glasnost characteristic that a homepage originally has. It is difficult for each student to get to know relative evaluation of the report that a student submits. Usually, it is impossible to know in what study level he/she is. A homepage not only exhibits its learning process for the student, but also tells other students' process. It can judge personally whether own level is relatively advanced or it is behind.

Furthermore, when a lecture is carried out in the environment linked to the Internet, it is possible to open to persons related to a lecture or not only an intramural person but also many. In the case of the subject of a social science, it is fully also expected that those who are present in the field of the actual world are concerned about a lecture, and they could add a comment to a homepage. It would serve as a stimulus good for the students who become motive attachment of learning and also for a professor who is charge of the lecture.

It has been a long time that the importance of the information literacy skill is cried for. As to the education in university campus, it is the almost same situation. Everyone could accept that there have been great efforts paid until now in university. However, there is much criticism that the student has not attached information literacy to the body at all, on the other hand the literacy education in a university is just teaching the literacy itself. For four years, student graduate from university with no chance using the put-on information literacy that has taken for four years. Then his/her skill is going to come to an outdated

literacy. The criticism for universities is considered to originate in this point. In respect to the information literacy, the most important thing is a chance using it. It could be expected that a student could acquire true literacy by touching Web environment directly.

Although there are some above-mentioned advantages in "light" multimedia environment, the problems also remain by one side. According to the research performed in 1998 by the private university information educational association,[5] 6458 persons out of 8262 university teachers who uses the computer by the lesson answered that there is a problem on use of PC among 8262 persons is reaching 6458 persons. This is 78% of computer-using teachers. However, there are 6163 teachers who using a computer in their classes out of 6458 teachers have answered as "using PC is effective." This corresponds to 95%. That means, almost all teachers accepting the effectiveness of computers, however they are advancing classes while having some problems.

PCs are used in the class	There are some problems in using PCs	Utilizing PCs is effective
8262 persons (100%)	6458 (78%)	6163 (left: 95%)

Source: "Report on Utilizing Information Instruments at Private Universities in 1998 fiscal year" May, 1999

Problem relevant to Students

It seems to have been given priority in the operation of the computer as to an information literacy education. That is, a student exercises to operation of starting a computer, starting the software, performing input, saving data, and outputting. However, in order to advance a lesson in a multimedia environment, the skill (for example, data is uploaded to a homepage) which connects with a network and uploads data to a network in addition to the above-mentioned operation is indispensable. Since it was not premised on the computer used at a university being used on a network until now, it must be said that literacy education is late a little in this field's. Although the network server of a university had hard restrictions and the intermediary of becoming excessive load when it became the situation that a student accessed the network of a university individually, such a bottleneck is being canceled at almost all universities in recent years. Therefore, it is the problem of what to educate to a student how.

Even if the literacy education about a network is substantial, the gap of a student's literacy may be in a problem. The teacher who answered "A lesson does not progress satisfactorily since individual difference is in literacy" to the result of the questionnaire

introduced occupies 33.8% of the whole university. The ratio will become 44.1% if it restricts to the teacher of social science. It has suggested that the problem of this literacy gap is very serious.

A certain kind will need being businesslike or gives a clear-cut attitude toward the information literacy education in a university. What literacy does a student need? A student does not need to learn advanced skill from the beginning. It is because information literacy has the characteristic of being gained by practicing it as I pointed out previously. The composition and the layout of a homepage are refined gradually. We know that experientially. Poor literacy skill will be improved accordingly as it repeats. Therefore, when performing literacy education at a university, the teacher should specify the minimum level that a student has to acquire. The viewpoint of making a student clear the level is important.

Problem Relevant to Teachers

The result of investigation conducted by the Private University Information Educational Association reported "a teacher's burden increased" as a problem of use of the information apparatus in a class. Also, 35.3 % of the whole university teachers answered that a teacher's burden increased by using a computer. When it limits to the teacher of social science, the ratio shows 37.6%. Even if creation of teaching materials is a teacher's burden, it is unavoidable as preparation of a lecture. If a teacher corresponds individually with a student by the e-mail, a teacher can do fine instruction to a student. On the other hand, instruction with the e-mail to a student requires long time. Anyway, a teacher has to undertake an additional burden.

The writer is taking charge of a class with about 80 students who belong to the seminar and about 100 students who have registered with my lecture using web. I have received about 20 copies of e-mail from the student every day. Although the greater part of the e-mail is a mere announcement, the mail that must spend time is also included. For example, some students send e-mails that they asked to discuss the matter concerning to the theme of their graduation theses. Consequently, you have to spend on processing and reception of mail at least for about 30 minutes at a laboratory or home. Does the communication in a campus decrease by communication with mail? An answer is "no." The answer is reversing rather. Sensuously the more communication with a e-mail with a student increases, the more I can regard communication in a campus as becoming deep. It is thought that it becomes a large future problem how the increase of an absolute time burden is solved.

Other Problems

According to the result of the questionnaire survey conducted by the Private University Information Association, there are another problem as follows: Since the amount of information increased, a student could understand adequately.

—A student stops taking a note.

—Although a student seems to understand, he does not understand in fact.

—A student uses apparatus.

—Originality is missing although operation technology and announcement skill improves.

—A student goes to sleep, since the room is made dark.

—Virtual experience increases and actual technology runs short.

—A teacher cannot almost afford to correspond new soft and latest equipment.

—Since preparation of teaching materials has a large burden to a lecturer, a powerful auxiliary staff is required.

—In a first-time lesson, a student's individual difference is large. Although individual instruction is required to conquer, a teacher's burden is too large to care of students.

—Arranging teaching materials and is uploading to web are fairly hot work every week.

—It takes much time to instruct operational skill so main subject cannot be tackled enough.

Maintenance of the Multimedia Environment

It has been thought that the barriers for realizing multimedia education are some equipments and a hard system. However, the most important thing for the maintenance using multimedia at university is in a personnel problem. It is the almost same in "heavy" or "light" multimedia environments. It is problem for the skill of the student who learns in a multimedia environment and also as above-mentioned.

According to the investigation of the Private University Information Educational Association, about 60 percent of the university teacher have answered as follows as an information environment desired. "The necessary personnel who operates and apparatus in a lesson the teaching staff," "fullness of institution maintenance / support organization which can process data electronically easily," and "reservations of the coordinator who supports a lecture" are desirable environment. It is also clear that a human-related problem is important. Moreover, these results of an investigation have suggested as follows. In order to manage the lesson that took in multimedia environment, it is exceeding a one teacher's capability. "Maintenance of the information technology training for teachers" is

environment which 40 percent of the teacher desire.

Some maintenance of hard environment is also pointed out. More than the half of the university teacher wishes "lending one note personal computer to a one student." "The open hours of a computer study room is extended", it is answered that about 50 percent is desirable. However, maintenance of the environment which a student connects with the server of a university from home, and uploads a student's homepage and downloads teaching materials. It is not only the problem that a student owns each one of personal computers. At the university that we work, many new students purchase a personal computer at the time of entrance into a university. It is never cheap shopping. Therefore, almost all students own the personal computer. However, the system that connects a

Information Environment desired	An average of a social science faculty only	An average of the whole university
The open hours of a computer study room are extended	53.0	49.2
Lend one note personal computer to students	52.9	50.6
Fullness of institution maintenance/support organization which can process data etc. electronically easily	55.8	56.5
Collection of the teaching materials and data through networks	54.6	51.1
An indication of the contents of a lesson by network of syllabuses	37.0	33.9
Construction of the mutual use organization between universities	28.5	31.0
Reservation of the coordinator staff for lesson support	59.5	55.8
Maintenance of the lesson improvement promotion organization which uses multimedia	27.4	28.5
Mitigation of the increase of a teacher burden accompanied by network correspondence	43.7	44.2
Systematization of curriculums	40.7	39.1
Reservation of teaching staff and the apparatus operation staff	62.0	60.8
Maintenance of the institution equipment to remote lessons (communications satellite)	14.6	14.0
Maintenance and common knowledge of information ethics regulation	24.4	22.8
Maintenance of the information technology training organization for teachers	40.3	40.2
Foundation of a performance evaluation system to an improvement of the educational method by teachers	21.4	22.0

%

Source: "Report On Utilizing Information Instruments at Private Universities in 1988 fiscal year", May, 1999.

student's personal computer to the network of a university is not still enough.

Multimedia and Law

Is it illegal if a student exhibits the result of the case study of a company by the homepage? Recently the problem of the copyright on the Internet [6] is beginning to fix gradually. However, common knowledge is not yet carried out. For example, with the lesson form that uses the above-mentioned homepage as an interface of a student and a teacher, you have to consider the right problem of the information that appears in a homepage.

You have to examine in advance whether it is equivalent to infringement of copyright [7] to upload and open a newspaper and the data of a magazine report to a homepage, or it does not hit. The consideration with the same said of the homepage, which a student creates, is required of the lesson. With the special subject of a social science, not only a student but also the teacher tends to introduce the example of a company easily. However, by the method of the introduction, the case that is equivalent to infringement of a right will also come out. Thus, it will be necessary for the both sides of a teacher and a student to have intellectual property rights and the knowledge about the use from now on.

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Note

（1）　In this report we have imagined the lecture of the faculty of a university. Using multimedia is applicable with the lecture form at a graduate school or the seminar form of a small

number of students. However, in this paper, a class that comparatively a large number of students attend is borne in mind.

（2） At present, as regards the term "multimedia" a universal interpretation is not likely to exist. For example, a telecommunications service operator calls broader-based belt of ISDN as multimedia. For a broadcasting industry company, multimedia means interactive TV. In computer industry, the compound data terminal is assumed for multimedia. This suggests that the businesses are interested in the hard side of multimedia.

（3） Web environment also becomes very complicated as some related technologies' progress. There is high-end web environment, and there is web environment of the low-end that is comparatively easy to build. We cannot generally argue. In this paper, however, the environment where the easy homepage created in html language and e-mail can be used is assumed.

（4） The system of Keio University at SFC, which plays a role, like TA (Teaching Assistant). SA (Student Assistant) can be made to participate in a class by request of the teacher who takes charge. SA plays not only to assistance of preparation of a lecture but also to replies a question from a student. The degree of expectation from a student to SA and the human relations of the role that SA actually plays were delicate. Although such a problem is pointed out, the role that SA plays when advancing a lecture is large. It was reported that four SAs participated in this lecture.

（5） It is reported in this investigation that the usage of the information apparatus is as follows. In a lesson of universities of a social science, "a student uses it as a tool for an exercise" (65.2%), "teaching materials and data creation" (86.3%), "the related information searched on the network is shown" (53.6%), "the communication means with a student" (57.7%), "studying by himself with the software for supplementary lessons" (27.9 %) "instead of OHP" (42.8%), and "carrying out a simulation by lesson" (26.2%). Therefore, you should be cautious of it not being necessarily use of the computer in multimedia environment.

（6） The multimedia related Low. Germany took the initiative. In order to put a legal net on illegal information, such as the privacy information on anonymity media and harmful materials, and this law was promulgated in August 1998. The personal-computer-communications entrepreneur of the United States that had tolerated that a customer received small-child pornography pictures from the Internet in Germany was exposed. The engineer who tried to abuse the personal computer network and tried to threaten cash was arrested. Thus, Germany takes an attitude strong against the crime on a network. This new law has prepared the regulation item in each of all multimedia information. An online-shopping, electronic banking, Internet information, etc. When illegal information is checked, it is the law of the severe contents that not only an information addresser but the provider and network management person who had tolerated also undertake joint liability.

The Internet providers opposed, saying, "It is impossible to judge illegality for the information which gathers out of the world in Germany." Criticism that it is interference of the government to expressional freedom is strong. There are many countries prudent in this kind of law. However, the unjust access preventing method is prepared in Japan.

The Unjust Access Preventing Regulation for this law, the Ministry of Posts and Telecommunications is currently examined in cooperation with the National Police Agency and the Ministry of Justice. In order to prevent improper use of a network, the grievance machinery of the auxiliary organization of the Ministry of Posts and Telecommunications is installed,

and there is an aim that this organization will give the authority that can pursue unjust access. There was an incident that 280 persons' ID and passwords list upload to ten electronic bulletins boards by So-net that is an Internet connectivity contractor in 1998. However, these were not set as the punishment object of a criminal code.

（7） The digitized work can be reproduced very easily. The action written in a homepage corresponds to neither broadcast nor publication. Since it did not transmit to many audiences and unspecified persons directly, it was not made the object of the Verne Treaty about copyright protection, and the Copyright Act of Japan. In 1996, WIPO copyright treaty was adopted in WIPO (World Intellectual Possession Organization). Setting the writing to a homepage as the object of "the right of transfer to the public" accepted. Moreover, WIPO treaty also assumes the Internet by satellite communication, and is made into the object of protection also to "radio." In addition, the provision which forbid the act in which this law avoids duplicate prevention technology, and the act which removes and changes electronic right management information unjustly are included. After adoption of this WIPO treaty, Copyright Act revision was materialized in 1997 and enforced since 1998. The action written in a homepage was positioned with the "transmitting possibility", and it was determined that the "public transmitting right" containing this was granted to a copyright holder. Moreover, prohibition of an action that removes and changes unjustly the Subcommittee on Multimedia of Copyright Council considers evasion of duplicate prevention technology and electronic right management information.

The Verne Treaty is a protection treaty of the copyright enacted in Bern in Switzerland in 1886. The number of members counts 129 nations (as April 1998). Japan joined in 1889. For the contents, immethodical principal and inside-and-outside people equality is a principle. A protection term is a minimum of 50 years after copyright holder's death. WIPO performs management business. Moreover, "WIPO Copyright Treaty" and "WIPO Demonstration and a Record Treaty" to specify the protection of a work that transmits in the information network that used the computer will be adopted, and the Verne Treaty will be reinforced. On the other hand, the Universal Copyright Convention was concluded in 1952, in order to cancel the divided inconvenience of an immethodical principle and a system principle. Japan joined in 1956. The number of member nations reaches 97 countries. (April, 1998) Even if it was the conclusion country which takes a system principle, when displaying "c", a copyright person's name, and the first issued year on a work, the work of the people of an immethodical principle country is protected. A protection term is a minimum of 25 years after death.