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**The Effects of Online Communication
on Students' Voluntary Contribution Behavior**

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Abstract

In this paper, to ascertain employees' motivations for conducting voluntary contribution behavior in order to smoothly carry out work duties in a teleworking environment, surveys were conducted on university students' voluntary behaviors, which entailed sharing information in an online communication venue, and the decisive factors that bring about this sort of behavior are discussed. First, an overview is provided of the problems that have been identified in the past with online communication and the technologies and measures that have been used to address these problems. Next, with regard to organizational citizenship behavior (subsequently, OCB) that becomes voluntary contribution behavior, with reference to how people possess a sense of belonging within the *iemoto* system organization of traditional Japanese art (*iemoto* refers to the founder or current head of a school of traditional Japanese art), which has a similar organizational structure, this author examines the effects of university citizenship behavior (UCB)—which constitutes OCB for university students—on online communication and its effects on the relevant organization. Additionally, the suggestions related to applying this discussion to OCB in online communication through teleworking are also considered.

1. Introduction

It has been many years since IT equipment came to be used in corporate society and in a mobile environment. The government, with the idea of further utilizing IT for employment, has positively advanced its plan to increase the adoption of teleworking, particularly working from home. However, even if we look at previous examples of the introduction of teleworking, we see that in the majority of cases, it was first a trial introduction for a small number of people and that in these instances, it was important to ascertain how the teleworkers and those around them understood teleworking and how they interacted with their teleworking colleagues. In the majority of cases, communication with teleworkers is done through email, in-organization bulletin board systems (BBS), or in-organization social networking sites (SNS), and, in addition, through the use of groupware that encompasses these types of communication. Here, the key to the smooth implementation of teleworking becomes promoting communication behavior that encourages the sharing of information. At the same time, in many cases, actions are voluntarily performed with regard to others, even if they are not directly within the scope of work duties. In the past, researchers have pointed to the importance of knowledge management for this voluntary contribution behavior in online communication venues. The reason for this is that they noted that employees' desires to interact with each other may be stimulated within their exchanges with other employees, or that the person himself or herself may come to want to obtain opportunities for learning and for growth through the provision of knowledge (Hayashi, 2009).

In this paper, to ascertain employees' motivations for conducting voluntary contribution behavior in order to smoothly carry out work duties in a teleworking environment, surveys were conducted on university students' voluntary behaviors, which entailed sharing information in an online communication venue, and the decisive factors that bring about this sort of behavior are discussed. First, an overview is provided of the problems that have been identified in the past with online communication and the technologies and measures that have been used to address these problems. Next, with regard to organizational citizenship behavior (subsequently, OCB) that becomes voluntary contribution behavior, with reference to how people possess a sense of belonging within the *iemoto* system organization of traditional Japanese art (*iemoto* refers to the founder or current head of a school of traditional Japanese art), which has a similar organizational structure, this author examines the effects of university citizenship behavior (UCB)—which constitutes OCB for university students—on online communication and its effects on the relevant organization. For this, the kinds of contribution behaviors that are carried out and the actions that spur this behavior in an organization that has prepared a teleworking environment are considered through interview surveys of students who use, as an organization, an online communication tool. Additionally, the suggestions related to applying this discussion to OCB in online communication through teleworking are also considered.

2. The online communication environment and information sharing in companies

It is has been many years since it was proclaimed that teleworking was “a way of working for a new age.” Many people carry mobile devices, such as smartphones and tablets, and an environment is now sufficiently in place to the extent that the “ubiquitous society,” in which people can use a high-speed Internet network at any time and place, can be realized. Despite this, however, it is difficult to say that teleworking has been introduced to the extent that everyone who wants to use it can do so. The difficulties inherent in online communication have frequently been highlighted, from both the management side and the employee side, as one of the reasons the introduction of teleworking is being obstructed. However, now that many companies have introduced groupware and Web conferencing systems, the spread of SNS among the general public is promoting the use of in-organization SNS, and the author considers that the problem is not the method of online communication itself. Specifically, the problem is not the method of communication but the difficulty in determining the answers to the following questions: when and

with how many people should communication be carried out; for an in-organization SNS used for work duties, what information and knowledge that each person possesses should be disclosed, and based on what timing; and what information should be distributed in writing?

However, just as in a meeting, some people will speak and others stay silent, and there will also be differences in the number of comments posted by members of a BBS. Unlike when communicating off-line, it is not possible to see people's expressions when they are online, and neither the appearance nor the opinions of the people who post comments will be seen or understood. Miyata (1999) experimented with using a variety of media to provide support for information sharing for a group that was collaborating to solve a problem. When the participants used an online space and did not meet face to face, the author found that information was shared accurately and that discussions did not end up going around in circles. At the same time, he pointed out that in the case of group members who made only a few comments, their sense of working together as a group was weak and they felt anxious. These feelings of anxiety are usually put forward as one of the problems that must be addressed when introducing teleworking. Therefore, for companies whose employees frequently engage in teleworking, various attempts have been made to overcome their anxiety through techniques to achieve conscious communication and to not only use people's efforts but also to utilize the mechanism of the system itself to overcome the problem. Although the use of a Web conferencing system entails face-to-face communication only during the time allocated for the meeting, the "ultra-reality teleworking system" of Kanamaru et al. (2011) entails constantly projecting to each member images of the others, enabling all of the workers to get a sense of the atmosphere in remote locations. Additionally, even for people who do not often post on the BBS or other systems, to make it easier for them to engage in informal communication, the system can combine a whisper function on the screen at the same time as projecting an image of the office to everyone. If there were a mechanism by which this system could be used to project full-scale images, it would be possible to keep to the absolute minimum the communication gap with workers in remote locations. This type of large-scale system, however, is still in the experimental phase, and at the present time, it will be difficult to fully implement because of its cost. Moreover, communication problems are not necessarily proportional to a person's distance from the office. There are many instances of insufficient sharing of information caused by a lack of communication even among people within the same department on the same building floor. Recently, companies have been introducing groupware and in-organization SNS to facilitate communication and information sharing among employees, regardless of whether or not they have offices in remote locations. When we consider this situation, we can see that a pressing issue for text-centered communication is establishing and maintaining a mechanism that promotes information sharing and enables each person to present the information and knowledge that they possess.

The electronic bulletin board system is an online communication method with a comparatively long history. Kawakami (2001) noted that there was an increase in comments in the forum as a whole when a special meeting room with a specific theme was installed in a computer-communication forum. Initially, he observed that the comments in this specially installed meeting room constituted the majority of the comments posted on the forum as a whole and that the participants actively posted comments in this meeting room. Gradually, though, the comments posted in meeting rooms other than this specially installed one became more active, and even when the comments posted in this special meeting room decreased, the number of comments posted on the forum as a whole did not. From this finding, it can be said that setting up a special meeting room with a specific theme would contribute to the activation of the entire forum.

Because it must be clarified to the information provider how the information they will display in written form will be received by those reading it and how they will utilize it, this initial provision of information can be difficult, and even if this information is provided and shared, it is difficult to connect it to subsequent communication. Although this is unavoidable for text-based

communication, in the world of computer communication, even in a communication environment that is fairly inferior to the present one, online communication is being actively conducted, information is being transferred, and the knowledge and relationships between members of organizations are being strengthened (Kawakami, 2001). From this, it is estimated that once the transfer of information using online communication is refined to some degree, to a certain extent it will control the members' ways of thinking about their organizations and also their OCB, which is generated by their ways of thinking. Therefore, it is considered that the key to whether OCB will be induced is the success or failure of teleworking, for which a solution cannot be obtained solely through the development of technology.

3. Voluntary contribution behavior in a seminar organization in university education

3.1 Voluntary contribution behavior

Recently, researchers have discussed methods of management innovation. Takaishi and Furukawa (2008) classified behavior in companies according to whether management had been assigned a role and pointed out that behavior that promotes managerial innovation takes place on the foundation created by "behavior in roles," which is the behavior necessary to maintain the company, and by OCB, which is the behavior that encourages the development of the company. OCB is not behavior in roles; thus, it is non-role behavior, and it is thought to be important to ascertain how OCB happens and whether it is promoted. Suzuki (2013) classified OCB according to a person's positioning within the organization of behavior related to support or diligence, and he divided it into three types: social behavior, organizational behavior, and organizational volunteerism. These three types have many points in common, however, and Suzuki himself did not consider them to be organizational behavior from every standpoint. In this sense, the author considers that support and diligence within the organization can be called OCB when they are grouped together within the broadest definition. In other words, whether or not organizational behavior is behavior inside or outside of a role may be very meaningful, and behavior outside of a role ultimately can be ascertained as "voluntary contribution behavior" that people carry out voluntarily for their organizations.

Shibata and Kanbayashi (2013) noted that compared with people in China and the United States, the Japanese have a strong tendency toward OCB with a commitment component of "emotional assimilation or participation with regard to the organization" and also a strong tendency to expect "person-to-person OCB in the workplace." In other words, OCB by the Japanese is ultimately behavior that can be seen in the workplace because this is a venue where it is possible to carry out face-to-face communication, and it is considered that this foundation strongly relates to Japanese people's sense of belonging to an organization.

In contrast to contribution behavior toward the organization, customer voluntary performance (CVP) shows the relationship between customers and the selling company. A typical example of CVP is postings on word-of-mouth websites, and thus there are various examples of opinion exchange on consumer-participation-type websites (Kato, 2004). As indicated by Baku (2008), these relationships of behaviors by companies and customers are fundamentally one-way, active relationships of loyalty or cooperation. Within them, however, there are also company-customer relationships with two-sided, active relationships of loyalty and cooperation between both parties. Previously, the author has discussed customer management using IT and maintaining relationships of trust within the master-apprentice relationship of traditional Japanese arts (Yanagihara, 2012). In addition to the master-apprentice relationship between each of the masters and apprentices, there also exists their relationships with the organization of the school to which all of the masters and apprentices belong. Therefore, at times, a customer will pay for practical training with the master, but sometimes another member will perform contribution behavior for either the master or the school as a member of the same school organization (Figure 1). Based on the relationship of

trust with the apprentice's master, this research focused on behavior using IT that was voluntarily done by the apprentice himself or herself to maintain the relationship of trust. In an organization with a dual structure, such as in an *iemoto* system organization, with relationships with the customer and relationships of trust within the same organization, it was confirmed that members perform loyalty and cooperative behaviors at the same time and that they carry out contribution behavior for the organization that they belong to. This sort of behavior becomes the foundation for the creation of feelings of commitment toward the organization and a sense of being a member of the organization, and ultimately it is behavior that has the strong characteristic not of being CVP for a customer but of being OCB.

3.2 The characteristics of a university seminar organization and OCB

If we consider the university seminar organization to be a relationship between teachers and students similar to companies and customers that is mediated by units (grades), then contribution behavior in the seminar can be considered to be CVP, except that the students who are guided by teachers are not simply customers; they research themes in the same field as their teachers and through these activities, their relationship becomes more like the master-apprentice relationship in the apprenticeship system. These two types of relationships exist simultaneously, and furthermore, the relationship in which each relates to the other resembles the *iemoto* system organization in the traditional performing arts that was mentioned above. The major difference with the *iemoto* system organization, though, is that seminars differ widely according to each individual organization, and, unlike the ideas of the head of the school in traditional performing arts, the influence of the ideas of the teacher do not extend to the very edges of the organization. Moreover, neither the rules nor the ideas for the whole of a large organization are passed on unchanged to the very edges of the seminar organization. The ideas of the teacher providing the instruction and the students' behavior change greatly based on the ideas of both groups and also based on how the teacher and students interact with each other. There are seminar organizations in which the members have virtually no mutual relationships, and the coexistence of loyalty and cooperation that can be seen in *iemoto* system organizations does not apply to all seminar organizations.

For the OCB of university students, Shiomura et al. (2005) noted that their motivation for carrying out OCB differed according to the character and circumstances of their organizations. From the perspective of motivation, the authors investigated the differences between the OCB of members of society in workplaces and the OCB of university students in activity circles. From the results of their analysis, which used the four subordinate concepts of causal process, internal self-concept, external self-concept, and instrumentality for the scale for the source of motivation, they indicated that the motivations resulting in OCB were different for members of society and for university students.

Ueda and Nojima (2012) described how the OCB of university students can have other features that are thought to belong to UCB and showed the importance of this. Further, they noted that the relationships between the three elements of OCB—loyalty, cooperation, and diligence—can be discussed in the context of UCB and that although students perform behaviors of loyalty and cooperation when they are satisfied with the university itself or with the support they receive within it, it is difficult to say that diligent students demonstrate more loyalty than do students who are not diligent. However, the subjects of this research were not students with deep and mutual human relationships between a small number of people, such as members of a seminar. The author considered the human relationships within seminar organizations to be closer to the world of traditional performing arts mentioned above rather than to the situations of the students in this UCB research.

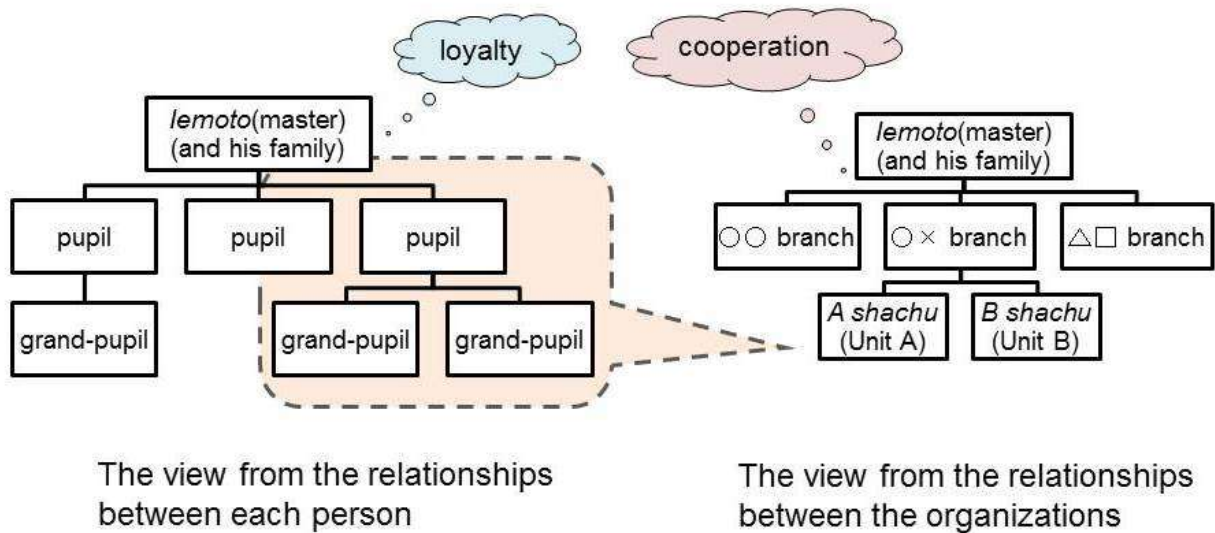


Figure 1: Structure of the *iemoto* system organization as seen from the relationships between each person and the organizations (Yanagihara.s, (2012))

In many cases, university seminar organizations meet at the same venue but not for long periods of time. For example, when a seat is prepared in a laboratory in a faculty for a student in a science course, outside of class time that student “goes to work” in the laboratory on the days he or she is scheduled for research activities, and then, with their completed, goes home. In other words, his or her life resembles that of a company employee. In this case, the organization is similar to the *iemoto* system organization, but the student’s learning (working) pattern is the same as that of a general company employee, and therefore it may be closer to the OCB of a general company. However, in the case of a seminar for a liberal arts course that meets in principle once a week, then even if, for example, some members attempt to meet in some form several times a week, it is rarely the case that the same members meet at the same place every day to work together, as is the case for company employees working in an office. There will be members who are never seen during the long vacations. Therefore, using the seminar to set times during long holidays for all members to meet every day in order to work on projects, depending on the situation, can be a technique to promote learning by having the students participate in long-term fieldwork. However, not all organizations will do this, and career seminars that lead to job-hunting activities and internships will have an impact, producing a situation in which it is difficult for all of the members to meet each day. The university seminar organization can be said to exist in an environment in which fundamentally, all members only meet one time per week during term times (and in many cases, not all of the members will be present) and outside of term times, the members have a high degree of freedom that makes this sort of off-line communication difficult to carry out. In this type of organizational environment, in which there is little time for members to communicate face to face, it is considered that certain constant conditions to promote UCB are necessary. The “emotional commitment” of Shibata and Kanbayashi (2013) described above may need using a little ingenuity, but the question is whether UCB will occur in a seminar organization with limited time for the members to meet in a place for face-to-face communication where behavior can actually be seen. If this is the case, UCB only takes place during class time, and the voluntary creation of time for face-to-face meetings may lead to UCB.

Okumoto and Iwase (2012) discussed voluntary contribution behavior in university education based on their analysis of behavior from the viewpoint of the Ringelmann effect (social loafing)

in places for cooperative study for project-based learning (PBL); in other words, their discussion was based on an analysis from the opposite perspective of OCB. From the results of their analysis, they found that voluntary behavior in PBL arises out of team activities and mutual interactions, and they stated that it is necessary to design teams that will promote voluntary behavior. In addition, they proposed three elements as being necessary for this sort of team design: the motivation of the participants in the discussion at the start of the PBL; the creation of teams with a small number of members and the participation of all members in the decision making; and considering the viewpoints of others in order to discover problems. As a similar example, Yanagihara (2003) reported that through PBL, the research subjects' awareness of being one member of an organization increased when they accomplished tasks, and through this, they became motivated to study voluntarily. PBL also contributed to their socialization in organizations after they graduated because they became accustomed to carrying out tasks within a company organization (Yanagihara, 2011). Therefore, in order to cultivate human resources that will be useful for companies in contemporary society that require innovation, it is important that these human resources have experienced voluntary contribution behavior through PBL and also that they promote it. However, it is impossible to carry out all classes as PBL, and it is essential to utilize venues for seminar education as places for small-group education.

3.3 Online communication spaces as venues for UCB

In contemporary society characterized by the widespread use of IT, online communication frequently fills in for the lack of face-to-face communication. Recently, SNS has been filling in this gap in conjunction with the spread of mobile devices, but in many cases these are personal connections, such as between good friends, and universities do not often use SNS for objectives that are an extension of work, such as for learning or for in-organization communication. From a different perspective however, corporate society continues to increasingly make use of in-organization SNS, and there are too many examples to describe. The objectives and the effects of their introduction are also varied. For example, Sabetto (2012) et al. pointed to the use of SNS for training new employees at Megmilk Snowbrand Co. Ltd., which resulted in communication between the new employees and their superiors and also made it possible to see the growth in these new employees. Moreover, Bridgestone Corp. had various objectives for the SNS it introduced, but it was mainly for its employees on child-care leave or those returning to work, and it was found that it created an awareness among employees of their connection to the company and that it helped to retain a sense of identification with the company among those employees who were on leave. Further, Kato (2008) et al. noted that in an SNS within a company, particularly impressive results were obtained when the company newly defined its objectives, obtained candidates for the selection, and created a solution to achieve the results.

Therefore, even though in this way, communication and information-and-knowledge management have begun to permeate throughout companies through their use of in-organization SNS, university education has yet to fully utilize them. For many students, university education is the final education they will receive before they enter corporate society, and thus going forward, it will be increasingly important for SNS in education to function as places for managing information and knowledge and for business communication, and connected to this, as spaces for communication for education, including private communication. However, educational methods to achieve these objectives have yet to be established. Moreover, the introduction of SNS education as part of the curriculum would be difficult to carry out uniformly, even in an educational establishment that provided computer literacy courses. Even if a class for a large number of people was introduced on SNS as a method of communication, the SNS in a company organization and the SNS in university education are still completely different in terms of their objectives, their organizational structures, and the awareness of the members of the organization. For example, even if students became accustomed to using an in-organization SNS, they still might

not have acquired the knowledge and techniques necessary to use a company's in-organization SNS effectively and efficiently. If we consider that OCB has become important for companies for sharing information within an online communication space, we can see that it is also necessary to examine a framework that will promote OCB at universities. Next, the author will consider an in-organization SNS that was prepared within a university for small-group seminar education. The students engaged in active discussions over this SNS, and there was a tendency for each of the organization members to post comments; additionally, even when there were multiple topics within the seminar community, there were students who posted comments that served to activate not only online learning but also off-line learning. In addition, the number of posts may have been strongly related to UCB for information sharing and learning in the seminar organization. Currently, education for SNS in universities and education to facilitate responses to a teleworking environment faces difficulties, but it is possible that OCB that can activate the online communication that uses this education can enable students to have experiences in universities. In the next section, we will investigate how online communication relates to UCB through interview surveys with seminar students who used an in-organization SNS.

4. UCB in seminar activities using an in-organization SNS and its effects

4.1 Hypothesis and summary of the survey

Based on the discussion to this point, in the case of online communication using PSNS (professional social networking sites) in a university seminar organization, the kinds of UCB being carried out and their effects on seminar activities were investigated, and the following hypotheses were established.

- I: Students' online communication is carried out as UCB to promote the activation of the organization.
- II: The positive UCB of students who are satisfied with seminar activities stimulates the activities of other students.

Hypothesis II considers that the finding of Ueda (2011), who stated that "students' levels of satisfaction and diligence each independently affect the feelings of other students," which also applies to online venues. However, because in this research a detailed analysis of quantitative data was not carried out, it was not possible to analyze the data to the extent of determining whether each element was independent.

A semi-structured interview format was used for the two surveys.

The first survey was carried out in academic year 2011–2012 (March 2012). From among 12 third- and fourth-year students in a special seminar, four students—specifically, two fourth-year students and two third-year students—were selected as the subjects of analysis because they exhibited characteristic behavior, and each was interviewed for approximately one hour. Four questions were prepared: "How have your feelings about participating in the special seminar changed?"; "What were your initial thoughts about PSNS and how did they subsequently change?"; "Have your feelings changed as a member of the seminar, or has your own position within the seminar changed?"; and "What have been your feelings about posting on the SNS and your feelings about appealing to others?" After these questions were first presented to the survey subjects, they talked freely about them in sequence, and they were encouraged to move on to the next theme until answers for each question were obtained.

The second survey was carried out in academic year 2012–2013 (November 2012) as interviews of approximately one hour per person with a total of 13 survey subjects—nine third-year students and four fourth-year students—each of whom was registered in the special seminar. Compared with the first survey, the questions focused on the subjects' feelings about the use of

the PSNS for learning and its use in the seminar environment. In many cases, though, the content of the questions in the second survey overlapped with those in the first survey, such as “What spurred you to post a comment?” and “What were your feelings about your relations with others when you posted a comment?” Moreover, in the second survey, a fourth-year student conducted the interviews instead of a teacher. This was to draw out comments from the subjects that they might have found difficult to say to a teacher.

Only one subject who took part in the first survey also took part in the second survey.

4.2 The survey subjects' environment

The survey subjects were students attending a special seminar on management information systems in the Faculty of Economics at the University of Toyama. The University of Toyama has established the University of Toyama PSNS (subsequently abbreviated to PSNS; <https://shien.adm.u-toyama.ac.jp/>), which is a university SNS that can only be used by students and teaching staff registered at the university. This SNS was mainly set up to support the students' studies, but although it is difficult to recognize many instances in which it has formed a class community, it is being used by some teachers for reporting on small-group lessons and as a venue for communication. However, its main purpose is to provide support for the physical and mental health of students who feel anxious about their studies, and this support is chiefly provided by means of a diary function. A specific community for this seminar has been formed, and within it, various topics are prepared and reported on, and opinions are exchanged (please refer to Figure 2). Because the system was set up so the students can connect to it 24 hours a day from anywhere, the posts are sent as email, so their content can be easily confirmed.

In this faculty, the students attend the seminar of their advisor teacher for two years, their third and fourth years. Over this time, they deepen their knowledge of specialized content and write their graduation theses. The management of the seminars, however, is left completely up to each teacher, and although there are teachers who have no contact with the students except during class time, there are those who support their students' presentations at academic conferences and their activities outside of the university. The seminar studied in this research fell somewhere in the middle of these two extremes. The teacher prepared a research environment that was necessary for the students to be able to independently carry out activities, but the teacher did not actively take part in their activities. An SNS was set up for the seminar members to communicate online, and it was established as a venue for them to freely communicate with each other outside of classroom hours on a diverse range of topics. This seminar, however, had one major difference compared with other seminars. Recently there have been cases of communication over commercial SNS, such as mailing lists and Facebook, and the adoption of an online communication tool is not unique to this seminar. A key feature of this seminar, though, is that the SNS was not positioned as simply a communication tool but rather as an extension of the seminar itself.

4.3 Results and analysis of the first survey (fiscal 2011)

In the first survey, four students, two from each of the third and fourth years, whose participation in the PSNS stood out from that of others (specifically, they posted a large number of comments) were interviewed, and their opinions expressing their awareness about the seminar are described below.

A “I don't think the seminar and extracurricular activities played that great a role in forming a sense of belonging with the university. There were classes on teaching (omission), and in the seminar, the junior and senior students were able to build good relationships. There was also a sense of speed. (When online), communication is not face-to-face and questions are open to the public, so I tried to write A+ information because everyone is going to see it. It was excellent in terms of facilitating cooperation between junior and senior students.”

B “I have feelings of attachment to the seminar, but not necessarily to the university or the faculty. The classes (seminar) take place within the university, so I don’t know if that means I feel an attachment to the university. I feel that the seminars are within a separate framework, in other words, that the seminars do not take place within the framework of the university.”

C “My affection for my seminar is too strong, and I think (the feelings of) everyone else doesn’t approach (my feelings). But I also have a feeling of wanting everyone to learn in this seminar. I feel a sense of pride that within the seminar, I am the person who feels the strongest affection for it.”

D “In the second half of the third year, it was seminar, seminar, seminar. I have a really strong sense of belonging to the seminar. I go to school because I have the seminar. I take other classes, but I don’t feel the same about them. (Omission) The seminar is completely different from the other classes. Even if I am able to work hard in the seminar, I cannot say that this has a positive influence on my other classes. But it has absolutely no negative influence either. I didn’t want to do badly in my other classes because of the seminar.”

The point shared in common by these comments is the strong sense of belonging to the seminar. For example, this is supported by C’s description of his/her “affection for the seminar” and D’s “strong sense of belonging to the seminar” and comment that “I go to school because I have the seminar.” Conversely, although Ueda (2011) concluded that students’ satisfaction with their universities leads to their UCB, the comments by B of “I feel the seminars are in a different framework,” and by D of “The seminar is completely different from the other classes,” suggest that the subjects’ senses of belonging and attachment to the seminar were different from how they felt about the university and the faculty, and therefore UCB for the seminar and the other members was not generated from their sense of belonging to the university but from their sense of belonging to the seminar.

In addition, the backdrop to their activities, including their positive comments on the PSNS, is the characteristic that they always considered the effects that their activities would have on the seminar and the other seminar members. For example, the comment by A that “I tried to write A+ information because everyone is going to see it” can be understood as being close to the “courtesy” of OCB, and the comment of C of “I also have a feeling of wanting everyone to learn in this seminar” describes behavior that matches the “loyal boosterism” of Moorman and Blakely (1995) and the “identification with the company” of Farh et al. (1987). In general, their comments support the tendency for their sense of belonging to the seminar to lead to their UCB for the seminar and for its other members.

4.4 Results and analysis of the second survey (fiscal 2012)

This survey used a semi-structured interview. In the interviews, the students talked about how they were affected by the PSNS and, through the PSNS, by the postings of other students on their activities; they also talked about what activities they themselves carried out for the seminar. The second survey differed from the first survey in that the interviewer was a fourth-year seminar student (the third-year student C in the first survey). C conducted the interviews with each member of the seminar. The reason the interviews were conducted by C was that it was thought that this would help the subjects to relax and would draw out from them comments they would not make if the interviewer were not another student.

Table 1 shows each subject’s answers to the questions. First, we see that a fourth-year student who had cultivated a strong sense of belonging with the seminar answered that through the PSNS, his/her motivation was increased through the postings of others, and he/she was especially aware of being a senior student with regard to the junior students and so posted comments to activate the seminar activities. In contrast, individual variations can be seen in the awareness of the third-year students who had just joined the seminar. Whereas on the one hand, they gave answers that

expressed a high level of awareness and a sense of connection, on the other hand, they also gave answers indicating that there were students who felt pressured by this sense of connection. In addition, in the subjects' answers on their awareness about posting, although some indicated a positive intention to post, others felt inconvenienced by it and felt that it inhibited others. The behavior of third-year students with regard to the organization was ultimately behavior for other individuals. In contrast, the behavior of fourth-year students with regard to the organization was not for other individuals; rather, based on everything they said, it can be inferred that as senior students, they felt that their activities should always be for the organization. To say this in another way, whereas the behavior of the third-year students can be described as OCB for individuals (OCBI), the behavior of the fourth-year students was OCB for the organization (OCBO) (Williams & Anderson, 1991).

Major differences in behavior for the organization can be seen based on the student. This is because OCB determines the different way PSNS is perceived, whether it is merely considered to be a communication tool or is considered to be a learning tool. We can see that in terms of the overall trend, there were two types of student. The first type were students who perceived the PSNS community as a venue for communication with other seminar members, including the teacher. These students tended not to consider impressions about the class to be a good topic. The second type were students who considered the community as a venue for various kinds of learning and found meaning in it in terms of sharing information. This type talked strongly about the usefulness of the topic of impressions of the class, and they did not consider that its role was simply to interpolate off-line communication during class time. Ultimately, they felt that the seminar was a venue for learning and thus it was meaningful to continue discussing online the topic of impressions of the class or, depending on circumstances, other topics. There were comments about the importance of posts that dared to have different content from other posts, and it is considered that this finding connects to Hypothesis I.

Table 1: Summary of the interview results

Student year	Identification	Effects of PSNS on awareness about the seminar	Behavior for the organization	Effects from others
4	D	I came to feel like working seriously. I came to feel positively toward the seminar. I was able to live with a purpose. I became able to listen intently to conversations, even to trivial things. I felt a sense of responsibility, even though I was just sending an email. But I didn't get a sense of security from here, but from the telephone.	I continued to write in my daily report that we fourth-year students had to act properly.	The points I was uncertain about were cleared up thanks to the posts of others. I was told by the teachers and senior students that my writing ability had improved, and I was able to feel I had grown, which made us want to try even harder.
4	M	Because I don't normally have relationships with junior students, I think it is a communication tool and a learning tool. I would be lonely without it.	I posted properly as a fourth-year student. I behaved in order to create the seminar that the teacher wanted and to meet expectations.	Because I felt the extent of the members' awareness, I also felt that I too had to behave accordingly.

4	S	We quickly became close. If there was something I didn't understand, I was able to research it. It is indispensable as a place for communication.	Care was taken to have topics that the junior students could post about. I tried to propose new topics.	I came into contact with ideas that were different from my own.
4	T	There is a sense of security. It is convenient. It enables us to communicate with each other at any time and to point out to one another basic information that we cannot talk about during the class, even about class content.	Basically, you do it at your own pace. When I became a fourth-year student and lots of third year students entered, I was aware of the things I had to do for the junior members.	When you see people continuously posting their daily reports, your own motivation improves. When there was a response to an impression of the class, I was relieved if it showed my ideas were not mistaken.
3	A	I became aware of the importance of posting. What you post remains on the site and is transmitted in a straight way. I felt happiness and a sense of trust that somebody was reading (my posts).	I left records.	I became aware of the importance of improving each other.
3	F	Connections. I came to understand the other members' lives and states of mind. It gives me a warm and comfortable feeling.	I felt like I had to post something.	From the daily report topic, I understood that the people responsible were trying hard.
3	K	I felt it was more like a team than a class. My image is that we are a group that can do things enjoyably. My impression of the teacher was different than for second-year classes, and in a good sense it became like an extracurricular activity. First, I felt it was a place to fulfill an obligation, but my awareness changed to its being a place of community. Although we can discuss things by email, because it is a PSNS we can talk together as a large group.	I used it consciously and actively and posted in order to have connections with others.	I felt a sense of connection, and it became easier to make vertical connections. It also became easier to enter classes that were combined with classes for senior students, and the sense of distance from the teacher was reduced.
3	MK	It reduced the distance from the teacher. It created an atmosphere in which it was easier to consult with others about things.	When it was related to something from the past, I went back, examined it, and posted. My awareness is that it functions as a database.	I could communicate even by just looking.

3	KU	A sense of connection. A feeling of warmth. It supports free discussions. I would be at a loss without it. I came to want to participate properly. Basically, the seminar is off-line, and my awareness is that the PSNS interpolates the seminar.	A precondition is improving each other. I think I want it to be an organization in which when someone is having a problem, the others support them.	At first, I did not know the best way to use the PSNS, but I looked at the posts of the senior students and from the past and I came to understand how to use it.
3	O	I felt pride in doing something different from others. Also, I had a feeling of wanting to try hard. I paid attention to my writing when I posted. It is good that the records are kept of the posts. If you go to a study room, everyone cannot talk about the same topic at once, but you can on a PSNS.	My awareness is that even though I am not very good at writing posts, I am able to get on board with the conversations of others.	I am happy when I understand what the teacher and everyone else is doing. I feel relieved. I am glad that everyone is always looking out for each other.
3	MS	I worry about what to post for my impressions of the classes when I regretted not having prepared sufficiently, but in these cases I can re-study the class. I feel that this type of communication in an open environment sends your message more assuredly to the other participants than by email.	I consider my impressions of the class and aim to post an opinion different from those posted by others.	I read what others have posted, and I learn from those posts what I think might apply to me.
3	ST	It's heavy. You can see everyone's situations, so I think you feel like you have to do it. Because I end up being lazy unless I receive a certain degree of stimulation, I read past posts, and this helps me to understand what I should study to prepare for the seminar.	Because I was taught a lot of things on it, I also posted on it to return the favor.	I came to understand that other people think this way or see things this way.
3	U	I feel a sense of connection. It enhances off-line (communication)	Particularly in the free conversation, I came to feel like I, too, had to get actively involved. My awareness is that it has a role for the seminars.	I am happy to get information from others.

5. Conclusions

In this research, the characteristics of a university seminar organization were compared with the *iemoto* system organization of the traditional performing arts, and the seminar was ascertained to be an organization with two aspects: education in the form of a master-apprentice system and the transfer of a service. Although a university is a different organization than a company, from the

perspective that it is an organization with a dual structure of loyalty and cooperation, it was considered that an investigation of the activation of an online community of university students could provide important suggestions for companies for when they prepare a teleworking environment or for teleworker education. Therefore in this paper, the effects of UCB, which is OCB by university students in an online communication venue, and its effects on the organization, were discussed. As a result, it was shown that a cycle took place of UCB's promoting the activation of online communication within a seminar organization; this activation in turn promoted the activation of the organization, and the activities that resulted from this in turn became UCB. At the same time, it was suggested that the students who positively engaged in UCB activated a variety of seminar activities by the other students within the organization.

As mentioned above, this research attempted to use qualitative surveys to show that the finding of Ueda (2011), that "students' levels of satisfaction and diligence each independently affect the feelings of other students," also apply to online communication venues. However, this research has a number of limitations. First, ultimately, these surveys investigated the members of an organization at a certain period in time, and whether its findings are constant over time must be clarified by a time-series survey. In particular, the students in this research who did the most UCB and who contributed most to the activation of the online communication and the seminar played a valuable role, but it is questionable whether this type of student will always be present within the organization. It would be necessary to carry out a continuous survey on UCB and its effects in a case study in which these types of students were not present. The second limitation is that both classes in the form of seminars and their positions within their curricula will differ markedly according to the university. The surveys in this research were carried out with students who continuously participated in the seminar for two years, during their third and fourth years, with the final goal being for them to write a graduation thesis. All of the students were obliged to belong to a seminar because it was for a required course, and it can be considered that these students' sense of belonging to their seminar organization increased as a result of this, compared with students in a university or faculty in which the seminar and graduation thesis are for an elective subject. Finally, regional differences among the universities were not considered. Ueda (2011) used a case study of a private university in the Tokyo metropolitan area, but the subjects in this research were students in a regional national university. In both cases, the students were in their universities' faculties of economics, but students in the Tokyo metropolitan area will have a broader range of opportunities to interact with students from other universities, whereas the relationships formed by students within a regional national university will almost entirely consist of relationships with students from the same university. Therefore, there are likely to be differences between them in terms of their normal communication styles and their quality, and also in their feelings of attachment to their universities and the extent to which the seminar organizations play a role in their lives. However, although it can be argued that this research is limited by these points, if we consider it from the perspective of the dual aspects of the *iemoto* system organization, then the author believes that its findings can be applied to organizations outside of universities.

Additionally, at the stage of the survey analysis, the author was not able to investigate whether the characteristics of the topics had an effect. For example, during periods when posting was made compulsory, and speaking specifically about the example used in this research, it is considered necessary to investigate whether there would have been any differences in the awareness and the activities of the students carrying out UCB when comparing their posts during class time when they had to post on their impression of the class with their posts outside of class time. The author wishes to research this topic in the future.

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