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The Influence of Using Web 2.0 on Participation and Activities in an Online Discussion Forum

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The development of a new generation of the Internet, which provides opportunities for interactive participation and social networking activities, leads people to collaborate and share ideas among Internet users. These changes are considered to affect students who study through online environments. Especially students' activities in an online discussion are considered to be affected by their use of newly developed web functions. So, the purpose of this study is to examine whether students' usage of Web 2.0 functions are related to their social presence and affect participation and activities in an online discussion forum. The discussion forum was open for three months, and the questionnaire was distributed at the end of the semester. The results revealed that the usage of Web 2.0 was no relation to social presence and did not affect the participation in the discussion forum. However, when using social network analysis, two groups emerged; the core who actively participated and the periphery network group members. Web 2.0 usage was significantly different between the two groups. Also, the content analysis revealed that the core group posted more 'cheerleading/affirming' contents than the other group. In conclusion, it was found that Web 2.0 does not affect participation in the discussion forum, but among those participating, active Web 2.0 users lead the online discussion by becoming the core group and engage in social activities.

Key words : Web 2.0, online discussion forum, social presence, social interaction

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I. Introduction

The latest evolution of Web, called *Web 2.0*, has led to significant changes in practice with only minor technical developments, and is changing how we interact with information and with each other in the virtual environment (Maloney, 2007). This change enables more interactive participation to create web content. Users can post and share anything they want, including writing, pictures, and video clips, sort knowledge and information according to their interests, and build knowledge with other users through web. Therefore, Web 2.0 has led people to change a role from passive finders of information to active producers through web functions, such as Blogs, Wikis, and web communities. This change of attitude in using computers with Web 2.0 functions is also expected to influence students' learning processes in an online environment. Web 2.0 might change passive learners who received information into active learners who participate in the learning process by using more Web 2.0 features that promote knowledge generation, information sharing, and collaborative work.

Participation in online discussion forum, in particular, might be affected by the characteristics of Web 2.0 users, since discussion forum has been considered as a unique learning environment that provides and substitutes for the interactive dimensions found in the face-to-face classroom and is required learners' active participation for its success (Levine, 2007). According to previous studies (Alexander, 2006; Cong & Du, 2007), the Internet users have become more active by using Web 2.0 features and this characteristic of active participation in online environment may affect the users' perceived level of social presence that results in higher level of participation in online discussion forum. There have been much research on factors affecting learners' participation in an online discussion forum (e.g. Dennen, 2005) and also the effect of social presence on online activities (e.g. Ubon & Kimble, 2004; Tu & McIsaac, 2002). However, little research has been conducted yet to examine the influence of emerging web functions, Web 2.0, on discussion participation. Thus, it is worth investigating the relation between using Web 2.0 functions and social presence, and also the effect of using those web features on online discussion participation.

In addition, not only participation itself but also participation patterns and types of

activities might be affected by the characteristics of Web 2.0 users. In using various features of Web 2.0, the most distinguished advantage is that Web 2.0 encourages online social activities. Social activities have been considered to be highly related to learning experiences and outcomes, since Vygotsky (1978) proposed social theories of learning. Researchers have insisted that social activities are one of the most important elements in computer-supported collaborative learning environments (Harasim, Hiltz, Teles, & Turoff, 1995), but relatively little research has been conducted that examines the factors that influence social activities. As mentioned above, Web 2.0 users actively participate in online communities and stay connected with other users by sharing social activities, which promotes a creation of social networks among users. Thus, it is expected that experiences in using Web 2.0 functions might affect the level of social activities in online learning environments. Since little previous study exists, it is necessary to investigate Web 2.0 users' participation patterns and types of activities in an online discussion forum.

In sum, this study will examine how the use of Web 2.0 relates to students' participation, its patterns and types of activities in an online discussion forum. Firstly, this study will analyze the relationship between the students' usage level of Web 2.0 functions and their perceived level of social presence. Secondly, students' participation will be analyzed depending on the usage level of Web 2.0. For this analysis, participants will be divided into high level or low level of Web 2.0 users. The current study will also examine how participants in a discussion forum interacted with each other. Patterns of participation of web users has been analyzed with social network analysis and this method of analysis has also been adopted to analyzing activities in online discussion forum (Lowes, Lin, & Wang, 2007). Thus, this method will be used for analyzing the level of social activities depending on their participation patterns. More specifically, how core and periphery groups emerged from social network analysis differ in their usage level of Web 2.0 and their perceived level of social presence will be examined. In addition, a content analysis of their posting messages will inform how two groups will be different in the types of activities they engage in.

Ⅱ. Theoretical background

1. The subsequent generation of the Internet (Web 2.0)

The term Web 2.0 was coined by Tim O'Reilly, CEO of O'Reilly Media, Inc., in 2004. It does not refer to a new technology, but rather a new platform of Internet services. There is still no single definition of Web 2.0, but generally, Web 2.0 is defined as a second generation of web-based services — such as social networking sites, Wikis, Mash-ups, and Meta-tags — that facilitate online collaboration and sharing among users (Cong & Du, 2007; Maloney, 2007). Chu and Lee (2008) summarized the characteristics of Web 2.0 as openness, connectivity, and interactivity; Openness means that people can not possess data; Connectivity indicates that Web 2.0 improve connectivity or distribution since the connectivity among information and the social connectivity among individuals become stronger; Interactivity explains that information can be generated by the interactions among the Internet users, and new values also can be created through active participation. These characteristics lead users' active participation in online communities, which well distinguish Web 2.0 from Web 1.0. In the current study, those who frequently use Web 2.0 functions are defined as Web 2.0 users.

Researchers (Alexander, 2006; Bughin & Manyika, 2007; Cong & Du, 2007; Maloney, 2007; O'Reilly, 2005) have mentioned that the main features of Web 2.0 might be represented as Blogs, RSS, Podcast, Instant Messaging (IM), social bookmarking, and Wikis. Distinctive features of each function are as following:

Blog: Blogs are easily created and updatable websites with posts on a variety of topics that enable users to instantly publish their own posts, comment on posts, subscribe to new feeds and links from any Internet connection, and interact with readers. This changes how information is shared by allowing online communities to generate and share information, and comment to each other in an online environment.

RSS (Real Simple Syndication): RSS is a powerful new technology which allows subscribers to directly retrieve specific content from millions of sources without having to search for it (Richardson & Mancabelli, 2007).

Podcast: Podcasts allow the users to create, distribute, and share audio content online, including interviews and recordings of informative presentations (Richardson & Mancabelli, 2007). The format of Podcast has been rapidly shifted to video with the development of portable media such as PMP (Portable Multi-media Player).

Instant Messaging or Instant Messenger (IM): Use of IM is a common online activity, such as instant online chatting, instant online calling, and file and image exchange, for young generation. Kinzie, Whitaker, & Hofer (2005) mention that it may become a medium that enables the transference of classroom discussion into synchronous chat-based discussions and thus allows students to engage in synchronous online discussions.

Social bookmarking or meta-tag(s): Social bookmarking allows users to save and archive entire pages on specific topics to provide a valuable resource sharable with others. (Richardson & Mancabelli, 2007).

Collective intelligence web-sites: Collective intelligence websites such as Wikipedia enable anyone to share, publish, or edit content. In some schools, teachers and students have begun using password-protected Wikis to create their own textbooks and resource sites (Richardson & Mancabelli, 2007).

Of lots of functions in these user-oriented web environment, a common and distinguished component is the feature of social networking (Alexander, 2006). These user-oriented web environments emphasize online collaboration and information sharing among users. In particular, social networking websites, such as MySpace, Facebook, Cyworld, Me2day and et al., are examples of rapidly expanding social networking communities that contain above-mentioned functions of Web 2.0. In these communities, users invest their time and energy in building relationships with others by actively generating and sharing web contents (Maloney, 2007). According to previous studies, these unique characteristics of web users influence learning in online educational environment (Zhang, Olfman, & Ractham, 2007). They, in particular, affect discussion and collaboration through online learning environments (Plaisted & Irvine, 2006). However, there are still needs to conduct a more in-depth study to further examine how the usage level of Web 2.0 functions would be related to social presence and also influence participation patterns and types of activities in online discussion forum.

2. The Online Discussion Forum

Online discussion forum has been considered to be a medium for collaborative knowledge creation and knowledge sharing for online education (Levine, 2007; Marra, Moore, & Klimczak., 2004; McVerry, 2007; Moore & Marra, 2005; Wei & Chen, 2006). In addition, the advance of techniques has added additional functions for convenience and ease of use (Wagner & Bolloju, 2005). Meyer (2003) shows that online discussion allows students to more efficiently construct knowledge and cognitive skills, and students involved in online discussion spend more time and effort thinking about their learning by responding to teacher and peer questions. Also, online discussion can trigger higher order thinking (Meyer, 2003), convey students' socio-emotional content, create social identities (Ubon & Kimble, 2004), and facilitate task-oriented communication (Im & Lee, 2003). Although the research of Anagnostopoulos, Basmadjian, and Mccroryet (2005) shows that social activities in the online discussion forum may lead students to lose their learning goals, other aspects, such as collaboration (Wei & Chen, 2006) and social interaction (Moore & Marra, 2005), have been shown to lead to more meaningful learning.

By virtue of those advantages, the discussion forum is considered to be the central element in distance learning management systems that extends teaching beyond the traditional classroom. The online discussion board can serve to provide and substitute for the interactive dimensions found in the face-to-face classroom (Levine, 2007). Moreover, many researchers put emphasis on learners actively participating in the interaction process to increase the effectiveness of web-based instruction (c.f. Harasim et al., 1995; Levine, 2007). However, despite the importance of interaction in online discussion, the problem lies in the fact that online discussion is not as active as expected (Leem, 1999). Although most learning management systems intend to create an online learning community by providing opportunities for users to interact with other community members in online discussion forum, online discussion allows for limited social interchange (Gunawardena & Zittle, 1997). For such a reason, many online courses are criticized for failing to provide sufficiently engaging interaction so as to create a sense of social presence (Laffey, Lin, & Lin., 2006). Despite this criticism, however, online discussion forums are still considered to be a most

useful method (Im & Lee 2003) and more research is necessary to investigate ways to promote interaction and participation by considering learners' characteristics in new web generation.

3. Social interaction and social presence

Many studies related to social interaction in online learning environments have been conducted in recent years. Russo and Campbell (2004) indicate that most online educational programs are struggling with low completion and satisfaction, because learning management systems rarely support student's social interaction as face-to-face environments do. Their research shows that when students perceive other individuals as real in online classes, they are more likely to attend to their ideas, questions or concerns or to seek input or answers from them. Kreijns, Kirschner, Jochems, & Van Buuren (2004) also show that an important element of success of online learning is supporting students' social interaction. In fact, many researchers insist that social interaction in an online learning environment has become the most important element for students' learning (Kreijns, Kirschner, Jochems, & Buuren, 2007; Laffey et al., 2006; Mikropoulos, 2006; Rosso & Campbell, 2004; Tu & McIsaac, 2002). In addition, much research deals with social presence, which is associated with increased social interaction (Gunawardena & Zittle, 1997; Kreijns et al., 2004, 2007; Rourke, Anderson, Garrison, & Archer, 1999; Tu & McIsaac, 2002; Yang, Tsai, Kim, Cho, & Laffey, 2006).

Since Short, Williams, and Christie (1976) defined social presence as the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships, it has been understood as the degree to which people are perceived as real when they are in the computer-mediated environment. (Bystrom, Varfield, & Hendrixet, 1999; Gunawardena & Zittle, 1997; Tu & McIsaac, 2002). Russo and Campbell (2004) explain that social presence has traditionally been conceptualized as a medium's ability to convey perceptual and affective characteristics, such as warmth and support for personal and sensitive interaction. In an online learning environment, social presence is a measure of the feeling of community that a learner experiences, and it is a

vital element influencing social interaction. (Kreijns et al., 2007; Tu & McIsaac, 2002).

As mentioned above, since social interaction is an influential factor in online learning, social presence that is a critical element influencing social interaction might also affect the learning process. Thus, this study will examine how active use of Web 2.0 relates to social presence that might influence participation in online discussion forum.

Ⅲ. Methods

1. Participants

77 college students (55 males and 22 females) who enrolled in a virtual university course were recruited and participated in the study. The class title was The Practice of E-Advertisement and was open to students in the Department of Business Administration. It was an elective, not required, course for business administration majors. Among 77, 68 students (87%) responded to the questionnaire. Of the respondents, 73.5% (n=50) were male and 26.5% (n=18) were female. The age distribution was as follows:

Table 1. Participants' age

Information		Number of participants	Percentage	Total
Age	Under 20	24	35 %	68
	20	26	38 %	
	30	12	18 %	
	40	6	9 %	

2. Online discussion forum

Among various activities administered in a learning management system, such as instructional video watching, weekly quizzes, and term papers or tests, online discussion forum was selected as a measure of students' participation. This online discussion forum was

titled *Free Discussion on Advertisement* and open from the second week to the last week of fall semester in 2008. Students' participation was completely voluntary, because this study intended to examine the effect of students' active characteristics of using Web 2.0 functions on discussion participation. Any mandatory requirements that might diminish the differences between high and low levels of Web 2.0 users were eliminated. Therefore, neither an instructor nor researchers requested their participation. Also, their participation was not counted as part of final grade and they did not receive any type of penalty for not being participated.

3. Questionnaire

Participants' use of Web 2.0 functions and the perceived level of social presence were measured with a questionnaire.

Nine items asking about the usage of Web 2.0 were constructed with the adaptation of Web 2.0 properties included in A McKinsey Global Survey 2007 (Bughin & Manyika, 2007). Items asked participants to rate the frequency of using each Web 2.0 function, Blog (posting and/or scrap content), RSS feed, Podcast, meta-tags, social software, social networking, instant messaging, and collective intelligence, with five Likert scale (1= Never, 2= Seldom, 3= Sometimes, 4= Often, 5= Very Often) (reliability = 785).

Perceived level of social presence was also measured with survey questions. There is currently no widely accepted operationalized measure of social presence (Biocca, Harms, & Burgoon, 2003; Kjreijins et al., 2004; Witmer, Jerome, & Singer, 2005), so a social ability instrument developed by Laffey et al. (2006) was used for this study as was in previous research. Among three factors, social navigation, social presence, and social connectedness, included in this instrument, five items were to assess students' social presence. For this study, only four of them were selected by excluding one item, "*the actions of the others (instructor, mentors, and students) in the course were easily visible in our online system*" (Laffey et al., 2006, p. 170), since it was not appropriate to a virtual learning environment. Participants were asked to rate how much they agree to each item with five Likert scale (1= Strongly disagree, 2= Disagree, 3= Average, 4= Agree, 5= Strongly agree). This

survey's reliability was .849.

Participants' gender, age, and major were also surveyed as demographical information.

After we translated the questionnaire into Korean for implementation, three Korean-English bilingual instructional technologist reexamined the accuracy of translation (face validity). Then, a questionnaire was distributed through the learning management system at the end of the semester. In order to increase response rate, it was used in place of a weekly quiz. Not answering for the questionnaire did not affect participants' final grade.

4. Data analysis

Three methods were used for data analysis.

Firstly, the data from the questionnaire was analyzed using SPSS package. A Pearson correlation analysis was administered to investigate the relation between the usage level of the Web 2.0 functions and social presence among the online discussion participants. Also, an ANOVA analysis was conducted to examine whether the level of using Web 2.0 can influence the participation in an online discussion forum.

In addition, Social Network Analysis (SNA) was used to analyze the activities in the online discussion forum. SNA has developed measures of centrality that can be used to identify network members who have the most connections to others, which would indicate a high degree of centrality (Durrington Repman, Valente, & W., 2000). The strength of the SNA approach is that it enables researchers to both examine the relationships among a group of social actors rather than to study individuals as separate from their social context, and to explain important developmental, social, economic, and learning outcomes for particular individual and group networks (Lowes et al., 2007; Penuel, Sussex, Korbak, & Hoadley, 2006). In terms of online environments, SNA offers an opportunity to understand how communication among members influences specific outcomes for group members.

UCINET 6.0, social networking analysis program developed by Analytic Technologies (http://www.analytictech.com), was used to analyze centrality and density of the social network, to classify participants into a core group and a peripheral group. The two groups were then compared using SPSS. Only non-directional relations were considered for this

study, since the number of interactions among discussion participants was considered more important than the direction of communication. There are two formats to represent network data using UCINET, socil-matrix and graph. Both representations contain relational information but the socio-matrix offers numerical information, while the graph provides a visual model of a social network. In this study, the socio-matrix format was used to represent participants' relationship in discussion forum.

Lastly, content analysis was used to assess the type of communication. While a network analysis provides information about the extent of interaction, content analysis offers information about the content of interaction (Lowes et al., 2007). The messages were coded using the coding scheme used by Lowes and her colleagues (2007); which collapses the complex coding schemes used by Garrison et al. (2001), Rourke et al. (1999), and Swan (2002) (see Lowes et al., 2007, p. 190) into three categories: cheerleading/affirming, new information, and questioning/challenging. Two rater classified each message posted according to the coding scheme. To ensure inter-rater reliability, two rater discussed about coding scheme and strategies before coding. Any discrepancies was adjusted with sufficient discussion.

Ⅳ. Results

A total of 119 messages were posted from 31 of the 68 (46%) students who responded to the questionnaire. Only one message was posted from the instructor, giving notice of opening the discussion forum.

1. Web 2.0, social presence and participation

First of all, the relation between students' perceived levels of social presence and their use of Web 2.0 was investigated. The sum of four social presence questions from the questionnaire was used to analyze participants' social presence. A Pearson correlation analysis showed that participants' social presence (M=7.36, SD=1.71) had no relation to the level

of using Web 2.0 (M=39, SD=12.84) (r=-.078).

In addition, whether the level of using Web 2.0 functions would influence the participation in the online discussion forum was examined. For analysis, by the mean (M=27.77 SD=8.15) of total Web 2.0 scores from nine survey questions, 68 students were divided into two groups, high (M=33.13, SD=6.92) or low (M=21.64, SD=4.14) Web 2.0 users. From the data, it was shown that, among 31 participated in online discussion forum, 15 belonged to high Web 2.0 group and 16 were in low Web 2.0 group. It seemed that there was no difference between high and low Web 2.0 users in participating online discussion forum. An ANOVA analysis also confirmed that the difference was not statistically significant (F (1, 66)=.001, p=.972).

2. Social network analysis

The exchanges among the 31 participants who posted to the forum were coded as follows: if no messages were exchanged between two participants, it was coded as 0; if there was an exchange between two participants, it was coded as 1. Also, for example, if one individual posted responses to 3 different individuals, they would receive a score of 3, and if they responded 3 times to the same individual, they would receive a score of 3, too. As mentioned above, all relations were considered as non-directional relations.

SNA showed 16.75% (SD= 0.5359) of density[1] and 8.367% of network centralization[2]. A degree centrality[3] analysis showed a mean of 4.690 and a standard deviation of 4.625. Using Ucinet 6.0, the core and the periphery groups were categorized. The core group was composed of 13 actors and the periphery group of 17 actors.

The network diagram (figure 1) shows the overall density and centrality. The size of the circle indicates each participant's share of all exchanges and the thickness of the lines shows the frequency of communication between individuals. The feature of each actor indicates its

1) Density represents the concentration of relationships in a social network dividing the sum of all ties by the number of possible ties

2) Centralization is an index of the dispersion of the individual centrality and prestige(actor popularity)

3) Degree centrality refers to the extent to which an individual actor has numerous links to other members in a given social network.

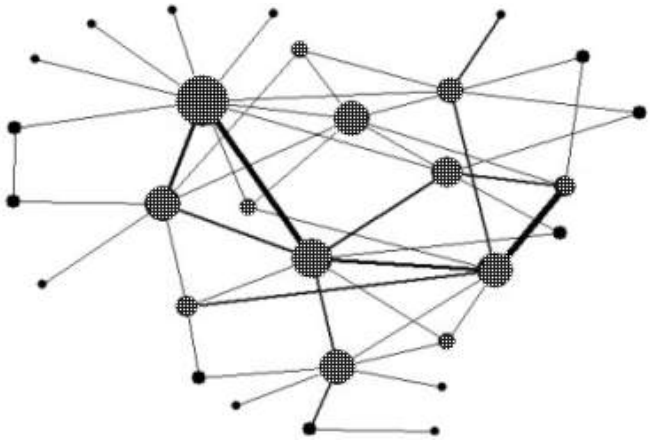

Figure 1. Network diagram

group; textile represents the core group and black represents the periphery group.

The differences of Web 2.0 usage and social presence between the core and the periphery groups were analyzed in SPSS. As for the Web 2.0 usage, the core group (M=32.08, SD=8.87) showed higher Web 2.0 scores than the periphery group (M=24.47, SD=5.89). An ANOVA showed that this difference was statistically significant, F(1, 29) = 7.96, p= .009. This means that those who use more Web 2.0 functions tend to become the core group in online discussion. As for the social presence, unlike the expectation, the core group (M=11.42, SD=2.11) showed lower social presence scores than the periphery group (M=12.31, SD=3.5). However, this difference was not statistically significant, F(1, 29) = .01, p = .916. This means that the level of perceived social presence does not affect online discussion participation.

Table 2. Web 2.0 usage between the core and periphery group

	SS	df	MS	F	Sig.
Between Groups	426.208	1	426.208	7.960	.009
Within Groups	1499.158	28	53.541		
Total	1925.367	29			

3. Content analysis

To analyze whether there was any difference in content of 118 messages from the discussion forum between the core and the periphery groups emerged from the previous SNA, the content analysis was performed using the coding scheme proposed by Lowes et al. (2007). First of all, in terms of the amount of participation, as expected, the core group posted 85 (72.03%) of the 118 messages, while the peripheral group posted only 33 (27.97%) messages. This difference was statistically significant, $t=6.094$, $p< .00$, meaning that the core group posted significantly more messages than the periphery group. In addition, there were significant differences in the types of messages posted. According to Table 3, the core group posted more Cheerleading or affirming messages than the periphery group, which was statistically significant ($p< .05$). Also, the core group posted more Cheerleading or affirming messages with new information than the periphery group ($p< .05$). Since it was shown in the previous analysis that the core group is high Web 2.0 users, this might mean that those who use more Web 2.0 functions posted more Cheerleading or affirming messages with or without new information.

Table 3. Content Analysis: Number of communication and result from t-test

	Core Group	Periphery Group	Total	Sig.
Code1: Cheerleading/affirming	29 (34.1%)	7 (21.2%)	36 (30.5%)	.023*
Code2: New information	28 (32.9%)	13 (39.3%)	41 (34.7%)	.423
Code3: Questioning/challenging	6 (7.1%)	2 (6.1%)	8 (6.8%)	.576
Code4: Code 1 + Code 2	14 (16.5%)	3 (9.1%)	17 (14.41%)	.048*
Code5: Code 1 + Code 3 Code 2 + Code 3 Code1+Code2+Code3	8 (9.4%)	8 (24.2%)	16 (13.6%)	.331
Total	85 (100%)	33 (100%)	118	

*p < 0.05

V. Discussion

Throughout this study, whether the use of Web 2.0 influences participation and activities in the discussion forum was examined.

The data shows that the usage of Web 2.0 did not affect students' participation in the discussion forum. However, from the social network analysis, we found that those who use more Web 2.0 functions tended to become the core group in the online discussion forum. Also, the content analysis revealed that once joining the discussion forum, students who used more Web 2.0 functions posted more messages as a core group than those who use less Web 2.0 functions. Furthermore, the core group posted more 'Cheerleading/affirming' messages than the periphery group. Since using Web 2.0 functions is characterized as an active creation of user content and sharing it with others, Web 2.0 users have a tendency to post their self-created content to the web more frequently. This tendency may also influence online discussion participation by allowing students to get themselves deeply involved in the discussion process. In fact, the result of this study shows that students who use more Web 2.0 functions not only become a core of interaction among discussion participants but also actively post more messages. In addition, this study indicates that the core group students who use more Web 2.0 functions show more sociable activities, which is consistent with results of previous studies (e.g., Anagnostopoulog et al., 2005; Yang et al., 2006; Zhang et al., 2007). While other coding categories, such as 'New information,' and 'Questioning/challenging', are more related to performing task, messages in 'Cheerleading/affirming' category represent interpersonal interaction among participants in online discussion. One of the main features of Web 2.0 functions is to increase the Internet users' social activities, and this study confirms that there is also a positive relationship between Web 2.0 usage and sociable activities in an online discussion forum.

Although it was hypothesized that students' social presence might be related to the level of Web 2.0 usage, no correlation between social presence and the usage level of Web 2.0 was found among the discussion participants. Also, it was found that there was no difference in the perceived level of students' social presence between the core and the periphery groups. This means that the core group who tend to use more Web 2.0

functions does not feel more social presence than the periphery group who use less Web 2.0 functions. This result is similar to those of Sam, Othman, & Nordin (2005), which argue that students who show higher levels of Internet usage may not necessarily feel more comfortable using it.

Although the results from the social presence questionnaire were not statistically significance, the core and the periphery groups showed differences in the types of messages they posted. The content analysis indicates that the core group posted more cheerleading/affirming content than the periphery group. Posting more cheerleading/affirming messages may mean that the core group posted more sociable contents than the periphery group. In other words, the core group who uses more Web 2.0 functions focuses social interaction more than the periphery group who uses less Web 2.0 functions. Therefore, the type of messages in the online discussion forum seems to be influenced by the usage of Web 2.0 and in particular, the use of Web 2.0 seems to enhance social interaction among students in the online discussion.

In short, a few things are found from this study. Firstly, the usage level of Web 2.0 does not influence participation in an online discussion forum. Secondly, the perceived level of social presence is not different among discussion participants. Lastly, those who use more Web 2.0 functions tend to become the core group in the discussion forum and leed discussion by actively involve in a discussion process. However, this study has limitations. With a small number of participants, it is hard to generalize the result and cautious interpretation of the result is required. It is also possible that the result of this study would be different if the data had been collected from different sample.

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<요 약>

웹2.0의 사용이 온라인 토론의 참여와 활동에 미치는 영향

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웹2.0이라고 일컬어지는 새로운 형태의 인터넷은 사용자들로 하여금 상호작용적 참여와 소셜 네트워킹을 더욱 가속화시키고 있다. 이러한 변화는 온라인 상의 학습자들에게도 큰 영향을 미칠 수 있는 것으로 여겨진다. 특히, 온라인 토론에서의 학생들의 활동은 다양한 웹기능을 활용하는 사용자의 특성에 따라서 영향을 받을 가능성이 있다. 따라서 본 연구에서는 웹2.0 활용여부가 학생들의 사회적 실재감과 관련이 있는지, 또한 웹2.0 활용여부가 온라인 토론에서의 참여와 활동에 어떠한 영향을 미치는지 알아보고자 하였다. 이 연구를 위해서 온라인 토론방을 한 학기동안 개설하고 학기말에 설문을 통해 데이터를 수집하였다. 분석결과 웹2.0의 사용과 사회적 실재감은 온라인 토론의 참여 여부에는 영향을 미치지 않음을 알 수 있었다. 하지만 토론 참여자들을 대상으로 한 사회연결망 분석과 내용분석을 통해서 살펴본 결과, 웹2.0의 사용여부에 따라 학습자들의 참여형태가 다른 것으로 나타났다. 즉, 사회연결망 분석을 통해 구분된 중심 집단은 주변 집단 보다 웹2.0의 기능을 더 많이 사용하였고, 내용분석 결과 토론을 주도하는 중심 집단은 '지지하기/동의하기' 등의 토론 활동을 더 많이 하였다. 요약하면, 웹2.0 활용여부가 온라인 토론 참여 여부에는 영향을 주지 않지만, 토론에 참가한 참가자들 중 웹2.0의 기능을 활발히 사용하는 학습자들은 온라인 토론을 주도하는 중심 집단으로 토론을 이끌어가는 역할을 하는 것으로 나타났다.

주요어 : 웹2.0, 온라인 토론, 사회적 실재감, 사회적 상호작용

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