

## Psychological Distance between Students and Professors in Asynchronous Online Learning, and Its Relationship to Student Achievement & Preference for Online Courses

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Relationships between students' perception of psychological distance with online professors and their academic learning achievement and their intention to continue online learning were examined. The courses selected for this study are two online courses: 1) 'English Grammar' and 2) 'TOEIC (Test of English for International Communication) Preparation' offered by a campus-based, medium-sized university. This study employed a mixed-methods approach by conducting a survey as well as one-on-one interviews with students. Students who feel psychologically distant with the online professors show significantly lower degree of perceived learning achievement, and higher tendency not to take online courses any more. All the three scales measuring the psychological distance -mutual awareness, connectedness, and availability- with professors turned out to be significantly related with students' perceived learning achievement. According to the result of the interview data analysis, the student interviewees unanimously said that the university should limit the number of online courses that students can register in a semester to one or two courses. Most students regard low interactivity of online learning as inevitable phenomenon. There is a statistically significant difference in perceived learning achievement between the online preferred group and the offline preferred group. Also, there is a significant difference in connectedness and availability and no significant difference in the degree of mutual awareness between the online and the offline preferred group.

*Keywords : asynchronous online learning, student-professor relationship, psychological distance, learning achievement, intention to continue online learning*

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## Introduction

Asynchronous online learning is expected as an ideal learning environment for rich interaction that was not supported both in early distance education and typical classrooms (Mikulecky, 1998; Mahesh & McIsaac, 1999). On the contrary to this expectation, Boshier and his colleagues (1997) reported that the most online courses they had examined were terrible in terms of interactivity. There is growing acceptance for the view that interaction is positively related to learning outcomes, motivation, student satisfaction, and sense of belongingness (Shin, 2003). However, it seems that poor interactivity in online courses is regarded as what it is supposed to be or what it cannot be avoided due to “being online.” Thus, low amount of interaction in online courses may not be complained by learners. The similar perception was previously reported regarding the corporate online programs in America (Bonk & Zheng, 2005; Lee, 2010). However, interaction still matters as many previous studies suggest. Interaction affects social presence, teacher immediacy, and perceived psychological distance, which, in turn, finally affects learning satisfaction and outcomes. Many researchers found that if properly designed, online courses actually can be more effective (Clark, 1983; Owston, 1997), and more interactive than traditional ones, providing more personal and timely feedback (Hirumi & Bermudez, 1996).

Student-professor relationship can be a predictive variable for student perceived learning achievement (Shin, 2003). According to Russo and Benson (2005), the student perception of the professor’s presence was positively correlated with the student learning and student learning satisfaction. In this vein, how students perceive their professors and the relationship with them needs to be considered for instructional effectiveness of online learning. In the Chickering and Gamson’s (1987) *7 principles of good practice in undergraduate education*, the very first principle is that good practice encourages contact between students and faculty. Regarding this principle, they said as follows: “Frequent student-faculty contact in and out of

classes is the most important factor in student motivation and involvement... Knowing a few faculty members enhances students' intellectual commitment and encourages them to think about their own values and future plans.” it is assumed by faculty and students that the way the student-professor relationship is established and its characteristics may be unique in online environments. In addition, the expectation that students as well as professors have in regard to this relationship in the online context, may not be the same as in the traditional classrooms. As it is expected that online courses exponentially increase in college, online student-professor relationship becomes pervasive even in traditional campus-based universities. Some people express their concern over increasing online courses in that “technology will denigrate higher education and destroy the special relationships professors have with their students (Rovai & Barnum, 2003, p.57).” Several studies substantiate this belief by providing empirical evidences that online courses can be impersonal, and potentially dehumanizing (Nissenbaum & Walker, 1998; Phipps & Merisotis, 1999).

The question inspiring this study is if the student-professor relationship established in the online learning environment is conducive to students' learning and continuing motivation. Many colleges seem to believe that merely online lecture can provide sufficient learning experience. It is said that ‘teaching’ is not just delivering professor’s knowledge to her students. Teaching and learning is a reciprocal communication process by exchanging messages and feedback toward mutual understanding (Rogers & Kincaid, 1981). This study assumes that the professor-student relationship is critical in teaching and learning, which is also true to online instruction. Shin (2003) criticized existing studies in that they investigated superficial aspects of interaction among participants and failed to investigate psychological distance perceived by participants. Rekkedal (1986, cited in Kang & Kim, 2006) supported Shin’s claim that student’s intimacy is more critical than frequency of contact or interaction.

In this study, the online student-professor relationship was investigated by two

different methods: 1) a paper-based survey for measuring students' perception of psychological distance with their online professors and 2) one-on-one interviews for listening to students and professors regarding their expectations of the relationship in online as well as their experiences.

There is quite sufficient knowledge base on quantitative investigation of the degree of interaction or social presence in online learning. There is, however, few researches focusing on the online relationship between student and faculty, and still a deficient qualitative analysis of the relationship. The research questions are as follows:

1. Is the psychological distance between student and professors in the online environment related to students' perceived learning achievement?
2. Is there a significant difference in the psychological distance of online professors between the online preferred group and the offline preferred group?
3. Is there a significant difference in the perceived learning achievement between the online preferred group and the offline preferred group?
4. Do students have different expectation about online student-professor relationship from offline?

## **Literature review**

In K-12 settings, considerable research have investigated the relationship between student and teacher in regards to student motivation and learning outcomes (Christophel, 1990; Gorham, 1988; Kearney, Plax, & Wendt-Wasco, 1985; Richardson & Swan, 2003). While the relationship between student and professor is also critical for good college educational experiences (Chickering & Gamson, 1981), few studies investigating the relationship have been found in higher education contexts and even rare in online environments.

## Psychological distance related concepts

### **Social Presence**

Several studies support that social presence is, in general, related to student learning outcomes, and student satisfaction of online learning (Russo & Benson, 2005; Richardson & Swan, 2003; Moore, Masterson, Christophel & Shea, 1996). Social presence is originally defined by Short, Williams and Christie (1976) as “the degree of salience of the other person in the interaction and the consequent salience of the interpersonal relationships.” The definition has been dominantly adopted by several subsequent studies. It is defined as “the perpetual illusion of nonmediation” in Lombard and Ditton (1997).

However, there are some criticisms in that their definitions of social presence and the ways that they measured the concept failed to account for context, task or participant differences (Picciano, 2002). To date, the concept of social presence has been redefined by several scholars as feeling of being with others (Heeter, 1992), and the level of awareness of the co-presence of another human being or intelligence (Biocca & Nowak, 2001). Tu (2002) posits that social presence is the degree of person-to-person awareness that occurs in a mediated environment. In sum, there is a common factor among those frequently cited definitions, which is the individual sense of ‘others.’ Several studies redefined and operationalized the concept, social presence for their study purposes. Russo and Benson (2005) classified the concept into three types and included perceptions of own presence as one sort of social presence. Kang and Kim (2006) measured the perception of own technical skills to use an online learning management system as a partial construct of social presence. Richardson and Swan (2003) seem to equate teacher immediacy with social presence. Garrison et al. (2000) present three elements of an educational experience: social presence, cognitive presence and teaching presence. In their model, teaching presence is close to teacher immediacy, although it “includes designing and managing learning sequences, providing subject matter expertise, and

facilitating active learning (p.3).” Therefore, it needs to be cautious to indiscriminately interpret research findings due to its diverse definitions. In this vein, this study sought alternative concept that can stand for the relationship between student and faculty in asynchronous learning network (ALN) better.

### **Immediacy**

Immediacy is defined as the degree of “perceived physical and/or psychological closeness between people (Christophel, 1990, p.325).” Andersen (1979) regards the role of teacher immediacy as reducing “physical and psychological distance between teachers and students (p.544).” The examples of teacher immediacy include oral behaviors such as using humor, calling students by name, and commenting on students’ work. Previous studies reported that teacher immediacy behaviors are related to positive learning outcomes (Kearney, Plax, and Wendt-Wasco, 1985) and significantly to students’ affective learning (Gorham, 1988). It is also reported that professor immediacy is positively related to student learning in online courses (Freitas, Myers, and Avtgis, 1998). However, some studies failed to clearly define the concept, and, to some extent, have been arbitrarily interpreted by researchers. Therefore, this study adopts psychological distance between student and professor instead of immediacy or social presence in order to avoid conceptual ambiguity.

### **Psychological Distance**

The physical separation in ALN is likely to lead psychological separation which may cause feeling of disconnect and isolation (Rovai, 2002). In this study, the student-professor relationship perceived by students, in other words, the perceived closeness between student and professor is operationalized as the psychological distance “that a communicator puts between themselves and the object of their communication (Wiener & Mehrabian, 1968). Moore (1993) defines “transactional distance” as their psychological and communications space between student and instructor. Just as psychological distance, transactional distance is relative feeling

which is different for each person. Accordingly, psychological distance is measured as students' perceived degree of "interpersonal relationship which exists between perceiver (student) and perceivee (professor) (Fiedler, 1953, p142)." Shin (2003) claims that the psychological distance between professor-student, and student-student, should be reduced for successful e-learning. Psychological distance can be reduced through socio-emotional communication such as body language, facial expressions, and vocal tones which, however, will be eliminated in the online environment, especially text-based interaction. As a result, the degree of psychological distance in ALN is more serious than in face-to-face learning environment. Previous research (Moore, 1993; Rovai, 2002; Shin, 2003) argue that psychological separation in ALN causes high drop-out rates, sense of isolation, low participation, low degree of learning persistence, which all affects learning achievement.

In this study context, the psychological distance between student and professor in the asynchronous online environment was conceptualized with three factors: 1) mutual awareness, 2) connectedness, and 3) availability. These factors were drawn from the two studies by Shin (2003), and Hwang (2006) and modified to make them fit this specific study. Mutual awareness is students' feeling that they know their professor each other. Connectedness is defined in this study as students' feeling that professor is attending in the online class together when they are simultaneously. Short et al. (1976) regards "evidence that the other is attending" as a critical characteristic for promoting meaningful interaction. Availability (or responsiveness) is operationalized as students' feeling that their professor is (will be) available when they need her comment, answers to their questions, and academic support.

## Methods

### Setting

The courses for this study are two fully-online courses: 1) English Grammar and 2) TOEIC (Test of English for International Communication) Preparation for undergraduate students. These two courses were 3 credit each and were offered in the fall semester of 2008 by a medium-sized university (hereafter, called as A university), located in Seoul, Korea. Online lectures of each course were recorded by two professors. One course had three sections and each section had approximately 100 students. The professors who recorded online lectures were assigned to one or two sections for course management such as notifying schedules, checking learning progress, answering to questions, creating and grading assignments, and registering student grades.

### Instruments

#### **Paper survey**

The fourteen-item survey questionnaire was developed. One item asked who your professor among two professors is, which asked who the participants feel belongingness to. Nine items asked the perceived psychological distance of online professors, which were adapted from the instruments used in the study of Shin (2003), Hwang (2006), and Burgoon and Hale (1987). The nine items consist of the three concepts of psychological distance (see Table 2): 1) mutual awareness, 2) connectedness, and 3) availability (or responsiveness). The participants were asked to mark one on Likert-type scales of 1 to 5 (1=strongly disagree, and 5=strongly agree). In addition, it asked participants' perceived degree of learning achievement and professor immediacy compared to offline professors. In this study, the self-reported learning achievement was measured as student learning. Much research



evidences suggest the validity of students' self-reports of learning (Corrallo, 1994; Pace, 1990; Picciano, 2002). The last question asked students' intention to enroll online courses in the future.

### **One-on-one interview**

The semi-structured interview protocol was constructed to solicit more elaborate opinions and for the interviewer to pose emergent questions when necessary. It contained seven open-ended questions about overall online learning experience, past experiences with faculty in the A university, expectation of the relationship with professors, and if there is any difference in the expectation toward online professors from offline professors.

## **Participants**

### **Survey**

All the students enrolled in the case courses were recruited for the survey. The total student participants in the survey were 499. Among them, 60.5% ( $n=302$ ) are male and 39.5% ( $n=197$ ) are female students. Regarding e-learning experience before the enrollment of the case courses, only 18.1% of them ( $n=90$ ) had online learning experience in college. Regardless of e-learning experience in college, most Korean students already have had online learning experiences before they came to college, since EBS (Educational Broadcasting Systems in Korea) and many other commercial online education companies provide various e-learning contents for college entrance exam preparation.

### **Interview**

17 students (nine male and eight female) who had already participated in the paper survey volunteered for this interview.

## Procedures

The survey was conducted on the day of the final exam, December 20<sup>th</sup>, 2008. The student interviews have been done for one week from February 6<sup>th</sup> to February 13<sup>th</sup>, 2009. All the interviews were recorded with a digital voice recorder and were transcribed. The researcher sent a summary of each interview to the interviewee for a member-check via email. The interviewees have sent the email back to the researcher with some corrections and additions when necessary. All the participants were given with a gift card as a reward for participation.

## Data Analysis

The survey data were analyzed with SPSS 12.0 for Windows. The analysis methods were descriptive analysis, t-test, and Pearson correlation. Reliabilities of the scales in the survey questionnaire are presented in Table 1. The alphas are .86, .79, and .91 respectively, which can be interpreted as relatively high reliabilities of the scales. The interview data were analyzed by constant comparison method for exploring emergent themes.

Table 1. Reliability of scales: Cronbach Alphas

Scales	# of items	Alpha
Mutual Awareness	4	.86
Connectedness	3	.79
Availability	2	.91

## Results

### Question 1: Is the psychological distance of online professors related to the students' perceived learning achievement?

Table 2 presents the descriptive analysis data for the nine items measuring the psychological distance of online professors in the survey questionnaire. The mean values of the four 'Mutual Awareness' items were lower than other items of 'Connectedness' and 'Availability.' Regarding the four items of 'Mutual Awareness', the participant students reported they do not know each professor well ( $M=2.38$  and  $2.52$  respectively) and that the professors do not know about themselves to the lower extent ( $M=1.83$  and  $1.85$ ). In short, students do not think online professors know about themselves and also they do not know them that well.

Table 2. Descriptive analysis result of the nine items measuring social presence

Scale	Items	<i>M</i>	<i>SD</i>
Mutual Awareness	I know A professor well.	2.38	1.06
	I know B professor well.	2.52	1.08
	A professor knows me well.	1.83	.96
	B professor knows me well.	1.85	.94
Connectedness	My section professor had interest in my learning.	2.86	1.02
	My section professor responded to my (or peers') question(s) kindly.	3.60	.97
	My section professor responded to my (or peers') question(s) promptly.	3.63	.95
Availability	A professor would be willing to help if I ask her academic advice.	3.95	.90
	B professor would be willing to help if I ask her academic advice.	3.99	.90

Note. The scales can range from a low of 1 to a high of 5.

The mean value of the perceived degree of academic achievement is 3.55 ( $SD=.93$ ) out of 5, which means the overall perceived learning achievement in the case online courses was slightly positive.

To test whether the psychological distance of online professors is related to students' perceived learning outcomes, Pearson correlation was conducted. All the three scales (mutual awareness, connectedness, and availability) measuring the psychological distance of online professors turned out to be significantly related with students' perceived learning achievement ( $p<.01$ , see Table 3). Relatively, 'mutual awareness' between professors and student showed relatively weaker relation to the perceived achievement ( $r=.34$ ) than 'connectedness ( $r=.46$ )' and 'availability ( $r=.478$ )' did. In other words, students with higher perception on their learning achievement in online learning had higher perceived degree of mutual awareness, connectedness and availability of their online professors. This result agrees with Shin's claim that "educator-learner relationship can ultimately determine" student learning achievement (Shin, 2003, p.70).

Table 3. Correlation of perceived learning achievement with three scales of psychological distance

		Mutual Awareness	Connectedness	Availability
Perceived Learning Achievement	Pearson R	.38*	.46*	.48*

Note. \*  $p<.01$  (2-tailed)

**Question 2: Is there a significant difference in the psychological distance of online professors between the online preferred group and the offline preferred group?**

67.5% ( $n=337$ ) of the participants reported that they would enroll other online courses in the future, while 32.5% ( $n=162$ ) would not select online courses any more. The participants were grouped by their choice on future online course

enrollment and were labeled as the online preferred and the offline preferred group respectively.

Initially, the nine scales measuring the psychological distance were merged into one integrated variable to study if the degree of psychological distance is related to student’s intention to continue online learning. The mean value of the integrated variable in the online preferred group is just slightly positive, 3.02 ( $SD=.63$ ), while that in the offline preferred group is 2.82 ( $SD=.66$ ), which is negative.

The study assumed that the intention to continue online learning is closely related with their perceived psychological distance of online professors. To test this assumption, independent-samples t-Test was conducted. Since the significance value for the Levene test is high (.64), it is possible to assume equal variances for both groups (see Table 4). As a result, there is a statistically significant difference in the psychological distance between the online preferred group and the offline preferred group ( $t=3.37, p<.01$ ). Students feeling closer with their online professors are more likely to take online courses in the future, while those feeling more distant are less likely to take online courses anymore. This result shows a finding opposed to Shin (2003)’s research result that the psychological distance of teacher does not predict learning persistence.

Table 4. t-Test for the psychological distance of online professors between the online preferred and the offline preferred group

	Levene’s Test for Equality of Variances			t-Test for Equality of Means		
	<i>F</i>	<i>Sig.</i>	<i>t</i>	<i>df</i>	<i>Sig.</i> (2-tailed)	<i>Mean Difference</i>
Equal variances assumed	.22	.64	3.37	490	.00	.21

Table 5 shows the t-Test results for each scale for the psychological distance between the online preferred and the offline preferred group. There is no significant difference in the degree of ‘mutual awareness’ between the two groups. But, there is a significant difference in ‘connectedness ( $t=2.94, p<.01$ )’ and

‘availability ( $t=3.32, p<.01$ )’ between the groups. Mutual awareness between student and professor in the online environment does not have effect upon students’ online learning continuing intention, while connectedness and availability do.

As commented earlier, many students tend to regard low interactive online learning programs as what they are supposed to be and do not complain about it. Since they have not experienced highly interactive online courses, they would not imagine they can actively interact with professors or other students in the online environment. Most student interviewees asked the interviewer back with doubt if it is really possible when she said online learning can be very interactive and can provide an environment to establish deep human relationship. For students, whether they know professors well or the professors know about them does not matter. This finding does not support the previous studies since many research articles claim that social presence, perceived sense of being there of others or themselves is critical to motivation and achievement. Students in this study context do not expect that online professors know about themselves. Thus, they did not explicitly show much concern over low interaction with professors in the online environment. Similarly, a recent study about student/faculty relationships on a social network service site reports that contact with the professor on the service had no effect upon students’ ratings about the professor because the students do not believe their professor is present on the site at all (Hewitt & Forte, 2006).

Table 5. t-Test for three scales of psychological distance between the online and the offline preferred group

		Levene's Test for Equality of Variances		t-Test for Equality of Means			
		<i>F</i>	<i>Sig</i>	<i>t</i>	<i>df</i>	Sig.(2-tailed)	Mean Difference
Mutual Awareness	Equal variances assumed	.09	.77	1.92	492	.06	.16
Connectedness	Equal variances assumed	.77	.38	2.94	497	.00	.23
Availability	Equal variances assumed	2.36	.13	3.32	494	.00	.27

**Question 3. Is there a significant difference in the perceived learning achievement between the online preferred group and the offline preferred group?**

In terms of the degree of perceived learning achievement, the mean of the online preferred group is 3.70 ( $SD=.86$ ), while that of the offline preferred group is 3.23 ( $SD=.99$ ), relatively lower than the counterpart group.

The study assumed that the intention to continue online learning is closely related with their perceived learning achievement. Independent-samples *t*-Test tested this assumption. Since the significance value for the Levene test is high enough ( $Sig=.21$ , See Table 6), it is possible to assume equal variances for both groups. As a result, there is a significant difference in the degree of perceived learning achievement between the two groups ( $t=5.41$ ,  $p<.01$ ). Put it differently, students with higher learning achievement in the online learning environment would like to continue online learning, while the students who perceived lower learning achievement prefer taking offline courses. It can be said that personal learning experience in the online learning environment can affect students' intention to take online courses in the future. Again, the perceived learning achievement is significantly related to the degree of social distance of online professors.

Table 6. *t*-Test for Perceived Learning Achievement between the online preferred and the offline preferred group

	Levene's Test for Equality of Variances		t-Test for Equality of Means			
	<i>F</i>	<i>Sig</i>	<i>t</i>	<i>df</i>	<i>Sig.</i> (2-tailed)	<i>Mean Difference</i>
Equal variances assumed	1.60	.21	5.42	497	.00	.47

**Question 4. Do students and professors have different expectation online student-professor relationship from offline?**

**I do not expect professors' prompt answer in the online environment**

Most participant students reported that they do not post any content-related questions on the Q&A board, which was coincided with the analysis of the LMS for the selected courses. A few questions were posted but most of them were about administrative subjects such as about academic schedule, assignment, exam site information and the like. They said that they would rather ask questions to their friends who are excellent in the topic or post a question on the internet portal site such as Naver Jisik in (<http://kin.naver.com>), a Q&A site where anyone can post a question and post an answer. The answers offered by anonymous people might be wrong and not be substantiated with correct information. But they will surely be the fastest. Then, why do students not ask questions to their professors in the online environment? They explained as follows:

“ I haven't posted any questions to the Q & A board. I doubt that professor would respond to my question promptly. I rather asked to my friends or posted question to an internet site. People in the Internet would give answers very fast. The answers might be incorrect though (Eunji).”

**Mutual awareness makes me ask**

Questioning is one of the effective instructional methods. Questions from instructors trigger students' thoughts and sometimes break the equilibrium status in their current cognitive structure. Questions from students are valuable in that they are a starting point for communication toward mutual understanding between instructor and student. However, unfortunately, there are few instances of active communication through questions and answers in the learning management system.

“Only when a professor knows me as well as I know her, I could speak to her. Then, I could ask questions (Yurina).”



“If I feel close with professors, I would not hesitate to visit them. When I don’t think that she knows me and I feel distant with her, I would rather ask questions to classmates, instead (Eunji).”

As the two students point out, mutual awareness and comfortable atmosphere is required for deriving questions from students. Therefore, creating a Q&A board is not sufficient for encouraging interaction in the online. Instructors are responsible for establishing a comfortable environment and close relationship with students through various communication channels and strategies.

Mama (2001) claims that students in the online class felt that the relationship with online professors was more personal than in site-based courses (cited in Hostetter & Busch, 2006). In the same vein, an interviewee said that she feels much closer with online professors than professors in the large face-to-face classes.

“I didn’t feel that far with online professors because large-sized classes make me feel much more isolated and much far-off with professors. I think I am much closer with online professors since I look at her during the entire semester though a monitor just as in front of me. The professor seems to talk to me directly. Rather, in a large-sized class, I doubt the professor knows me. I met them on the mid-term exam site for the first time in person, but I didn’t feel distant with them (Yurina).”

But, most students except Yurina unanimously said that they do not expect to have mutual awareness and frequent and deep interaction with professors in the online learning environment and asked the author back if rich interaction is possible.

“I’ve never expected to have interaction with online professors. Yes, we can have superficial interaction a few times. Is it really possible to have meaningful interaction with them online? (Hyokyung)”

Due to this low anticipation about interaction in the online 'learning' environment, students would not complain about meager interactivity of the current online learning courses. Although the item about interaction in the course evaluation questionnaire scored fairly high, it should be cautious to interpret the result favorably as it seems. It may be so not because of actually high interaction in online courses, but because of students' low expectation about interaction.

### **We expect more than academic knowledge from professors**

Students reported that they do not want to gain just topic related knowledge from their professors. They also want to listen to their professors' personal wisdom and experiences. However, pre-recorded online lecture series do not contain such messages because professors are reluctant to leave their personal stories that will be stored digitally and vulnerable to virtual exposure.

“I hope to listen to a professor's experiences in addition to her lecture. Her personal experiences can trigger my thinking and elucidated my problems sometimes (Haesun).”

However, some students said that they just expect topic-related information from online professors because they do not think it is possible to develop a close relationship with professors.

“I don't expect more than direct lecture on a certain topic from online professors. The relationship between me and online professors cannot be the same as that with offline professors. I can visit them whenever I need their help or advice about job search, study and so on. But, I would not visit online professors. And, I think it is too difficult to build up the relationship with online professors teaching only some key concepts very briefly in a relatively short time. Online professors seem to focus on delivering efficiently important information to students. I did not expect rich interaction with online professors as well as other students. I also do not have much anticipation

about the relationship with online professors, either (Donghyuk).”

### **Maximum credits from online courses needs to be limited**

The survey result shows that more than half participants reported they would register online courses for the next semester. However, the interviewees show concern about their learning experience through online courses. The students unanimously suggest that the university should limit the maximum credits that can be earned from online courses.

“Just one course, 3 credits would be the most appropriate. I oppose that the school allows students to take more than 3 credits through e-learning a semester (Eunji).”

Five students suggest at most 2 courses in a semester and the other twelve students thought just one course should be allowed for one semester for quality of learning experiences in a campus-based university.

## **Discussion**

The purpose of the present study was to ascertain how undergraduate students in a university perceive their learning and their relationship with professors in online courses. Smith (1996) found that many students would not select distance education because they felt that it could not provide learning they desired in a traditional course. The result of this study partially supports his finding that the perceived degree of learning is positively related to their intention for selecting online courses. However, the considerable numbers of students are likely to select online courses regardless of their perceived learning outcomes from the survey data as well as from the interview data analysis. The primary reason of registering online courses for campus-based university students is efficiency in scheduling in that there is no obligation to attend classes on time. Several students responded that

they would enroll online courses again, but they unanimously said that they would take at most one or two online courses in a semester, concerning their self-regulating ability as well as quality of learning experiences through online courses. Even though there is an increasing need for online courses, universities should not address this need just by offering more online courses because students tend to select online courses for personal efficiency over is educational quality. Increasing the number of poorly designed online courses predictably lead to inferior quality of online education in the end.

For providing quality online learning in college, e-learning should be designed as an interactive environment to “facilitate critical and creative reflection and dialogue between student and professor, not just to deliver information and contents via online (Lee, & Han, 2009, p.2).” As Clark (1983; 1991), Merisotis and Phipps (1999), and Owston (1997) wrote, in order to promote educational quality of course via distance technology, it is the key “how the medium is exploited in the teaching and learning situation (Owston, 1997, p.29).” According to them, the medium itself does not determine course outcomes. The study results agree with Clark (1983), and Rovai and Barnum (2003) that the effectiveness of online courses cannot be ascribed to “being online.” Now, it is necessary for everyone involved in online education to share the idea that online courses can be effective or ineffective depending upon their instructional design, technology, students, and other interdependent variables. Specifically, more practical guidelines are required to encourage professors to implement proper instructional strategies to decrease psychological distance by increasing the extent of mutual awareness, connectedness, and availability, and design to teach their specific academic domains , with the criteria by which excellent online teaching should be judged (Hosttetter & Busch, 2006). Most online courses in colleges tend to lack interactivity since many administrators regard teaching is all about delivering information and knowledge. What is worse, they want to offer online courses for the required liberal arts courses since most freshmen are required to take each year. High number of students

should not be the rationale for offering a course in the online mode.

Several previous researches (Rovai, 2002; Richardson & Swan, 2003; Shin, 2003) identified that perceived psychological distance can predict perceived learning achievement. Therefore, the result of this study supports the former research results. In addition, all the three subscales for the psychological distance are significantly related to the perceived learning achievement. While Shin (2003) reported that the transactional presence between students and professors cannot predict the intention to continue online learning, this study shows that the perceived relationship between students and professors impacts on students' intention to select online courses in the future. Students who feel distance with the online professors show a significantly lower degree of perceived learning and tend not to take online courses any more. Smith (1996) found that many students would not select distance education because they felt that it could not provide learning they desired in a traditional course. The result of this study supports his finding that the perceived degree of learning is positively related to their intention for selecting online courses. The primary reason for selecting online courses for campus-based university students is efficiency in scheduling, and no obligation to attend a class on time. But, according to the result of the interview data analysis, they unanimously suggest that the college should limit the maximum credits from online courses in a semester to one or two courses. Some of them reported that they observed their friends in other universities who enroll all the courses in online, who could not regulate their own schedule, learning, resulting in drop-out in the semester.

Three scales measuring social presence of online professors (mutual awareness, connectedness, and availability) turned out to be significantly related with students' perceived learning achievement. Relatively, mutual awareness between professors and student turns out to be a slightly weaker relation to perceived achievement than connectedness. The interview data support this quantitative data. Most interviewees reported that they do not expect online professors to know them well. They regard

low interactivity as what online courses are supposed to be and take it for granted. However, students with higher perception on their learning still showed higher extent of feeling of connectedness as well as availability of their professors than those with lower learning outcomes. In this vein, online instructors need to put relatively more weight on the instructional strategies to increase the extent of perceived connectedness and availability than mutual awareness.

Students do not expect interaction to occur actively in online courses and even student-student interaction. They still seem to stay in the teacher-centered education paradigm. In learner-centered education paradigm, student-student interaction has been emphasized in that it fosters meaningful learning. However, no participants mention that student-student interaction should be facilitated and supported with adequate instructional design and strategies. Collaborative learning, learning communities, and creation of sense of learning community are the issues that are neither considered as critical in practice nor imagined as it can be realized in online courses by any interviewees. An equivalent learning experience of online courses requires more planning and effort from faculty and more responsibilities of learning, and self-regulating efforts on the student side. Regardless of instructional designs, and outcomes of online courses, some students will register online courses again for being exempted from attendance duties.

In conclusion, it is recommended that the university administrators analyze the student need for online courses very cautiously. In addition, if the online courses do not continue to address equivalent or better quality than traditional courses, the need for online courses will be shortly dropped off in campus-based universities regardless of students' current need.

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