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The Effects of Teaching Presence, Interaction of Professors and Academic Emotions on Learning Satisfaction in Nursing Students' Online Classes

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Abstract

This study is intended to examine the effects of teaching presence, interaction of professors and academic emotions on learning satisfaction in nursing students' online classes.The subject of the study is a nursing student who works at W City University in Gangwon Province. We collected data from March to April 2020, and a total of 360 subjects.The study found that the teaching presence and the interaction of professor had statistically significant static effects on academic emotion. This means that the greater the teaching presence and the greater the interaction of professor, the higher the academic emotions.The teaching presence and the interaction of professors had statistically significant static effects on learning satisfaction. This means that the greater the teaching presence and the greater the interaction of professor, the higher the learning satisfaction. The academic emotion had a statistically significant impact on learning satisfaction.This means that the greater the academic emotion, the higher the learning satisfaction. This study had limitations in measuring academic achievement levels by self-reporting method. Since it differs from the level of cognitive achievement of learners and actual grades, follow-up studies need to study the results of learning emotions using actual scores on academic performance, and focus on exploring relationships that can affect learning satisfaction by variables such as learning access, class quality, and team activities that can occur in an online class environment.

Keywords: Teaching presence; Interaction of professor; Academic emotion; Learning satisfaction; Online class

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INTRODUCTION

Today, online education is becoming more and more interesting all over the world. Considering the qualitative aspects of sustained growth and learning, it is sufficient as a requirement in the

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field of higher education. In order to be used in deeper areas of higher education for adult learners, online classes need to be studied from an educational perspective (Ke F., 2010). Furthermore, online classes are drawing keen attention to the emotional aspect of learning because the academic emotions that learners experience in the class affect learning. There is a prior study reported that academic feelings arising from online lectures may include additional factors that contribute to the online environment (Chei M J., 2016). Also, in predicting the learning approach, the perception of learner satisfaction, the presence as a professor was an important factor (Kwon S Y., 2011). From this point of view, online learning has focused on a factor called teaching sense, which emphasizes the role of professors. Professors also provide learners with the direction of lectures as a learning facilitator (Johnson G B., 2013). In addition, professors not only improve learners' participation and understanding by providing immediate and individual feedback, but also have a positive impact on learners who have difficulty performing their tasks (Kim E H., 2019). Thus, the role of a professor in online classes was judged to be a meaningful attempt to empirically analyze the relationship between learner's learning sentiment and lecture satisfaction.

This study is intended to find out how the teaching presence, the interaction of professors and the academic emotions on learning satisfaction for nursing students in online classes. Based on this study, it will be possible to get implications for the professor's role in inducing in-depth and high-dimensional learning in the online environment for the learning satisfaction, which is a performance variable of online learning. so, it sets following hypothesis.

[Hypothesis 1] Teaching presence and interaction of professor of study subjects will give positive effects on academic emotions.

[Hypothesis 2] Teaching presence and interaction of professor of study subjects will give positive effects on learning satisfaction.

[Hypothesis 3] Academic emotions of study subjects will give positive effects on learning satisfaction.

MATERALS AND METHODS

Research design and model

The present study is narrative research to identify the association among teaching presence, interaction of professor, academic emotions and learning satisfaction in online classes. We set a study model as shown in Fig. 1based on this premise.

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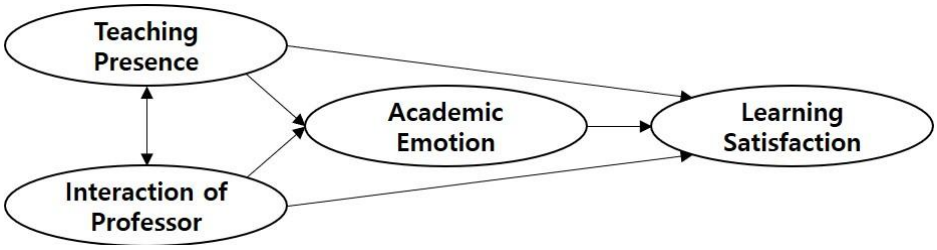

Figure 1: Research Model

Subject and collecting method

The subject of the study is a nursing student who works at W City University in Gangwon Province. We collected data from March to April, 2020. We needed 210 subjects to determine the number of samples by using G*power 3.1 program needed for regression analysis shown as effect size=.15, level of significanceα=.05, and power=.095. Questionnaires were administered to 360 subjects and eventually analyzed data from 373 subjects except for seven non-responded or ineligible questionnaires among collected papers.

Research Tools

The teaching presence was developed by Shea P. *et al*(2010) and used by Kim S O (2018). The research tools consist of a total of 11 questions on the Likert 5-point scale, and the higher the score, the higher the recognition level of the teaching presence. Interaction of professor used a measuring tool that Kim E H (2019) selected the questions and supplemented and reconstructed the lower factors with learning guidance and feedback. The measuring tool consists of a total of 9 questions on the Likert 5-point scale, and the higher the score, the higher the interaction of professor. For the academic emotions, Cha M J (2018) selected the questions using correlation and exploratory factor analysis in the achievement emotion questionnaire (AEQ) developed by Pekrun R *et al* (2005), and then selected the emotional measurement questions in class-related situations. The research tool converted negative emotional factors into reverse questions with a total of 23 questions on the Likert 5-point scale, and the higher the score, the higher the academic emotion. Learning satisfaction was based on the research questions used in the studies of Astin A W (1993) and Park H K *et al* (2018), and a total of 9 research tools reconstructed by Kim E H (2019) by modifying and supplementing the cognitive and emotional factors that are lower factors. The higher the score on the Likert 5-point scale, the higher the learning satisfaction. In this study, the teaching presence is Cronbach's α=.913. The interaction of professor is Cronbach's α=.893. The academic emotion is Cronbach's α=.912. The learning satisfaction is Cronbach's α=.875.

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Analysis Method

For data analysis, we used SPSS v.23 program. ANOVA was employed to analyze the mean difference among demographic features, teaching presence, interaction of professor, academic emotion and learning satisfaction of study subjects. Pearson's correlation coefficient was adopted to see the association among variables of study subjects according to demographic features. We employed multiple regression and analyzed outcomes to identify the effects of their teaching presence, interaction of professor and academic emotions on learning satisfaction.

RESULTS

Descriptive Statistics and Mean Difference Analysis of measured variables

As shown in Table 1, In order to verify the multivariate normal distribution of measured variables, averages, standard deviations, skewness and kurtosis were examined. The results show that the absolute value of skewness was less than 3 and that of kurtosis was less than 10, so the multivariate normal distribution was satisfied. The scores of each variable were generally higher for female students than for male students. All variables were statistically significant at a significant level of .05.

Table 1: Descriptive Statistics and Mean Difference Analysis of measured variables(n=360)

Variables	M±SD	Skewness	Kurtosis	Male (n=46)	Female (n=314)	*t*
				M±SD		
Teaching Presence	3.78±.81	-1.156	.136	3.54±.93	3.81±.79	-2.12**
Interaction of Professor	3.74±.82	-1.226	.790	3.60±.96	3.76±.80	-1.24*
Academic Emotion	3.64±.64	-1.071	.572	3.42±.71	3.67±.62	-2.54*
Learning Satisfaction	3.65±.77	-.541	-.332	3.31±.85	3.70±.74	-3.28*

*p<.05, **p<.01

Correlations Matrix for Measured Variables

This study measured the correlation matrix for measured variables, and the findings are shown in Table 2. All variables have significant correlations with each other with the significant level = .05. Teaching Presence has positive correlations with interaction of professor (r=.723), academic emotion (r=.606), learning satisfaction (r=.715), and interaction of professor has positive correlations with academic emotion (r=.481), learning satisfaction (r=.578), and academic emotion has a positive correlation with learning satisfaction (r=.684).

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Table 2: Correlation Matrix for Measured Variables

	T. P	I. P	A.E	L.S
Teaching Presence	1			
Interaction of Professor	.723***	1		
Academic Emotion	.606***	.481***	1	
Learning Satisfaction	.715***	.578***	.684***	1

****p*<.001

Hypothesis Verification Result

First hypothesis

'Teaching presence and interaction of professor of study subjects will give positive effects on academic emotions.'

As shown in Table 3,the influence over academic emotion variables were statistically significant (F=105.04, p<.001). Multicollinearity did not appear given the tolerance limit of variables turned out more than 0.1. A correlation coefficient of independent variable and dependent variable was identified as .609 and 37.0% of total variations on academic emotions is explained by variables. Durbin-Watson is 1.741 as it nears to 2, which is a standard value. Therefore, it is assumed that there is no correlation among residuals. This means that the greater the teaching presence(p<.001) and the greater the interaction of professor(p<.05), the higher the academic emotions. The first hypothesis is supported.

Table 3:The effect of Teaching Presence and Interaction of Professor on Academic Emotions of research subjects (N=360)

Variables	B	β	t	TOL	VIF
Teaching Presence	.426	.048	8.89***	.477	2.096
Interaction of Professor	.069	.047	2.42*	.477	2.096
R^2			.370		
Adj. R^2			.367		
F			105.04		
p			.000***		
Durbin-Watson			1.741		

*p<.05, **p<.01, ***p<.001

Second hypothesis

'Teaching presence and interaction of professor of study subjects will give positive effects on learning satisfaction.'

As shown in Table 4,multiple regression analysis and multicollinearity diagnostics were conducted to test effects of their teaching presence and interaction on the learning satisfaction.

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Multicollinearity did not appear given the tolerance limit of variables turned out more than 0.1. As Durbin-Watson is 1.619 and it is considered that there is no correlation among residual. Thus, it is appropriate to the regression model.After determining teaching presence and interaction of professor as an independent variable, adding the learning satisfaction as a dependent variable was identified as .721. The independent variable explains the independent variable as 52.0%, which was statistically significant (F=193.06, p<.001). This means that the greater the teaching presence and the greater the interaction of professor, the higher the learning satisfaction. Therefore, the second hypothesis is supported.

Table 4: The Effect ofteaching presence and interaction of professor on Learning Satisfaction of Research Subjects (N=360)

Variables	B	β	t	TOL	VIF
Teaching Presence	.589	.050	11.74***	.477	2.096
Interaction of Professor	.118	.049	2.39*	.477	2.096
R^2			.520		
Adj. R^2			.517		
F			193.06		
p			.000***		
Durbin-Watson			1.619		

*p<.05, **p<.01, ***p<.001

Third hypothesis

'Academic emotions of study subjects will affect learning satisfaction.'

As shown in Table 5, Multiple regression analysis and multicollinearity diagnostics were conducted to test effects of their academic emotions on the learning satisfaction. Multicollinearity did not appear given the tolerance limit of variables turned out more than 0.1. As Durbin-Watson is 1.908 and it is considered that there is no correlation among residuals. Thus, it is appropriate to the regression model. After determining academic emotions as an independent variable, adding the learning satisfaction as a dependent variable and analyzing them, the correlation coefficient of independent variable and dependent variable was identified as .700. The independent variable explains the independent variable as 49.0%, which was statistically significant (F=171.47, p<.001).This means that the greater the academic emotion, the higher the learning satisfaction. Therefore,the third hypothesis is supported.

Table 5: The Effect of Academic Emotions on Learning Satisfaction of Research Subjects (N=360)

Variables	B	β	t	TOL	VIF

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Positive Emotion	.483	.044	10.95***	.813	1.230
Negative Emotion	.349	.040	8.73***	.813	1.230
R^2			.490		
Adj. R^2			.487		
F			171.47		
p			.000***		
Durbin-Watson			1.908		

*p<.05,**p<.01,***p<.001

CONCLUSION AND PROPOSAL

The study is aimed at finding out the effect of nursing college students on their teaching presence, interaction of professor and academic emotions on their learning satisfaction in online classes. Results of Regression Analysis

First, the teaching presence and the interaction of professor had statistically significant static effects on academic emotion (p<.001). The higher the level of teaching presence and interaction of professor, the higher the level of academic emotion of the subjects.

Second, the teaching presence and the interaction of professors had statistically significant static effects on learning satisfaction (p<.001). The higher the level of teaching presence and interaction of professor, the higher the level of learning satisfaction of the subjects.

Third, the academic emotion had a statistically significant impact on learning satisfaction (p<.001). The higher the level of academic emotion, the higher the level of learning satisfaction.

Based on the results of this study, I would like to make the following suggestions.

First, this study had limitations in measuring the level of academic achievement by self-reporting method. Since it differs from the level of cognitive achievement of learners and actual grades, subsequent studies need to study the results of academic emotions using actual scores on academic performance.

Second, it is necessary to intensively explore relationships that can affect learning satisfaction by using the factors such as learning access, quality of classes, and team activities, which can change in the online class environment.

Third, considering improving the quality of higher education through online classes, follow-up research is needed to expand the interaction between professors and learners in depth in the end and become common.

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