

## A Study of the factors affecting the satisfaction of online classes

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### **Abstract**

*With the recent expansion of online lectures, studies on their effectiveness and their influencing factors have increased. This study examines the factors affecting the satisfaction of online classes, considering the utilization and importance of online lectures, which have greatly increased in recent years. Based on the review of previous studies, this study identified learning presence, self-efficacy, and learning immersion as factors affecting the satisfaction of online classes, and suggested hypotheses that explain the relationship between these factors, and empirically reviewed the hypotheses. As a result of the study, it was found that learning presence and self-efficacy had a positive effect on learning immersion, and learning immersion had a positive effect on learning satisfaction. Based on the research results, some practical implications for improving the satisfaction of online classes were suggested.*

**Keywords:** *online learning, learning presence, learning immersion, self-efficacy, learning satisfaction*

### **1. Introduction**

Since the Covid-19, online classes have been greatly popular in most academic entities including universities and higher education institutes. Many universities have introduced various types of online teaching methods that can replace face to face classes. Education since Covid-19 has changed greatly, mainly online. Online classes have expanded in elementary and secondary education, and not only online classes but also various classes, such as hybrid classes that combine online and offline classes, have increased significantly in universities. In corporate education, the proportion of online lectures has increased significantly, and non-face-to-face training has expanded.

In this context, improving the quality of online classes has become an urgent issue. There have been growing claims that the social distancing situation would continue and that the quality of online lectures could decline. Therefore, further research on ways to improve the learning satisfaction of online classes became very crucial to higher education.

In the case of online classes, the autonomy and convenience that learners can freely choose the location and participate in lectures outside the limited lecture room, the connectivity that enables sharing of knowledge and

information with professors and colleagues online, There are advantages such as accessibility that allows you to listen to the class while looking at the necessary materials immediately, and it is sometimes evaluated as an effective lecture that can complement the limitations of face to face classes [1]. On the other hand, however, it has been pointed out that the concentration and immersion of learners are hampered by the absence of meeting in person between professors and colleagues[2].

This study presents learning experience, learning immersion, and self-efficacy as factors that affect online classes, and empirically suggests the impact of these factors on learning satisfaction. This study tried to suggest some implication for online learning through the results.

## **2. THEORY**

In the previous studies, they have said that learners perceive the cognitive reality of their own learning context and content, and the emotional reality of their own emotional states and interactions with peers or teachers[3]. Therefore, learning becomes immersive through a sense of social reality. In addition, according to the importance of learning reality recognized by learners themselves in online environments such as online classes and lectures, research was conducted to investigate the relationship with various variables related to learning experience [1][2][3].

A study showed that learning experience and learning immersion have a significant impact on learning satisfaction[1].

Learning presence means that the learner himself/herself recognizes that he or she is in a learning situation. Learning presence refers to promoting the learner's learning process so that the learner can obtain a meaningful learning effect. In online learning, learning presence was confirmed to have a significant impact on learning outcomes[4]. Another study also showed that learning presence has a significant impact on learning outcomes such as learning satisfaction and academic achievement and showed the fact that feedback from instructor has a positive impact on learner's participation to discussion[5].

As interest in online learning has increased, the importance of learner self-efficacy in an online environment was mentioned in the previous studies[2][5]. Learners' self-efficacy needs to be newly considered in a new online learning environment because learners' self-efficacy is sensitively affected by the situational characteristics the learners are in[6]. Above all, it is necessary to pay attention to self-regulation efficacy in that learners have to lead and manage their own learning in an online environment. Also it is mentioned that learners with high self-regulation efficacy can achieve higher learning outcomes in Internet-based classes[7].

Immersion in learning is a psychological state in which students are fully immersed in their learning process and perform optimal functions. Learning immersion is observed at the moment when learners participate in learning activities to the fullest and experience pleasure and creativity. When in the state of learning immersion, all of the learner's consciousness and each organ of the body focuses on one learning goal, and it can be said that they experience pleasure and self-satisfaction through immersion activities[3].

Learning satisfaction can be defined as the degree of value, satisfaction, and effect that learners feel about online learning[4]. Learning satisfaction is frequently mentioned as an indicator for measuring the learning effect of online learning, and is a variable that significantly affects the academic achievement perceived by learners[4]. Satisfaction of online learning can be assessed by the gap between learner's expectation and evaluation of the quality of education[1], and learning satisfaction is a state of satisfaction or dissatisfaction formed as experiences with e-learning courses accumulate. It was analyzed through overall satisfaction, satisfaction with the contents of the lecture, and satisfaction with the course taken[8].

### 3. EXPERIMENTS

This study established hypotheses on the effects of learning presence, learning immersion, and self-efficacy on learning satisfaction in online learning and empirically examined them as follows.

Hypothesis 1: Learning presence will have a positive effect on self-efficacy.

Hypothesis 2: Self-efficacy will have a positive effect on learning immersion.

Hypothesis 3: Learning immersion will have a positive effect on learning satisfaction.

First, empirical analysis was conducted to verify the research model and related hypotheses on the factors affecting learning satisfaction.

The empirical analysis was conducted on the survey based on the structured questionnaire designed based on the previous studies. The collected data were analyzed by quantitative analysis using statistical program to verify the research hypothesis.

A survey was conducted on 420 students who had experience taking online classes, and 414 copies were used for analysis, excluding insincere responses. Factors affecting learning satisfaction are learning presence, learning immersion, and self-efficacy. All measurement items were measured on a 5-point Likert scale.

The data collected in the study were analyzed using the SPSS 21.0 statistical program, and to verify the questionnaire as a measurement tool, exploratory factor analysis for validity, Cronbach's  $\alpha$  coefficient confirmation for reliability were conducted.

### 4. RESULTS AND DISCUSSION

To verify hypothesis, we have tried factor analysis for all the variables which put into the empirical model in the study. Factor analysis on independent and dependent variables affecting learning satisfaction was performed, and other analyzes were conducted to confirm the validity and reliability of the construct in the study. For the reliability analysis of the main variables used in this study, Cronbach's  $\alpha$  (Cronbach alpha) coefficient was checked. All variables used in the study were analyzed to have high reliability through [Table 1]. Table 1 shows the results of reliability analysis.

**Table 1. Factor Analysis for variables**

Construct	Variable	Factor Loading			Communality	Cronbach's $\alpha$
Learning Presence	LP1	.807	.117	.178	.697	0.938
	LP2	.787	.217	.301	.757	
	LP3	.774	.251	.244	.722	
	LP4	.724	.236	.120	.594	
Learning Immersion	LI1	.156	.806	.110	.687	0.943
	LI2	.324	.777	.249	.771	
	LI3	.273	.760	.262	.721	
	LI4	.134	.727	.371	.684	
Self Efficacy	SE1	.232	.247	.852	.841	0.801
	SE2	.272	.204	.841	.823	
	SE3	.232	.352	.714	.688	

Regression analysis was conducted to find out whether learning presence and self-efficacy affect learning immersion and learning satisfaction. As a result of the regression coefficient test,  $t=6.939$ ,  $p=0.000$ , it was found that learning presence had a statistically significant effect on learning immersion. The standardized coefficient  $\beta$  value of learning presence was 0.322 ( $p<0.001$ ), indicating that learning presence had a significant effect on learning immersion.

As a result of the regression coefficient test of self-efficacy,  $t=2.593$ ,  $p<0.05$ , it was found that self-efficacy had a statistically significant effect on learning immersion. The standardized coefficient  $\beta$  value of self-efficacy was 0.158 ( $p<0.05$ ), indicating that self-efficacy had a significant effect on learning immersion.

Hypotheses 1 and 2 were accepted that learning presence and self-efficacy would have a positive (+) effect on learning immersion. Table 2 shows the correlation of each constructs.

**Table 2. Correlation Coefficient**

Construct	Learning presence	Learning immersion	Self-efficacy	Learning Satisfaction
Learning presence	<b>.791</b>			
Learning immersion	.104	<b>.773</b>		
Self-efficacy	.143**	.660**	<b>.746</b>	
Learning Satisfaction	-.045	.451**	.598**	<b>.866</b>

\*\*correlation is significant at the 0.01 level

As a result of regression analysis on the effect of learning immersion on learning satisfaction,  $F=37.057$  ( $p<0.001$ ) was found, indicating that this regression model was appropriate, and the standardized coefficient  $\beta$  value of learning immersion was 0.553 ( $p<0.001$ ). It was found that learning immersion has a significant effect on learning satisfaction. The  $R^2$  value for the regression equation was 0.353, and it was confirmed that learning immersion showed explanatory power at the 35.3% level of learning satisfaction. Therefore, the hypothesis that learning immersion will have a positive (+) effect on learning satisfaction was adopted. Table 3 shows the results of hypotheses test.

**Table 3. Results**

Hypothesis	$\beta$	t value	P	Result
Learning presence-> Self-efficacy	.322	6.939	.000	Accept
Self-efficacy -> Learning immersion	.158	2.593	.010	Accept
Learning immersion -> Learning Satisfaction	.553	13.443	.000	Accept

This study established the relationship between learning presence and self-efficacy, learning immersion and learning satisfaction, and empirically verified it. As a result of the study, it was found that learning presence and self-efficacy had a positive effect on learning immersion, and learning immersion had a positive effect on learning satisfaction.

The implication of the research results is that, first of all, the sense of learning presence perceived by learners has a positive effect on learning immersion, and through this, learning satisfaction can be increased. If various interactive methods and tools that can increase the sense of realism in learning are further developed and expanded, it will help to increase learning immersion and learning satisfaction. Prior research also claims the importance of interaction and various activities that promote learning for effective online classes[9]. For effective online classes, active interaction is very crucial, and the role of the instructor is important for this, and the environment for learning immersion is also important[9].

In addition, it was confirmed that self-efficacy has a positive effect on learning immersion, which also has implications for online learning. A various self-directed teaching methods and lively feedback will help increase self-efficacy. It would be pleased that this study contribute to improve the quality of online classes, which are gradually expanding, and increase learning satisfaction.

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