The Effects of Motivation and Self-regulation on Satisfaction in the Community of Inquiry

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Abstract: This study proposes a hypothetical model that takes self-regulation and learning motivation as initial variables, social presence, teaching presence, cognitive presence as intervening variables, and learning satisfaction as the outcome variable, and validates the hypothetical model by path analysis. The results implied that self-regulation ability and intrinsic motivation have a direct and indirect significant impact on learning satisfaction.

1. Introduction

Online learning motivation is a key factor that affects students' learning performance. COI model has become an effective theoretical framework for online learning, open learning, and a blended teaching environment [1]. It is increasingly discovered that the three factors (social presence, cognitive presence, and teaching presence) in the Community of Inquiry theoretical model can only explain part of the problems in teaching [2]. To expand the components of the framework, Xie et al. Proposed to incorporate the "learning presence" into the COI theory model to explain more teaching phenomena [3]. Self-regulation is also an important category of learning presence, which plays an important role in learners' perception of cognitive presence. This study focuses on the relationship between learners' intrinsic motivation, self-regulation, and learning satisfaction in the COI learning environment, to provide a new perspective for improving the learning effect of distance learners and has a certain enlightening effect on online learning teaching practice.

2. Literature Review

2.1 Theoretical framework

2.1.1 Community of inquiry

The community of Inquiry (COI) theoretical model provides a useful perspective for creating a better online collaborative learning environment and improving the effectiveness of online learning through social, teaching, and cognitive presence. Social presence is defined as the learner's ability to project himself socially and emotionally in the COI. Social presence is manifested in the form of learners' emotional expression, open communication, and team cohesion [4]. Cognitive presence refers to the process in which learners use reflective methods and critical discourse to learn and effectively apply knowledge. It involves the four stages of event triggering, exploration, integration, and resolution [5]. Teaching presence refers to the organization and design of teachers in the process of inquiry and social interaction with learners, to give corresponding help and guidance, which is the basis for creating an inquiry community [6].

2.1.2 Self-regulation

Self-regulation refers to the abilities of learners to control and regulate their learning and behavior in the process of learning. The self-regulation ability of learners in online learning is an important factor in the success of learners in the online learning environment [7]. Jiang (2019) proposed for the first time a hypothetical model of the relationship between learner metacognition and the exploration

of the community model, exploring the relationship between metacognition and the COI from the two dimensions of self-regulation and co-regulation. The conclusion shows that learners' self-regulation ability has a negative predictive effect on social presence. Then Cho et al. (2017) focused on the impact of self-regulation on the COI. They concluded that learners with high self-regulation skills may perceive a higher sense of social presence, cognitive presence, and teaching presence.

2.1.3 Motivation

Motivation is defined as the psychological tendency or intrinsic drive that stimulates and sustains the action of an organism and makes the action led to a goal [8]. According to the different reasons, motivation is divided into intrinsic motivation and external motivation. In the study on the correlation between motivation and its three elements in the inquiry community, studies found that there was no significant relationship between motivation and online learners' perceived scores in the three kinds of presences [9].

2.2 Research questions and hypotheses

According to the background of the study, two research questions are proposed. The hypotheses are proposed based on the above theoretical review, and the hypothetical model is established, as shown in Figure 1. Research question 1: In online learning, what is the degree of perception of intrinsic motivation, self-regulation, social presence, cognitive presence, teaching presence, and satisfaction of middle school students? Research question 2: Do students' self-regulation and intrinsic motivation affect their satisfaction? And how do self-regulation and intrinsic motivation affect their satisfaction?

3. Participants and tools

Participants in this study were 276 students from 3 rural middle schools. Data collection adopts the self-reporting method, and variables are measured using a five-point Likert scale. The Intrinsic motivation, self-regulation, and satisfaction questionnaires are derived from previous studies [10] [11] [12]. COI questionnaires were used to assess students' online learning experience and to compare the initial levels of students from different backgrounds [13]. This study used the Cronbach coefficient to assess the reliability of the questionnaires.

4. Results

4.1 Descriptive statistics and correlation analysis

Table 1 shows the students' perception level of learning satisfaction and its influencing factors. The analysis results show that students have the highest level of perception of teaching presence (Mean=4.33), indicating that students agree with teaching support such as teaching design in the classroom, but their perception of self-regulation ability is relatively weak (Mean=3.50), showing that learners do not have strong self-monitoring and adjustment capabilities. And we can see that there is a statistically significant correlation between these variables.

4.2 Path analysis

This study uses AMOS to conduct the path analysis. The fitting indices of the model are as follows: $x^2 = 4.732$, $df = 2$, $\chi^2/df = 6.034$; CFI=0.997; TLI=0.979; RMSEA=0.072; SRMR=0.011. We can see the fit indices are quite well, and the model is established.

Through Figure 2, we find that most of the hypotheses are established and some new paths are generated. Consistent with the hypothesis, students' self-regulation has a strong indirect impact on students' learning satisfaction through social presence, cognitive presence, and teaching presence, and then through the mediation effect of teaching presence on the learning satisfaction. In addition, students' intrinsic motivation exerts an indirect influence on learners' learning satisfaction through the intermediary effect of teaching presence on learning satisfaction. The new paths show that self-

regulation ability (β=0.439, p<0.001) has a direct and positive predictive effect on learning satisfaction. These results show that the stronger learner's self-regulation ability, the stronger the perception of COI, and the higher the learning satisfaction.

5. Discussion and conclusions

5.1 Discussion

Learners with a high level of intrinsic motivation can more actively understand and implement teachers' teaching curriculum arrangements and learning tasks, and more actively and efficiently communicate with teachers in various interactions during the learning process; secondly, learners with high levels of intrinsic motivation, and are more willing to communicate and discuss online teaching platforms and course discussion communities; finally, learners with high levels of intrinsic motivation actively participate in the process of knowledge construction and inquiry integration, and their cognitive level and higher-order thinking ability are continuously enhanced. Students with strong online self-regulation ability can better perceive the teaching, social, and cognitive presence, and obtain a better online learning experience. Students with stronger self-regulation ability will have higher learning satisfaction. Learners with strong self-regulation ability are more likely to set and achieve learning goals, and the achievement of learning goals can greatly improve the learner's learning satisfaction. This study also has some limitations. It explores the three elements of the community as mediating variables, and this study does not conduct further mediation effects test on them; secondly, this study only explores the influence of motivation and self-regulation ability on teaching presence, social presence, and cognition. The above problems need to be continuously improved and perfected in future research, so as to further enrich the COI model and related theories.

5.2 Conclusion

This study shows that the higher the learner’s intrinsic motivation and self-regulation ability, the higher the learner’s perception of teaching, social and cognitive presence; And teaching presence has a significant effect on students’ learning satisfaction. students’ perception of teaching presence is stronger, the greater the student’s learning satisfaction; In addition, the learner’s self-regulation has a significant impact on the learning satisfaction. Teaching practitioners should strengthen the cooperation and communication and create a relaxed and collaborative learning atmosphere.

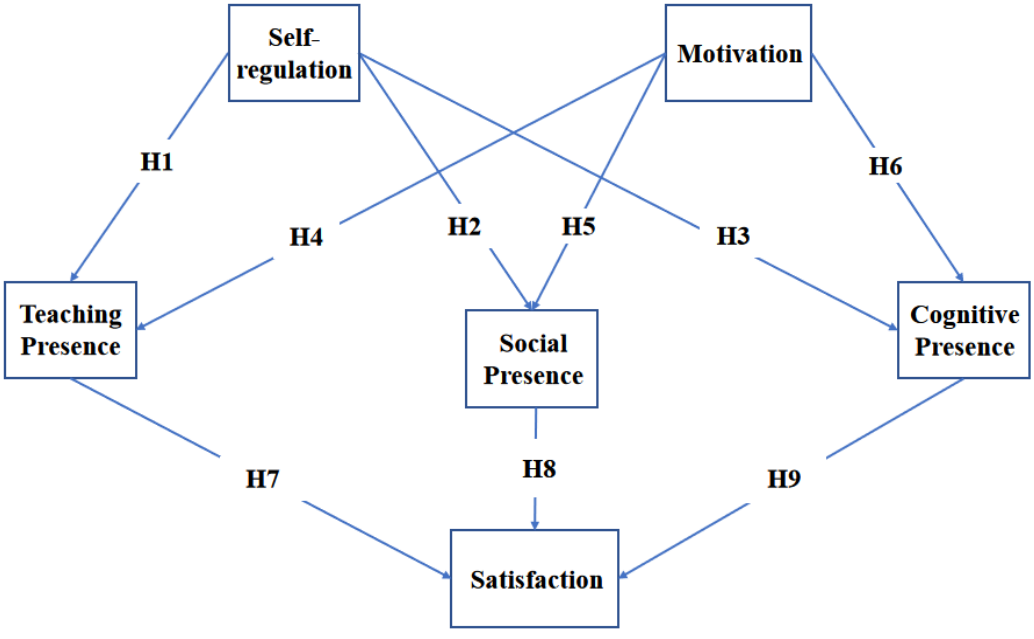

Figure 1. Path hypothesis model

Table 1. Descriptive statistics of variables and correlation analysis results

	Mean	**SD**	*OSR*	*MOT*	*TP*	*SP*	*CP*	*SAT*
OSR	3.50	.63	1					
MOT	3.60	.56	.60**	1				
TP	4.33	.71	.41**	.42**	1			
SP	3.94	.57	.50**	.50**	.75**	1		
CP	3.60	.70	.72**	.74**	.52**	.66**	1	
SAT	3.83	.80	.59**	.46**	.60**	.57**	.57**	1

1. *OSR:* Self-regulation; *MOT:* Motivation; *TP:* Teaching Presence; *SP:* Social Presence; *CP:* Cognitive Presence; *SAT:* Satisfaction;

2. **P<0.01, significant correlation.

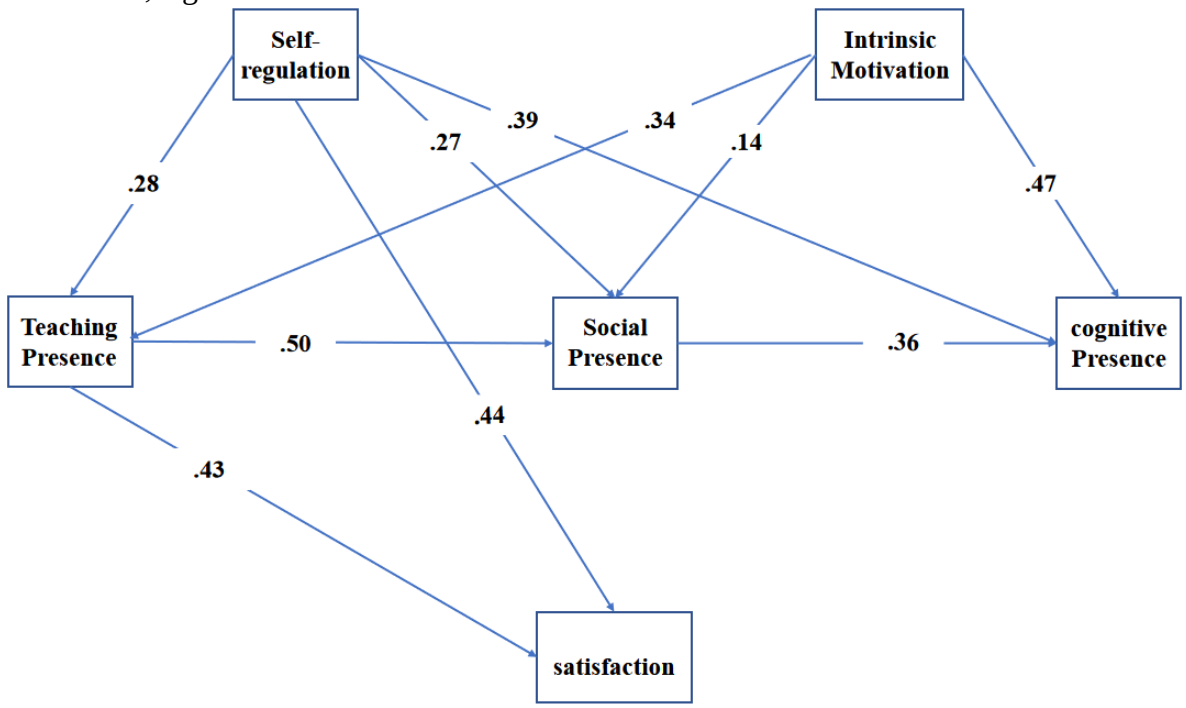

Figure 2. Final model

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