

# Reasons that Affect the Interaction Among Students in Virtual Learning Environment

Tiezh Guo<sup>1</sup>, Yulong Gong<sup>1</sup>, Shengpeng Shi<sup>1</sup>, Zhiqiang Luan<sup>1\*</sup>

<sup>1</sup> International College Beijing, China Agricultural University, Beijing, 100083, P.R. China

\*Corresponding author's e-mail: luan@cau.edu.cn

**Abstract.** With the development of the technology, virtual learning environments are seeing wider application in college education. The research goal of this paper is mainly to explore the influence of the interaction between students and students in the virtual learning environment, and to improve students' academic performance. The paper takes the online course of Canvas platform set by international college of China Agricultural University as an example, summarizes the interactive function of Canvas platform from the perspective of students and teachers, and conducts a questionnaire survey on students. Through analysis, the authors find that both teachers and students believe that the interaction in the virtual learning environment can improve students' academic performance. And the gender and the major are key factors.

## 1. Introduction

Since the beginning of the 21st century, the continuous development of science and technology has enabled information to penetrate into many aspects of social life. It affects the way people live and think. As a product of the development process of human society, education is also seeking the support of information technology to explore new breakthroughs. The advancement of information technology has led to major changes in traditional educational concepts, educational models and even the education system. Education has not met the classrooms that are subject to the traditional concept of traditional concepts, thus freeing the limitations of time and space, providing a wealth of teaching and learning resources, namely the network learning management system, is gradually receiving attention. In the e-learning management system, learners can receive guidance from teachers at any time, complete, submit assignments, and communicate with teachers and classmates.

Shale and Garrison believe that the most essential form of education is the interaction between teachers, learners and learning content [1][2]. Meyer also pointed out that most of the high-quality learning is the interaction of teachers, students and learning content [3]. The interaction between students is inextricably linked to the individual learner's satisfaction with online learning and whether he has a positive learning attitude. Learning management system, online chat tools, email, etc. have built a rich and efficient interactive platform for interaction between learners and learners and teachers. However, these only remove obstacles in the physical distance between the teacher and the learner. Many people are concerned about the lack of face-to-face communication between students in the online learning management system and between students and teachers.

According to the author's personal network learning experience and in the online learning management system, the communication between learners is usually limited to questions and answers similar to the forum format, the sending and receiving of emails and the exchange of real-time chat tools,



between learners and learners. Interactions account for only one-fifth of the entire learning activity. More time, the views of learners staying online will not be valued and responded. Usually after the end of an online course, learners are not familiar with the students who study with themselves, and the exchange of ideas is not as impressive as the real-time communication in face-to-face courses. Unlike face-to-face learning, learners have a sense of loneliness in online learning and a low completion rate of learning tasks. The lack of face-to-face communication is the main limiting factor, because learners and students and teachers are physically separated, and communication relies on the aid of network communication tools. This physical separation leads to barriers to communication, and many non-verbal messages, such as eye contact, expression expressions are missing in the online learning environment. These questions also make some problems come into being: What is the nature and status of interaction in the network learning management system? What is the meaning of interaction in the network learning management system? Does frequent interaction help or hinder the interaction between students in online learning? Therefore, it is necessary to explore the interaction between students in the network learning management system.

## **2. Methodology**

### *2.1. Research goal*

To start with, our first goal is to understand how students in the e-learning management system experience interaction and the degree of interaction between students, and what changes and influences interaction has on learning concepts. Secondly, our goal is to create an effective online learning management platform for learners.

### *2.2. Research method*

#### *2.2.1. Literature research*

According to Yoany Beldarrain, the interaction between students and students is at the center of the learning environment in the cognition of distance teaching [4]. Yang Junfeng, Kinshuk, et al. argue that students' collaborative learning is influenced by culture and language [5]. Chinese students are not good at asking questions and expressing their views and they subject to the opinions of teachers and other students. American students are better at expressing their views in this respect. According to Wang, she argues that the communication in the network course has a certain lag, and students cannot get the feedback information in time [6].

#### *2.2.2. Questionnaire method*

We design questionnaires for online learners. The questionnaires are based on the interaction status of the network learning management system, some problems in the interaction of the network learning management system, suggestions for improving the online learning interaction activities, and online learning interaction in the network teaching and learning. The questionnaire survey was conducted by e-mail and other methods to collect students' experiences, opinions and suggestions on student interaction in the online learning management system, and to analyze and process the data.

## **3. Data analysis**

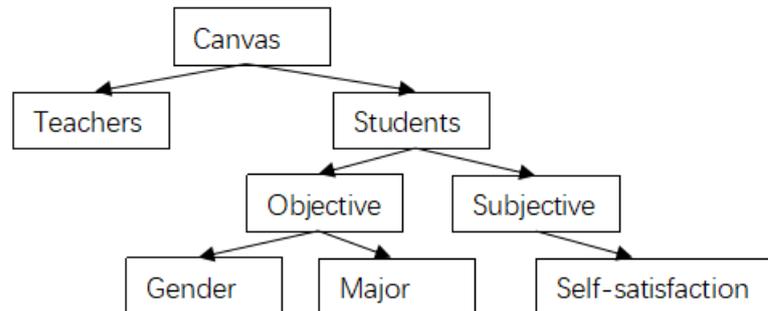


Figure 1. Reasons that affect the interaction in Canvas

Based on our results, a model has been designed (Shown in Figure 1). The users of the Canvas platform which can be promoted as a virtual learning platform can mainly be divided into two groups. One group of the users is the teachers who are also the regulators. The other group is the students who are the supervised.

### 3.1. Professors' supervision & Students' achievement

As showed in Table 1, there is an interaction between the two groups. The teacher's tracking of student interaction will positively affect student achievement. First of all, in the free discussion state, compared with the content of the class, the interest of the students will be attracted by the points of interest outside the concept of the class, and then the points of interest and related points of interest will be awakened to discuss, and then away from the original purpose, resulting in effective time waste. Compared to free discussion, teachers track student seminars to prevent students from discussing topics that are not related to the class, and thus help students focus on the concept of the class. Under the premise of preoccupation, the students will pay more attention to the classroom concept and then discover the problem, and then discuss with other students about a concept to reach a consensus. This process is freer to discuss the topics that the students are discussing, effectively and effectively guarantee the time for effective discussion, and help students to learn more independently during the discussion.

Table 1. Analysis of the connection between professor's supervision and student's grade

		<b>Correlations</b>	
		I think the online interaction improve my grade	My teacher will keep track the interaction between my classmates and provide feedback.
I think the online interaction improve my grade	Pearson Correlation Sig. (2-tailed) N	1  206	.617** .000 206
My teacher will keep track the interaction between my classmates and provide feedback.	Pearson Correlation Sig. (2-tailed) N	.617** .000 206	1  206

\*\* .Correlation is significant at the 0.01 level (2-tailed).

Within the student group, the influencing factors can be divided into two parts which are subjective and objective. The objective factors include gender and major.

### 3.2. Gender & Study style

Boys prefer to participate in online discussions compared to girls (Shown in Table 2). Girls are more embarrassed than boys, and they are relatively uncomfortable in a strange environment. Compared with face-to-face interaction, online interactions are more exposed to strangers. In this environment, girls will consider appropriate words and correct answers, which will affect the efficiency of discussion. Discussions of reduced efficiency will make girls less willing to participate in online communication environments. On the contrary, boys are more open than girls, can have relatively more objections, and will be more willing to participate in online discussions.

Table 2. Analysis of the connection between gender and study style

		<b>Coefficients<sup>a</sup></b>				
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	2.318	.130		17.854	.000
	1.Gender	-.159	.079	-.140	-2.020	.045

a. Dependent Variable: 5.Which study style you prefer?

### 3.3. Major & The influence of online interaction

Furthermore, major is also an influencing factor (Shown in Table 3). Online discussion is more influential to students majoring in communication than in economics. First of all, this may have the impact of the profession itself. The teacher will judge the student's score according to the student's participation in the class. This participation also includes interactions on the learning platform in addition to the interactions in the class. Compared with the economics major, the communication major courses pay more attention to the interaction between students. In addition to classroom performance, interactions on the Canvas platform are also used as a measure of classroom engagement, such as online discussions, answers to other student questions, or evaluations of other students' small assignments. The teacher will score the student based on the quantitative data of the life interaction provided by the canvas platform to influence the student assembly. Compared with the communication major, economics majors tend to study independently, and the relative interaction is relatively light. Therefore, professional choices will have an impact on student achievement.

Table 3. Analysis of the connection between the major and the influence of online interaction

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.762	.140		12.547	.000
	3.Major	.238	.084	.194	2.820	.005

a. Dependent Variable: 10. In your class, will your online interaction with your classmates affect your grade?

In addition to objective factors, we also found that the influencing factors include subjective factors which is the self-satisfaction.

### 3.4. Self-satisfaction & Learning motivation

Answering other people's questions will stimulate your desire to learn (shown in Table 4). First of all, compared with the teacher's compulsory, the process pays more attention to students' self-learning ability. By browsing other people's questions, students will find their own lack of cognition of the concepts they have learned and will urge students to repeat the learning of the concepts they have learned to become proficient, which will eventually lead to an increase in student achievement. Second, answering other people's questions will increase students' confidence and happiness or satisfaction. For students who answer questions, the process will show students a sense of superiority. In order to maintain this sense of superiority, students are more inclined to learn in advance and lead to an increase in academic performance. For students who ask questions, the process will stimulate students' sense of competition and promote healthy competition, so that the students' desire to study will also rise.

Table 4. Analysis of the connection between self-satisfaction and learning motivation

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.127	.196		5.749	.000
	I will answer my classmates' questions and I think it's worthy	.680	.052	.679	13.205	.000

a. Dependent Variable: I think the online interaction will stimulate my learning motivation

## 4. Discussion and Conclusion

According to the analysis of the International College of China Agricultural University, we found that the teacher's tracking of student discussions will affect the students' achievements. At the same time, boys are more likely than girls to participate in online discussions to maximize the value of online virtual learning platforms. Ultimately, answering peer questions during the discussion will motivate your interest in learning. According to our validity analysis, this questionnaire has the promotion significance, that is, the virtual learning environment is better for the students of literature and history (communication) than the management (economics) students.

In order to improve the performance of students in the history of literature, more tasks such as homework, testing discussion, etc. can be uploaded to the online platform and completed by the students. According to our research, this will not only improve students' participation in classroom activities, but also provide corresponding quantitative data for teachers' supervision, thereby helping students improve their grades.

## 5. Further Research

Our questionnaire only studies a part of the user, ie the student. For another part of the user, the teacher,

our research involves very little. However, we speculate that factors affecting teachers can also be divided into subjective factors and objective factors, namely, preferences and gender. Different teachers have different understandings of the functions of the canvas, and then set the course requirements according to their own preferences. At the same time, female teachers are more careful than male teachers, and may be more responsible for viewing the student's discussion, which in turn affects the student's performance.

In addition, we found that the interaction between the teacher and the student is a one-way interaction, that is, from the teacher directly to the student. However, the students did not give feedback to the teacher. Whether this will affect the effective use of the platform also requires follow-up research.

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