Does Teacher and Student-Student Support Influence Students' Engagement in an Online Course?

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ABSTRACT

Past studies have shown that student engagement can be positively predicted by the teacher and student-student support, but it remains unclear whether the teacher and student-student support of online courses are beneficial or not. Currently, many students are required to take online courses because of the COVID-19, the difference in teaching and learning environment has caused many impacts on student's learning. Therefore, it becomes necessary to find out how the student's engagement changes in this new environment. The present study examines whether teacher and student-student support is a positive predictor of student engagement in students' requirement of taking a course online. All data of 208 participants (69 males & 139 females) have been collected through an online questionnaire survey. Consists of our hypothesis, results show that teacher and student-student support is a positive predictor of that. The support can significantly promote student engagement under the background of online study, and Chinese university students' engagement in an online class is relatively high in behaviour, emotional and cognitive dimensions.

Keywords: teacher support, student-student support, student engagement, online course, positive predictor

1. INTRODUCTION

In past decades, student engagement became a term that had been frequently mentioned in education. The idea of student engagement appears when educators design teaching methods that can benefit the process of learning. Researchers believe that students gain enough support from teachers and peers will possibly lead to an ideal learning outcome. However, this idea was somehow limited because they mainly focus on the traditional classroom situation. While in contemporary society, the remote class is another form of learning that should take into account. Therefore, how will the teacher and student-student support influence student engagement during online studying is a new topic to discuss.

1.1. Student Engagement

Kahu and Nelson, Krause and Coates revealed the significance of the relationship between students learning and students' engagement [1, 2]. However, the definition of student engagement is changeable because researchers studied different aspects of engagement [3]. Kahu argued

that the idea of student engagement is simple. It represents the time and effort that one individual spends on education-related activities [4]. On the other hand, Fredricks, Blumenfeld, and Paris believed student engagement is a concept that should be interpreted as a psychological state of students' behavior, emotion and cognition [5]. Based on Skinner and Belmont's research, behavioral engagement shows students' concentration on the process of learning [6]. Reeve and Tseng defined emotional engagement as students' enthusiasm for the learning task [7]. As for cognitive engagement, it reflects the degree of effort students put to truly understand a new idea [8]. Therefore, it is possible to conclude a general definition of student engagement from the research mentioned above. **Student engagement** refers to students' attitude towards education, mainly includes their interest, attention, passion, and effort done, which can be further extended to their degree of motivation in learning [9, 10].

Educators showed grown interests in student engagement while courses in a traditional classroom are conducted through face-to-face teaching. However, Coivd-19 still challenges contemporary society. Most

students are required to take a course online. The learning and teaching environment of studying via remote is entirely different from the traditional classroom, and students need to study at home alone rather than with teachers and classmates at school.

This change led to a negative impact on student engagement [11]. Since the inconvenience and potential risks of making students go to campus, most universities required their students to take the online course due to the global pandemic [12]. However, as Dumford and Miller revealed, current online studying created difficulties, like the learning atmosphere becomes weaker, as usual, the shortage of effective communication and a sense of isolation from their professor [13]. For example, students showed less concentration during the online course because they usually taking a class in a casual environment. The different environment between traditional and online class also made discussion harder. Students do not have enough time to raise questions in class and also lose the opportunity to discuss with other students after the class. In the meantime, it becomes difficult for students to get in contact with their professor, email seems to be the only path to build up this connection, but the efficiency is quite low and takes a long time to respond. Thus, students are more likely to think that they are separated from their teacher and peers and negatively influence the students' engagement in online classes. While considering how to increase students' engagement through online language teaching, it is important for the researcher to focus on the impact of students' learning environment and figure out possible solutions. The change in the learning environment is likely to affect how students produce language, engage in communication, and receive feedback on time.

Therefore, it is important to consider eliminating the negative effects on students' engagement while taking online language courses. Students should make what kind of effort to take the current online learning environment and what kind of solutions teachers should address the class to create a more appropriate environment for students. In general, how to improve student engagement in online class counts a lot, so this research will explore whether student engagement will be affected or not. The previous discussion showed the potential relationship between teacher support, student-student support and student engagement. Therefore, it is important to understand what teacher support and student-student support stands for and what kind of role they play in student engagement.

1.2. Teacher Support and Student-Student Support

Hughes et al. pointed out that support plays an important role in the study atmosphere [14]. According to Fraser et al., study support can be further divided into two types, one from the teacher and the other from peers [15].

Klem and Connell defined **teacher support** in two dimensions, students' sense of importance or their self-determination and the feeling of they are supported by teachers [16]. Hughes et al. concluded that students who experienced teacher-student interaction are likely to show a high level of warmth and low levels of confliction [14]. Therefore, those students will eventually receive a better result in academic achievement. Furrer and Skinner also suggested that student build up a constant constructive interaction with their teachers are more willing to follow classroom norms and teachers' expectation [17]. A caring and warmhearted teacher is effective in increasing students' enthusiasm about the class. In the meantime, Battistich et al. revealed that students would be easier to get satisfied with the school environment and construct a positive academic attitude when they feel support and protection from their teachers [18]. Those ideas indicate that encourage student participation will help them to gain greater learning achievement.

On the other hand, Jia et al. defined **student-student support** as the feeling that individual student perceived among peers (i.e., self-esteem, respecting other students, friendship) [19]. Based on the self-determination theory raised by Deci and Ryan, students who received higher student-student support would get a greater sense of autonomy [20]. Two types of support are crucial to student's engagement not only in a traditional classroom situation but also in online learning. While students are not able to get enough physical interaction with their teacher and peers in remote studying, their engagement may get decreased. Therefore, educators need to find out what method can apply to maintain students' engagement.

1.3. The Relationship Between Support and Student Engagement

The research showed a strong relationship between student engagement and teacher support. Hao et al. pointed out that students have significantly positive academic emotion, e.g., interest, enjoyment, pride and relief whereas their teacher provides enough support [21]. Students usually feel they are companioned with the teacher and thus becoming confident and active in the study. In the meantime, students are more willing to follow the norms of the classroom as a reciprocation that the teacher cares about them [22]. In contrast, students will pay less attention to their teacher's words and show less cooperation behavior during the class when the teacher blame or disrespect them.

On the other hand, student-student support, unlike teacher support that provides both academic and emotional support, focuses more on the emotional aspect. Jia et al. revealed that Chinese students prefer to complete homework in groups that allow them to discuss and obtain a sense of belonging [19]. The emotional support that originates from other students is negatively

associated with depressive symptoms and being effective in rising students' self-esteem [23]. student-student support can also be beneficial in making students more creative, according to the creativity componential theory raised by Amabile, the existence of student-student support makes individuals able to feel a greater level of freedom and motivation. This allows students to engage in activities that they interested in [24].

However, such evidence that showed a relationship between support and engagement is almost based on the traditional classroom condition. Due to the lack of study focus on teacher support and student-student support in online studying, the purpose of the current study is to examine the relationships between teacher support and student-student support and student engagement in students required to take a course online. Because the classical studying condition suggests a positive between support and student engagement. *Therefore, we hypothesized that the lack of teacher and student-student support will have a negative effect on student engagement under the background of online study.*

1.4. The Present Study

In this study, the major purpose is to find out whether there is a relationship between two types of support (e.g., teacher support and student-student support) and student engagement. Based on previous researches on student engagement and support, the hypothesis of this study is that the existence of both teacher support and student-student support is beneficial for the student to maintain a higher level of engagement even under remote study condition.

2. METHOD

2.1. Participants

This study has collected data from 208 (69 male and 139 female) participants who take a course online from universities in China, includes 19 freshmen, 98 sophomores, 59 junior students, 16 senior students and 16 postgraduates, we acquiesce their age are all over 18 years old because the Chinese students usually access to the university over 18 years old. Questionnaires will be made with a series of questions based on students' learning information and delivered through universities' chat groups and forums. Participants are only required to fill out the questionnaire based on their experience. Approval for the study will be obtained from the Institutional Review Board of the participants' university. Before providing the questionnaire to the participants, we will seek their consent to ensure that each participant can complete the questionnaire voluntarily.

2.2. Measures

2.2.1. Teacher and Student-Student Support

To access students' perception of the teacher and student-student support, we use the revised Teacher and Student-Student Support questionnaire from a School Climate Measure Scale [19]. As our study is focused on the field of the online course, little questions (e.g., "I have been afraid that someone will hurt or bother me in school") from the original Teacher and Student-Student Support questionnaire is unsuitable for us, so they were deleted. The revised Teacher and Student-Student Support questionnaire consists of 16 items, such as Teacher support (e.g., "In an online course, I can talk to my teachers about my problems"), Student-Student support (e.g., "In an online course, students have trouble getting along with each other "). Respondents are asked to rate the statements on the frequency with which they have experienced these supports using a 4-point Likert-type scale, ranging from 1 (never) to 4 (always). Some negative options will be reverse coded, and each subscale and item will be used to calculate the mean. Higher scores on the Teacher and Student-Student Support questionnaire indicate greater students' satisfaction with the teacher and student-student support.

2.2.2. Student Engagement

Student engagement was measured through the revised Student Engagement Scale (SES) [25], The SES is a 3-part self-report measure of engagement, mainly includes behaviour (e.g., "In an online course, I attend classes willingly"), emotional (e.g., "In an online course, I think my courses are beneficial for me") and cognitive (e.g., "In an online course, I motivate myself to learn") engagement. Respondents are asked to rate the extent to which they agree or disagree with the specific statement of engagements in their online course, across a 5-point Likert-type scale (e.g., "1 = totally disagree" to "5 = totally agree"). Some negative options will be coded reversely, and each subscale and item will be used to calculate the mean. Higher scores on the SES indicate greater engagement.

2.3. Procedure

All the participants of the questionnaire survey are university students above 18 years old and complete the survey online. In the meantime, Participants will not be made aware of the purpose of the study until after they had completed all measures. Firstly, participants rate their teacher and student-student support using a 4-point Likert-type scale. Later, participants were invited to rate their engagement using a 5-point Likert-type scale. After participants completed this questionnaire survey, they got some money as a reward.

2.4. Data Analysis

This study's primary purpose is to examine whether teacher and student-student support is a positive predictor of student engagement in students required to take a course online. For this study, we have the teacher and student-student support acts as the independent variable, and students' engagement is the dependent variable. The data were analyzed by using SPSS 20.0. Firstly, the descriptive statistic and correlations analysis were conducted. Next, multiple regression analysis would be used to examine the hypothesis that teacher and student-student support can be a positive predictor of student engagement.

3. RESULT

3.1. Descriptive Statistics and Correlation Analyses

The descriptive statistics and correlations analysis of each scale were conducted. Means and standard deviations of Teacher and Student-Student support, student engagement was reported in Table 1. More specifically, teacher and student-student support would be positively related to the three dimensions of student engagement respectively.

Table 1. Descriptive statistics, and correlations between studied variables

Variables	1.	2.	3.	4.	5.	6.
1.Teacher support	-					
2.Student-Student support	0.50**	-				
3.Emotional engagement	0.78**	0.65**	-			
4.Behaviour engagement	0.71**	0.53**	0.91**	-		
5.Cognitive engagement	0.65**	0.46**	0.82**	0.80**	-	
6.Gender	0.05**	0.02**	0.09**	0.12**	0.14**	-
M	2.75	3.21	3.58	3.62	3.33	1.67
SD	0.71	0.55	0.95	0.92	0.98	0.47

$^*P < .05; ^{**}p < .01; ^{***}p < .001$. The same below.

3.2. The Results of Regression Analysis

In Table 2, result show that teacher support significantly and positively predicte the emotional ($\beta = 1.04$, t = 17.72, p＜0.001), behaviour ($\beta = 0.93$, t = 14.61, p < 0.001) and cognitive ($\beta = 0.90$, t = 12.31, p < 0.001) engagement respectively. It means that if student can get a higher level of teacher support, their emotional, behaviour and cognitive engagement can be stronger.

Table 2. Predicting student engagement from teacher support

	Emotional engagement		Behaviour engagement		Cognitive engagement	
	β	t	β	t	β	t
Teacher support	1.04	17.72***	0.93	14.61***	0.90	12.31***
R²	0.60		0.51		0.423	
Adjusted R²	0.60		0.51		0.423	
F	313.95***		213.54***		151.54***	

In Table 3, result show that student-student support significantly and positively predicted the emotional ($\beta = 1.11$, t = 12.14, p < 0.001), behaviour ($\beta = 0.88$, t = 8.94, p < 0.001) and cognitive ($\beta=0.82$, t=7.43, p < 0.001) engagement respectively. It means that if student can get

a higher level of student-student support, their emotional, behaviour and cognitive engagement can be stronger.

Table 3. Predicting student engagement from student-student support

	Emotional engagement		Behaviour engagement		Cognitive engagement	
	β	t	β	t	β	t
Student-Student support	1.11	12.14[***]	0.88	8.94[***]	0.82	7.43[***]
R^2	0.42		0.28		0.21	
Adjusted R^2	0.42		0.28		0.21	
F	147.30[***]		79.93[***]		55.14[***]	

4. DISCUSSION

The purpose of the current study was mainly to explore how the learning environment affects student engagement in online courses among Chinese university students. The overall results showed that teacher support and student-student support was positively correlated with student engagement.

4.1. Teacher Support and Student Engagement

The results showed that teacher support could significantly positively predict student engagements. The results of this study are consistent with previous studies. For example, Klem and Conell pointed out that teacher support is important to student engagement in school. Students with caring and supportive interpersonal relationships in the school reported more positive academic attitudes and were more engaged academically [16].

Although the learning environment of students was changed from traditional classroom to remote study, teacher support is still an indispensable factor in measuring student engagement. In this study, we found that teacher support mainly reflected in emotional support (e.g., My teacher care about me, Teachers believe I can do well). Langford et al also discovered teachers' emotional support is students' perceptions of trust, warmth, respect, and love as well as communications of empathy and care [26]. Students' general perception of teacher support is kind, encouraging and patient, and in particular situations, specific teacher support is required to solve problems individually. When taking online courses, learning obstacles vary among different individuals. Since the teacher cannot discover students' lack of concentration or any other problems by observing their behaviour, specific teacher support is of importance to increase students' emotional engagement. According to Suldo et al., by acknowledging students' academic success, demonstrating fairness during interactions with students, and fostering a classroom environment in which questions are encouraged, teachers are more likely to gain students' trust and respect, which in turn contribute to mutual communication and reliability [27].

Social cognitive theory notes that people who are socially persuaded to posses ability exert greater effort on tasks than those who are not convinced about their capability to master difficult situations [28]. With teacher support, students try to motivate themselves to achieve academic success and enjoy the intellectual difficulties they encounter while taking online courses. This kind of intrinsic motivation may be defined as the inherent pleasure and satisfaction derived from engaging in an activity [29]. Teachers' support may stimulate the students' need for relatedness, thus increasing their intrinsic motivation. In this research, intrinsic motivation is a specific form of students' cognitive engagement in the remote study [30]. Students who gain teacher support tend to make effort to learn via remote, which also improve student cognitive engagement to some degree.

In online courses, teacher support is also tangible [26]. In previous studies, behavioral engagement encompassed all three dimensions of student conduct in class, participation in school-related activities, and student interest in the academic task [31]. In an online class, when the teacher clarifying, questioning and correcting, students also make tangible behavioral responses. For instance, listening carefully to the teacher, raising some questions and contributing to class discussion from time to time. Real-time interactions are important as a strong, positive relationship between teachers and students is critical for increasing student behavioral engagement. As a result, students with an online learning difficulty or other problems can seek teacher support for help as a strategy to improve their engagement.

4.2. Student-Student Support and Student Engagement

This research discovered that student-student support can also significantly positively predict and student engagements. Students who perceive care and respect of peers, who are accepted and go well along with peers tend to be socially and academically engaged at school [32]. Even though the place has been moved from a traditional classroom to an online class, groups of people who take on courses together are still the same. Classmates, as an indivisible part of the learning environment, function as an important factor while considering student engagement via remote.

Students report that their peer groups and crowds provide them with a sense of emotional security, and those who do not perceive the relationship with other students as providing care and help tend to be at the risk of academic and behavioral problems. In the contrast, those who have access to emotional student-student support are more likely to feel a sense of belonging in class. School belonging is associated with active class participation, homework completion, exam preparation in courses online. Sense of belonging and students' emotional engagement may operate in a mutually reinforcing manner. That is, the more strongly they feel they belong, the more actively they engage emotionally. For instance, students will be willing to share information with their classmates after class, especially when they escaped some details the teacher mentioned which cannot be reviewed again in online courses.

However, the lack of positive support from classmates would cause emotional distress, which in turn leads to a negative school attitude and desire to dropout [33]. Luckily, hostile peer interactions hardly exist in online courses among Chinese university students in this research. The results of our study also show that support among students contributes to healthy competition cognitively in the remote study. For instance, students discuss the things they learned after class online through social websites or other manners. Expectations and motivation from peers release the anxiety and loneliness of studying at home.

Student-student support might be critical at times of heightened stress, and it might be particularly critical in allowing students to engage in courses online behaviorally as well [33]. In the online class, the difficulty of group discussion teamwork raises due to the absence of face-to-face talk, and hence mutual support and trust are of importance. Those who are supported and respected by other students are more willing to work together on homework or projects, taking responsibility in teamwork.

5. FUTURE DIRECTION AND LIMITATION

Currently, the participants were merely selected from university students. In the future study, the validity of this scale could be improved by applying the scale of a larger student group, ranging from primary and middle students to university students. Second, the design was cross-sectional in nature, so the data failed to clarify the causal relationship between the learning environment and student engagement. Therefore, future studies can adapt longitudinal study to acquire data over time and further examine variable relationships from a bidirectional perspective. Third, this study only uses questionnaires to collect data, some other method can also be taken to make results more subjective. For example, recording online class to observe the true performance of teacher and student. Forth, the current study only considers whether teacher support and student-student support affect student engagement, other variables, such as subjects and learning equipment, can be examined in future studies.

6. CONCLUSION

In summary, evidence from this article demonstrates that teacher and student-student support can significantly promote student engagement under the background of online study. Though the learning environment has been changed due to Covid-19, Chinese university students' engagement in an online class is relatively high in behaviour, emotional and cognitive dimensions.

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