

A Study of Chinese University Students' Online Classroom Anxiety and Motivation Justified by Online Management Platform

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ABSTRACT

Online learning has become part of education norm after the global pandemic. Many previous researches need to be reconsidered in this new online teaching and learning context. This study aims to find out the levels of student's foreign language anxiety and motivation, the interplay between the two subjects by questionnaires, and also how these may affect students' behavior during online class through data collected from online management platform. It is discovered that the anxiety and motivation are positively correlated, and different subscales of these two subjects would have different prediction ability of each other. At the same time, students' anxiety does not correlate with their behaviors online, but different motivation factors have a more complex relationship with what students do during the online sessions. Based on above findings, some pedagogical implications are proposed to help make better decisions.

Keywords: *Language anxiety, Motivation, Online management platform.*

1. INTRODUCTION

Faced with the worldwide COVID-19 pandemic, teaching and learning at all levels have made a shift from traditional classroom teaching to online teaching and learning. (Ahshan, 2021). Since 2020, many researches have been conducted on Emergency Remote Learning, but many are descriptive, focusing on perception of how students view teaching and learning with a few studies discussing the educational technology employed. (Bond et al, 2020).

Three years after COVID-19, online teaching and learning is well beyond its emergency use and becomes a new norm or at least, part of a new norm in education. In China alone, there are currently more than 50,000 MOOC courses offered on different websites, and more than 370 million users have registered in these courses. These numbers are still rising. (Wu, 2022) Although online learning has been proved a feasible option in this post-pandemic era, it's not without problems. Arribathi et al. (2021) has found nearly 80% of students participating online classes show symptoms of learning anxiety in an Indonesian University.

Resnik (2022) and Thandavaraj et al. (2021) report similar findings in Austria and Malaysia respectively.

Anxiety may strike students in this VUCA (volatile, uncertain, complex, ambiguous) world at any time in many different forms. (Hadar et al. 2020) It can cause cold sweats, shivering and many more physical responses. It can also cause emotional symptoms, such as fear, an inability to focus and so on. (Morgan, 2020) Many studies since 2020 have examined the relationship between anxiety and online learning. Some studies focus on general learning context (e.g. Fawaz et al. 2020, Demetriou et al. 2022). Some compare the anxiety level between online and in-person learning context (e.g. Resnik, 2021). Among studies of anxiety, Foreign Language Classroom Anxiety (FLCA) has become a reasonably independent topic in Second Language Acquisition. It has outlined learner's tendency to feel stressed when using or learning a foreign language, especially in a classroom setting. (Resnik, 2022) There are a number of studies that try to analyze the relationship between FLCA and other language learning constructs, using questionnaires (e.g.

Maican, 2021), but few have used data from learning management systems to support students' self-reported anxiety. Therefore, combined with traditional questionnaire and semi-structured interview, this data-driven study aimed to find a more accurate relationship between students' FLCA and their learning motivation, which may further correlate with their performance during online learning process. It is hoped that this research will be conducive to a better understanding of how anxiety level affect students' online learning, and enrich the pedagogical strategies teacher can adopt to optimize online learning.

2. LITERATURE REVIEW

2.1 Foreign Language Classroom Anxiety

Students' emotions affect their learning in many aspects, and anxiety is one of the most frequently researched subjects. Scovel (1978) has already reviewed different research of affective factors and language learning proficiency, and examined anxiety as primary affective variable.

Horwitz (1986a) has laid the foundation for FLCA, and the study defines the FLCA as "distinct complex of self-perceptions, beliefs, feelings and behaviors related to classroom language learning arising from the uniqueness of the language learning process". In his second related studies, Horwitz (1986b) examined the reliability and validity of Foreign Language Classroom Anxiety Scale (FLCAS). Scholars have employed this scale to see if FLCA is connected to other factors. Aida (1994) examined how FLCA affected Japanese learning students and found there was no significant gender differences in its effect. Awan et al. (2010) found a negative relation between students' anxiety level and achievement, and a higher anxiety level of male students and their female counterparts. Senel (2016) reported a similar finding in a Turkish University. Dewaele (2013) examined the link between FLCA and some personal traits, such as psychoticism and extraversion, and found moderate to significant relationships.

Not many researches have focused on the online context before 2020. (see Resnik, 2022) However, since the pandemic, researches of students' anxiety in online learning has grown rapidly. Gok et al. (2021) integrated flipped classroom into traditional teaching and found students' FLCA showed a significant decrease. Chen and Ren (2021) studied the relationship between FLCA and listening anxiety in online English language classrooms and

showed students' classroom anxiety and listening anxiety predicts each other. Moneypenny et al. (2022) reported that learners feel anxious about a variety of scenarios in online language courses which negatively correlated with oral proficiency. Prima et al. (2022) discovered no significant difference in FLCA between offline and online English class and negative evaluation is the primary cause of anxiety.

2.2 Learner Motivation

Learning motivation has been a major area of study in second language acquisition. It refers to "a learner's individual opinions about affairs, and learners would present different knowledge acquisition needs because of distinct opinions". (Lin et al. 2017) According to Harandi(2015), Students' motivation can be generally divided into two categories, intrinsic (where students perform an action to satisfy their internal desire, such as interest, identity) and extrinsic (where students do so to get the reward or avoid punishment from outside environment). It is argued that intrinsically motivated students will employ more energy and strategy to help them process the information better, whereas the extrinsically motivated students will only use the least amount of energy to reap the most possible benefit. (Afzal et al. 2010)

The effect of motivation may be enlarged in online learning environment in different ways. Fajri et al (2021) observed an increase in student motivation and learning interest using zoom cloud meeting. Rahman et al (2021) studied the relationship of online learning motivation and online learning satisfaction and discovered that there is a significant relationship between the two. Ritoaga and Ramadhani, (2020) suggests students' motivation increases when doing online studying from home. However, Sung et al. (2015) have found low completion rates, distraction from learning tasks in distance online language courses, which can be seen as indicators of low motivation in learning. Mese and Sevilen (2021) discovered a negative impact on learner motivation due to lack of social interaction and a mismatch of expectations. Mese (2021) also gives a more thorough review of research of motivation in online EFL classes, and report that many studies find a negative relationship between learner motivation and online learning outcome.

In order to measure student learning motivation, the 81-item questionnaire developed by Pintrich et al. (1991), later refined in Pintrich et al (1993), are

widely employed (e.g. Karadeniz et al. 2008, Jackson, 2018) – Motivated Strategies for Learning Questionnaire (MSLQ). (“Figure 1”) The instrument

contains two parts: motivation and strategies, each consisting of different scales and elements. (Hariri et al. 2020)

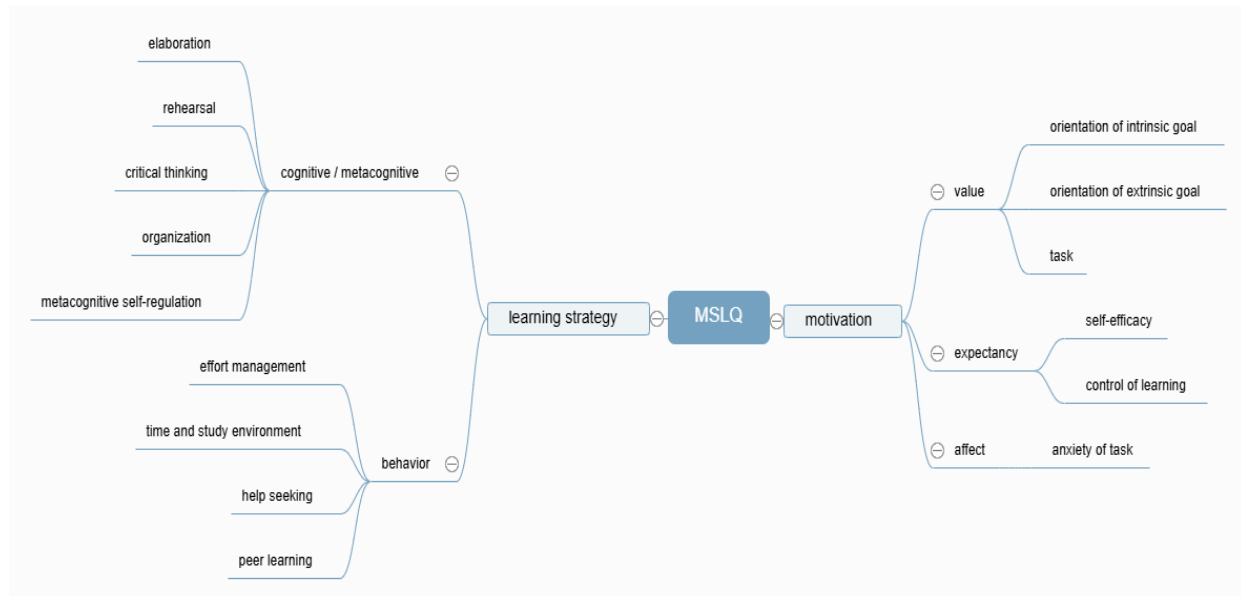


Figure 1 MSLQ and its subscales.

As early as 2012, Cho and Summers (2012) have discussed how to better use MSLQ in asynchronous online learning environments. More researchers have focused on this learning context ever since. There have been studies trying to find the link between FLCA and learning motivation. Carreira (2006) showed students with extrinsic motivation have less foreign language anxiety and suggested teachers should demonstrate usefulness of foreign language. Liu and Huang (2010) studied 980 Chinese undergraduates and found anxiety and learning motivation are negatively correlated, but are both significantly correlated with learning achievement. Dewaele et al. (2018) suggested boosting foreign language enjoyment should take over FLCA as a major goal for teacher to be concerned about.

However, most of these researches are concerned with traditional learning context. Not until the breakout of the pandemic, did many researchers turn their attention to online learning context, such as Li and Dewaele (2021) and Korkmaz (2021). Even less is the study on relationship between FLCA and learning motivation in online learning context. Therefore, this study aims to give a tentative look into their relationship and try to formulate some pedagogical suggestion.

3. RESEARCH METHOD AND HYPOTHESES

3.1 Rationale for Present Study

Numerous as researches on FLCA and learning motivation, available studies are far fewer on their relationship in online teaching and learning context. Since the pandemic breakout, schools and universities have employed various online platforms and teaching management systems. Given the prevalence of online teaching, the present study hope to investigate Chinese university EFL students' FLCA and learners' motivation in detail, and find out their relationship by answering the following questions:

- (1) What is the general level of students' FLCA and learning motivation in an online context?
- (2) How are students' FLCA and learning motivation related to each other in the online context?
- (3) Do students' level of anxiety and motivation predict their behaviors in online platforms and how are they related?

3.2 Participants

A total of 54 students participated in this study. They are from two majors: computer science and finance. The students range from freshmen to junior students. They have to take partly online classes and partly face-to-face classes during the 2022 to 2023 autumn semester.

3.3 Instruments

The study used two questionnaires, foreign language classroom anxiety (FLCA) questionnaire and the Motivated Strategies for Learning questionnaire (MSLQ).

The first questionnaire, FLCA, includes four subscales, namely anxiety of interaction (FLCA1), anxiety of negative feedback (FLCA2), anxiety of exams (FLCA3) and other anxieties (FLCA4). The questionnaire is provided in Chinese for easy comprehension, and no other adjustments have been made to it. The second questionnaire, MSLQ, contains four subscales, namely self-efficacy (MSLQ1), intrinsic value (MSLQ2), cognitive strategy use (MSLQ3) and self-regulation (MSLQ4). In the original version of MSLQ, there is a fifth subscale of exam anxiety, which overlaps with the FLCA3, so it has been removed from the questionnaire that students receive. The second questionnaire is also provided in Chinese for easy comprehension.

A 5-point Linkert scale ranging from 1 (strongly disagree) to 5 (strongly agree) was used for FLCAQ, and a 7-point Linkert scale ranging from 1 (strongly disagree) to 7 (strongly agree) was used for MSLQ. After data collection, the FLCA reached a Cronbach α of 0.937 and MSLQ reached a Cronbach α of 0.927, showing that they are reliable. A KMO of 0.729 and 0.685 shows that both questionnaires have a reasonable validity. The data gathered from both questionnaires can be used for further analysis.

The teaching platform used for this study is YUN class. It records students' activities online, including how many times they join discussions,

hand in homework and the score they get. A total experience score is calculated for all their behaviors. These data provide a more objective description of students' behaviors and rationale behind. The data chosen for this study is assignment completion (AssComp), online discussion participation (DisParti) and total performance score (OID).

3.4 Data Analysis

The study included three phases. A correlation and multiple stepwise regression study will be conducted among data from two surveys, including their subscales. The second phase include a correlation between two surveys subscales and their behavioral data from online platforms. Lastly, four students are chosen to do a short semi-structured interview to further explore their mindset. The interview is conducted by another teacher who also teaches these students, to avoid students being threatened by the fact that they have to say something about the author or her teaching practice.

4. RESULTS

4.1 Levels of English Language Classroom Anxiety and Students' Motivation

Both the mean score and the standard deviation of the overall FLCAQ and MSLQ and their factors are shown in "Table 1". Adopting the standard of Liu and Thondhlana (2015), a mean score of 4-5, 3-4 and below 3 on each scale means strong, moderate and weak agreement respectively. For the 7-point Linkert scale, a similar classification can be calculated accordingly. A mean score of 5.6-7, 4.2-5.6 and below 4.2 equals to strong, moderate and weak agreement. As for FLCA, students were found to be of weak in their overall level, but very close to moderate level (Mean = 2.97). Among all subscales, students have the lowest level of FLCA3 (exam anxiety), but the SD is among the highest. As for the MSLQ, students have a moderate level of learning motivation (Mean=5.03). The MSLQ4 (self-regulation) has the lowest score and lowest SD among all (Mean=4.49, SD=0.67), which means students have more consensus in this aspect.

Table 1. Descriptive statistics of FLCA, MSLQ and different categories of both these two questionnaires (N = 54)

	FLCA	FLCA1	FLCA2	FLCA3	FLCA4	MSLQ	MSLQ1	MSLQ2	MSLQ3	MSLQ4
Mean	2.97	2.9	3.02	2.72	3.1	5.03	5.27	5.53	4.9	4.49
SD	0.73	0.78	0.75	0.93	0.87	0.73	0.95	0.88	0.85	0.67

4.2 Correlations Within and Between FLCA and MSLQ Subscales

“Table 2” and “Table 3” showed that FLCA and MSLQ are positively correlated. Students’ overall classroom anxiety are closely related with all subscales of motivation except for MSLQ3 (cognitive strategy use), while students’ motivation are correlated with FLCA2 (anxiety of feedback) and FLC4 (other anxieties), not with FLCA1 (anxiety of interaction) and FLCA3 (anxiety of exams).

Table 2. Correlation between FLCA and MSLQ 1-4

	FLCA
MSLQ1	0.349**
MSLQ2	0.487**
MSLQ3	0.038
MSLQ4	0.351**

* $p < 0.05$ ** $p < 0.01$

Table 3. Correlation between MSLQ and FLCA 1-4

	MSLQ
FLCA1	0.264
FLCA2	0.366**
FLCA3	0.089
FLCA4	0.313*

* $p < 0.05$ ** $p < 0.01$

4.3 Predictors of English Language Classroom Anxiety and Motivation

Correlation analysis merely suggested bivariate relationships. Therefore, to explore the interaction between these two, stepwise regression analysis of overall anxiety was done on different dimensions of motivation, namely MSLQ 1-4, followed by a stepwise regression analysis of overall motivation on different dimensions of anxiety, namely FLCA1-4.

The results of the regression analysis of the overall FLCA on MSLQ 1-5 were reported in “Table 4”. Only two models were derived with the change in R^2 being significant the overall FLCA: 0.223 for model 1 (MSLQ2) and 0.355 for model 2 (MSLQ2 and MSLQ3). Of the two variables included in model 2, MSLQ2 ($B = 2.561$, $t = 5.567$) is a positive predictor while MSLQ3 ($B = -1.142$, $t = -3.409$) is a negative predictor.

Table 4. Multiple stepwise regression coefficients and significance of MSLQ1-4 for FLCA (N = 54)

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	21.992	19.181		1.147	.257
MSLQ2	1.527	.379	.487	4.023	.000
2 (Constant)	37.188	18.038		2.062	.044
MSLQ2	2.561	.460	.817	5.567	.000
MSLQ3	-1.142	.335	-.500	-3.409	.001

a. Dependent Variable: FLCA

“Table 5” displayed the results of regression analysis of the overall MSLQ on FLCA1-4, where two models were derived with change in R^2 being significant for overall MSLQ: 0.134 for model 1 (FLCA2) AND 0.211 for model 2 (FLCA2 and

FLCA3). Of all the two variables included in model 2, FLCA2 ($B = 2.253$, $t = 3.624$) is a positive predictor while FLCA3 ($B = -4.206$, $t = -2.229$) is a negative predictor.

Table 5. Multiple stepwise regression coefficients and significance of FLCA1-4 for MSLQ (N = 54)

Coefficients ^a					
Model		Unstandardized Coefficients		Standardized Coefficients	
		B	Std. Error	Beta	
1	(Constant)	156.365	14.524		10.766
	FLCA2	1.218	.429	.366	2.839
2	(Constant)	156.798	14.001		11.199
	FLCA2	2.253	.622	.677	3.624
	FLCA3	-4.206	1.887	-.417	-2.229

a. Dependent Variable: MSLQ

4.4 Correlation Between FLCA (subscales) with Online Platform Data

“Table 6” displays the correlation of FLCA and its 4 subscales with online platform data. The only correlation among all factors is between FLCA3 (anxiety of exam) and Assignment Completion, which is a negative one.

Table 6. Correlation between FLCA and its subscales with Online Platform Data

	OID	AssComp	DisParti
FLCA	0.022	-0.203	0.189
FLCA1	-0.048	-0.256	0.186
FLCA2	0.084	-0.117	0.209
FLCA3	-0.174	-0.273*	0.088
FLCA4	0.092	-0.143	0.198

* $p < 0.05$ ** $p < 0.01$

4.5 Correlation Between MSLQ (subscales) with Online Platform Data

“Table 7” demonstrates the relationship among all factors of MSLQ and OPD. The overall MSLQ significantly correlates with all data from online platform. Among the four subscales of motivation, MSLQ1 (self-efficacy) and MSLQ3 (cognitive strategy use) are both significantly correlated with all data, MSLQ2 (intrinsic value) only correlates with Discussion participation and MSLQ4 (self-regulation) is negatively correlated with assignment completion.

Table 7. Correlation between MSLQ and its subscales with online platform data

	OID	AssComp	DisParti
MSLQ	0.366**	0.386**	0.436**
MSLQ1	0.300*	0.381**	0.502**
MSLQ2	0.228	0.204	0.410**
MSLQ3	0.348**	0.430**	0.283*
MSLQ4	-0.007	-0.401**	0.033

* $p < 0.05$ ** $p < 0.01$

5. DISCUSSION

5.1 Correlation Between Overall Motivation and Anxiety

There is a significant positive correlation between overall FLCA and MSLQ. It may be explained by the fact that students who are more motivated generally want to perform better in English, and they will worry more if they cannot do so. Thus, the higher the motivation, they have, the higher anxiety level they may have. This contradicts with what Liu & Huang (2013) and Tsai & Chang (2013) found. The former finds a negative relationship while the latter finds no significant relationship among the two. One of the possible reasons might be the different instruments used for measuring students' motivation. The Liu & Huang used English Learning Motivation Scale and Tsai & Chang used Foreign Language Learning Motivation Scale. Different surveys measure different motivation from different aspects. For example, the Foreign Language Learning Motivation Scale made

the difference between instrumental and intrinsic motivation while MSLQ deals more with learner's own motivation.

5.2 Correlation Between Motivation and Different Anxiety Subscales

Through multiple stepwise regression analysis, anxiety of negative feedback and other anxieties will predict the motivation level. Both influence motivation level positively. Through semi-structured interview with students, some possible reasons may be highlighted.

- Student C: If I know I don't finish the homework, and the teacher will be very likely to ask me to answer that question, I will want to do the homework more.
- Student A: I know the teacher will ask us to exchange the quiz paper, but I don't want others to see I get a low score, so I will review the coursework.

It can be seen from these responses that trying to avoid getting a negative feedback or even a negative impression makes the student do more, no matter where the feedback comes from, teachers, peers or even from parents.

Items in FLCA questionnaire concerns more about student's emotion about the class, such as item 5 – I will be worried if I don't understand what the teacher is saying, and item 27 – I will feel anxious more in English class. Students may find if they can do better in English, they won't feel these negative emotions.

- Student D: I'm good at maths, so I'm not worried in math class. If I can be better in English like my classmate, I may like English class better. But only maybe.

5.3 Correlation Between Anxiety and Different Motivation Subscales

The correlation between FLCA and MSLQ subscales are closer than the other way round. Interaction, Intrinsic value and self-regulation all positively correlated with overall anxiety level.

"Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura et al. 1999). The average of students' self-efficacy score is 5.26, which falls in the moderate level. The higher the students think they can do something, the more depressed when they find they possibly could not accomplish.

- Student A: I think I have reviewed the coursework, and I think I can get a good score, but it's not often the case. There is always something I miss or do not fully understand and it appears in the test.

Higher intrinsic value shows students think highly of the subject and its importance to themselves. Since most students are going to pursue their studies overseas, English and English test scores (IELTS) are vital for them. They worry more if they cannot achieve a higher score or learn better.

- Student B I'm going to UK next year, but I don't want to spend money to do extra language course there, so I have to get an IELTS 6.0 before I go, and that makes me a little worried because I'm afraid I cannot get the score at first try.

"Self-regulation (or self-regulated learning) refers to learning that results from students' self-generated thoughts and behaviors that are systematically oriented toward the attainment of their learning goals." (Schunk & Zimmerman, 2013) Students are aware of what they are doing and what they should do, but it doesn't automatically lead to acceptance, which may generate more anxiety.

- Student D: I know I am not good at English, but I still need to get a good score, and this makes me very tired. I have to do something I don't really like.

5.4 Correlation Between Anxiety and Online Platform Teaching

Anxiety is not significantly correlated with online platform data. It may not be very surprising when students know they have to do those tasks to get the score.

- Student C: The tasks and activities online are part of our final score, I have to do it whether I like them or not. The difference is only a higher or lower score, but at least I get some scores.

There is a light negative correlation between anxiety of negative feedback and assignment completion. It may be explained by the mindset that if I don't have in the homework, no negative feedback can be given for it, which is yet to be justified.

5.5 Correlation Between Motivation and Online Platform Teaching

Compared with anxiety, subscales of motivation have a more complex relation with online platform

data. The overall motivation significantly correlates with all online data.

All subscales are positively correlated with online discussion participation except for self-regulation. The relation between self-efficacy and intrinsic value can be confirmed by the following excerpt.

- Student D: When the teacher asks a question or discusses something I happen to know, I will participate in the discussion although it doesn't happen very often.

Students may want to get affirmation through expressing their ideas, which in-turn improves their self-efficacy and intrinsic value. Through discussion, students can verify their ideas or answers, and this may also be part of their cognitive strategy use.

Self-efficacy and cognitive strategy highly correlate with assignment completion. Item 5 (I can complete the task and assignment issued by teachers) in the self-efficacy subscale clearly illustrated why students with higher efficacy can better complete homework. Item 24 (I will use what the teacher said in classroom to complete homework) and item 31 (I will integrate old knowledge into new homework) in cognitive strategy use section are both related to using homework as part of their strategy. Therefore, it may account for the positive correlation among these factors. On the contrary, students' self-regulation ability may negatively affect their homework completion status. Like Student D have stated before, homework is something he doesn't like, and this may lead to a lower level of completion.

Self-efficacy is less strongly correlated with online platform data than cognitive strategy use. Believing alone cannot help students do better in their homework or exams, and their language ability also need to function so as to get a higher overall score. Cognitive strategy use is the step that helps students improve their English ability, therefore it correlates better with overall experience score.

6. SUGGESTION

Researches have shown a moderate negative relationship between anxiety and achievement. (Horwitz, 2010) Russel (2020) recommended different techniques and inventions to help reduce students' level an anxiety in online classrooms. Knowing that students' anxiety and motivation are

correlated, it is possible to help student from the motivational aspect. Teachers should understand what students are thinking, make sure they know that English are important to maintain their motivation level; while also remind students to find a balance between what they need (to learn English better) and what they do (learning strategies and self-regulation) to avoid them getting over anxious.

Although the after waves of global pandemic on education has been slowly retrieving, the new technique and applications should not be cast aside. In this data-driven world, online teaching platforms gather different types of data to provide a more intuitive picture of students' behaviors and their rationale behind. Teachers can use these data better to guide their own practice and find out hidden problems sooner.

YUN class is one of the many teaching platforms that are put into use. It collects some useful data, but far more data could be collected and used ethically for research.

7. CONCLUSION

Against the background of online learning, the present study examined students' profile of English language learning anxiety and learning motivation, the relationship between both overall scale and subscales of these two, the predicting power of anxiety over motivation and vice versa, and also how students' motivation and anxiety are reflected in online teaching using data collected from teaching platforms. The study revealed the following major findings:

- (1) Students generally showed both a medium level of anxiety and motivation while doing online English learning.
- (2) Students' anxiety and motivation level are positively correlated. The negative feedback and other anxieties will predict motivation better than other subscales, while intrinsic value is a positive predictor and cognitive strategy use is a negative predictor of students' anxiety.
- (3) Students' anxiety does not significantly correlate with their behavior on online teaching platforms. Overall motivation, self-efficacy and cognitive strategy use are related to all online data in this study, intrinsic value relates to discussion participation and self-regulation negatively correlates with only assignment completion.

The results of this study leave the following implication for general online teaching and platform use.

- (1) Too much motivation will lead to higher anxiety level. Teachers should help students find a balance among the two.
- (2) Teaching platform is a good tool to collect data and help teachers make decision and find problems.
- (3) Teaching platform can collect more data of students learning behavior under ethical guidance.

This study had certain limitations. First, the number of students participating is relatively small because of the character of their class. Second, the data on the platform is still limited, and more diverse data sources may help justify students' behavior. Thirdly, the study was conducted during a less stable teaching situation where off-line and online teaching were interchanging irregularly. It would be better if the data can be collected during a more stable and long-term learning process.

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