



Research on the Relationship Between College Students' Class Interaction and Self-regulated Learning Skills in Online English Translation Course

Xue Xia^(✉) and Min Feng

Shanghai Normal University Tianhua College, Shanghai, China
{xx48, mf942}@nau.edu

Abstract. Class interaction is the key to the knowledge construction of learners in the online learning environment, and it is also one of the important ways to improve the effect of online learning. Based on the data analysis of 86 online learners, this study used the questionnaire survey method and found a significant correlation between class interaction and self-regulated learning skills in online English translation teaching. More specifically, class interaction in online English teaching can positively affect students' self-regulated skills, and the impact of learner-learner interaction on online self-regulation is greater than that of instructors and learners. Therefore, in the teaching of online English translation, it is necessary to build a systematic student-student interaction system, optimize the external conditions of self-regulation, design a variety of online activity forms, improve learners' classroom participation, and promote the transformation of teaching interaction into learners' self-regulation internal motivation.

Keywords: Class interaction · Self-regulated learning skills · Online course

1 Introduction

Online education is the product of the integration and development of information technology and education, and has become an important teaching form in the information age [1]. Especially since COVID-19, online learning has become an important means to respond to the national "non-stop learning" policy, such as MOOC and Super Star Learning APP. In recent years, more and more research has gradually focused on the quality of online education and learner experience from the macro to the micro level. The macro aspect includes the design and development of online course resources, platforms, and environments, while the micro aspect focuses on learners' behavior, emotions, and psychology, including online self-regulated learning, online learning satisfaction, online learning self-efficacy, and online learning engagement [2]. The concept of self-regulated learning (SRL) originated from social cognitive theory, first proposed by Zimmerman et al., mainly refers to the ability to plan, monitor, regulate, and reflect on one's own learning process and behavior by using metacognitive, motivational, and behavioral

strategies. According to recent findings, compared with traditional learning methods, online learning has obvious characteristics of autonomy and weak control, and its effect highlights learners' self-regulation [3]. Therefore, developing students' SRL skills is the key to ensuring the quality of online learning, and multiple studies have shown that SRL can be affected by course interaction.

However, traditional teaching methods are still applied in the most undergraduate online translation course with a dull classroom atmosphere and ineffective class interaction [4]. Therefore, this paper aims to deeply investigate online learning data and conduct multiple regression analysis, in order to clarify the impact of class interaction on online self-regulation level, so as to provide new solutions and strategies for the problem of insufficient self-regulation skills in online English translation learning.

2 Methodology

2.1 Participants

An online electronic questionnaire was used for data collection. Based on the online learning experience, the participants in this study were Chinese undergraduates enrolled in the English translation course at a university more than 16 weeks during the epidemic who had been able to utilize the online learning platform effectively. 93 questionnaires were issued, and 86 valid questionnaires were returned for a response rate of 92.47%. On the valid questionnaires, 53.49% of respondents were female while 46.51% were male. Freshmen to seniors comprised 24.44%, 26.56%, 25.78%, and 23.22%, respectively, of the participants. Each participant was requested to fill out informed consent voluntarily. They were informed that the collected responses would be used only for research purposes and that their information would be kept confidential.

2.2 Measurements

The instruments used in this study were adapted from existing validated scales: Online Self-regulated Learning Scale and Online Learning Interaction Scale designed by Liu in 2018 [5]. All of these scales used a 5-point Likert rating (5 = strongly agree, 4 = agree, 3 = neither agree nor disagree, 2 = disagree and 1 = strongly disagree).

Online Self-regulated Learning Scale includes six dimensions: goal-setting (items 1–6), self-motivation (items 26–28, 33–37), task strategies (items 7–13), self-control (items 14–22), help-seeking (items 23–25), self-evaluation (items 29–32) with a total of 37 items. Goal-setting refers to learners setting their own learning goals for online course. Self-motivation means learners like to learn knowledge that interests them, even if it's challenging. Task strategies refers to learners often asking themselves questions to help them understand the learning concepts in online learning. Self-control refers to learners adjusting their learning pace in time according to learning progress. Help-seeking refers to learners who take the initiative to seek help from teachers and peers when they encounter learning difficulties. Self-evaluation refers to learners measuring whether they have achieved my learning goals at the end of the course. The internal consistency coefficient (Cronbach's α) was 0.939. Online Learning Interaction Scale

includes two dimensions: learner-instructor interaction (items 1–7), and learner-learner interaction (items 8–14), with a total of 14 items. The overall scale's internal consistency coefficient (Cronbach's α) was 0.863.

According to the results, the reliability coefficient is higher than 0.8. This suggests that this questionnaire's reliability is high and has excellent internal consistency.

2.3 Data Analysis

SPSS 26.0 was used for data statistics and analysis of the questionnaire. The process of data analysis includes three steps. First, data screening is carried out to test the independence, normality and homogeneity of the data. Second, Pearson correlation analysis is used to explore the relationship between online class interaction and online SRL skills. Third, multiple regression analysis is used to investigate whether online English translation class interactions can effectively predict their SRL skills.

$$y_i = b_0 + b_1x_{1i} + b_2x_{2i} + \dots + e_i (i = 1, 2 \dots n) \quad (1)$$

In this multiple regression equation, y refers to the predicted or expected value of the dependent variable (Task strategies, Goal-setting, Self-control, Help-seeking, Self-motivation, Self-evaluation). b_0 is the value of y when all of the independent variables (x_1 and x_2) are equal to zero. b_1 is the estimated regression coefficient that quantifies the association between x_1 (Learner-instructor interaction) and the outcome, and b_2 is the estimated regression coefficient that quantifies the association between x_2 (Learner-learner interaction) and the outcome, and e refers to the error term.

3 Analysis and Discussions

3.1 Analysis of College Students' SRL Skills in Online Courses

According to Table 1, the results of descriptive statistical analysis show that the overall mean value of college students' online self-regulated learning skills is 3.69, and the order of the mean value of each dimension from high to low is: help-seeking (3.78) > self-motivation (3.76) > self-control (3.71) > goal-setting (3.65) > task strategies (3.63) > self-evaluation (3.60). It can be seen that the SRL skills of college students in English translation class is generally above the average level (the median is 3.00). Self-evaluation scores are the lowest reflecting that college students are at a relatively low level of assess and reflect themselves after online courses. As far as the dispersion of the standard deviation of SRL skills is concerned, the dispersion of self-motivation ($SD = 0.50$) and self-evaluation ($SD = 0.64$) are relatively large. For class interactions, the mean value of learner-instructor interaction (3.90) is comparatively higher than learner-learner interaction (3.70). However, the dispersion for learner-learner interaction ($SD = 0.60$) far surpasses the learner-instructor ($SD = 0.54$).

According to the results, it can be seen that college students' online English translation SRL skills is generally at a high level. Specifically, students' needs for help-seeking is higher than other aspects. The results difference in students' self-motivation is the smallest. In contrast, the students' results of self-evaluation significantly differ from

Table 1. Analysis of the Correlation and Descriptive Statistics of Main Variables (N = 86)

Dimensions	Learner-instructor Interaction (3.90 ± 0.54)	Learner-learner Interaction (3.70 ± 0.60)
Task strategies (3.63 ± 0.53)	0.38***	0.56***
Goal-setting (3.65 ± 0.61)	0.32***	0.49***
Self-control (3.71 ± 0.51)	0.43***	0.60***
Help-seeking (3.78 ± 0.58)	0.57***	0.62***
Self-motivation (3.76 ± 0.50)	0.41***	0.51***
Self-evaluation (3.60 ± 0.64)	0.24*	0.50***

*p < .05. **p < .01. ***p < .001

each other. It suggests that college students' online English translation SRL skills is generally at a high level. However, the result shows that students do not give priority to assessment and reflection in online classes. Therefore, to boost college students' SRL skills, they should be reminded to review their previous knowledge in time after class, evaluate their progress and reflect on their current limitations.

3.2 Relationship Between Class Interaction and SRL Skills

Analysis of the Correlation Between Class Interaction and SRL Skills

The Pearson correlation analysis method is applied in this study to further investigate the relationship between class interaction and SRL skills. Table 1 shows a significant positive correlation between the two dimensions of college students' class interaction and the six dimensions of online English translation SRL skills ($r = 0.24 \sim 0.62$, $p < 0.05$), which lays the foundation for the subsequent regression analysis.

The research confirms that there is a significant correlation between classroom interaction and online learners' SRL, which also revealed the essential role of class interaction for learners' SRL skills cultivation. This result is in line with previous research. Li et al., referred in their study that the use of interactive material moderates the influence of motivation on SRL skills in e-class in the context of Mongolia primary school [6]. Further, Vilkova & Shcheglova's research more similar to this study' context also manifested that the construct of SRL skills of college students in online classes cannot be separated from the establishment of interactive environment [7]. It is also vital to mention that studies on class interaction and online language learning SRL skills linkages remain limited. Therefore, it is essential to continue investigating the association between class interaction aspects and language SRL skills.

Analysis of Multiple Regression on SRL Skills

To further explore the predictive effect of class interaction on online English translation SRL skills, multiple simultaneous regression analysis is adopted in this study. In all two regression models, two predictors were entered (learner -instructor interaction and learner-learner interaction), and the outcome variables were the dimensions of SRL

skills (task strategies, goal-setting, self-control, help-seeking, self-motivation, and self-evaluation). The results suggest that all the multiple regression models were significant (Table 2).

According to Table 2, all the six models are statistically significant for the p (s) < 0.001 . Most importantly, the results show that learner-learner interaction can highly significantly predict the six outcome variables, assignment strategies ($\beta = 0.50, t = 4.57, p < 0.001$); goal and plan ($\beta = 0.45, t = 3.94, p < 0.001$); self-control ($\beta = 0.52, t = 4.95, p < 0.001$); academic supported ($\beta = 0.44, t = 4.49, p < 0.001$); self-motivation ($\beta = 0.41, t = 3.66, p < 0.001$); assessment and reflection ($\beta = 0.53, t = 4.69, p < 0.001$). However, academic supported was the only predictor of learner-instructor interaction ($\beta = 0.33, t = 3.35, p < 0.01$) while this dependent variable was not significantly associated with the rest of independent variables ($p > 0.05$).

The analysis found that different dimensions of classroom interaction have different effects on online learners' self-regulated learning. It can be seen that interaction between learners and learners is the most influential factor in online English translation SRL skills. Through in-depth analysis of this regression effect, we can find that its theoretical root is social learning theory. Social learning theory not only emphasizes the social characteristics of individual learning, but also attaches importance to the individual initiative in the learning process, and puts forward the interactive determinism of the interaction of environment, individual and behavior in the learning process [8]. Peer interaction, as an important environmental factor affecting learning, is bound to have a direct impact on learners' SRL process. For example, peer discussion and mutual evaluation in group activities can directly trigger learners' SRL skills.

Table 2. Analysis of Multiple Simultaneous Regression on SRL Skills (N = 86)

DV	IV	β	t	R^2	F
Task strategies	L-I	0.11	0.97	0.301	19.27***
	L-L	0.50	4.57***		
Goal-setting	L-I	0.06	0.56	0.242	13.24***
	L-L	0.45	3.94***		
Self-control	L-I	0.14	1.30	0.367	24.06***
	L-L	0.52	4.95***		
Help-seeking	L-I	0.33	3.35**	0.456	34.75***
	L-L	0.44	4.49***		
Self-motivation	L-I	0.18	1.59	0.280	16.13***
	L-L	0.41	3.66***		
Self-evaluation	L-I	-0.06	-0.49	0.255	14.23***
	L-L	0.53	4.69***		

L-I: Learner-Instructor Interaction; L-L: Learner-Learner Interaction

* $p < .05$. ** $p < .01$. *** $p < .001$

4 Suggestions

The study found that in an online English translation learning environment, students' assessment and reflection skill is at a low level, and the most relevant factor to this problem is learner-learner interaction. In order to improve self-regulated learning skills for online English translation courses based on effective interaction practices (Fig. 1), this study puts forward the following suggestions in the following aspects.

In macro level, to facilitate learner-learner interaction, the key is for teachers to create necessary to prepare online learning environment and atmosphere, such as breaking out group work room, adjusting techniques and selecting suitable materials. The instructor is suggested to establish different group room based on students' interests. On this platform, students can upload files, evaluate translated works, share information and exchange experience [9]. In the preparation of teaching materials, teachers should select some translated texts that are familiar to group members and easy to carry out group activities, such as sentences in comprehensive English textbooks or extracurricular reading materials uploaded by group members to the platform [10]. After the establishment of the group work room, the team members first translate the draft, then discuss and review each member's draft one by one to form a final draft. The group representatives will show the final draft to the class public platform and provide the unsolved problems to the whole class for discussion. The peers or instructor can help solve these questions so as to internalize knowledge (Fig. 2).

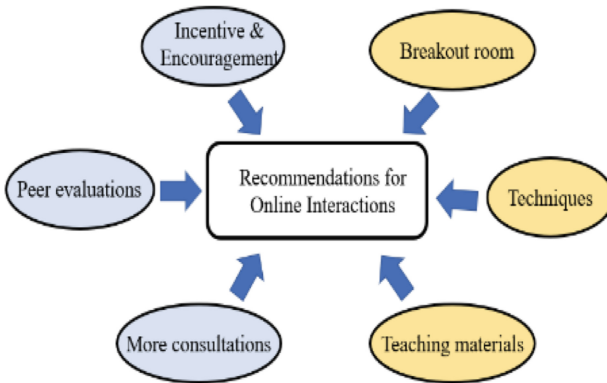


Fig. 1. Recommendations for Online Interactions

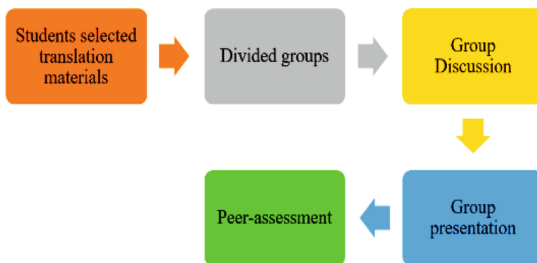


Fig. 2. Example of L-L Interaction

5 Conclusion

The results of the study showed that class interaction enhances SRL skills of college students in online translation class. Besides help-seeking can be predicted by instructor-learner interaction, learner-learner interaction is the main influential factor for college students' online English translation SRL skills. Therefore, it is suggested that instructors should create and design an accessible online peer interaction platform, which is an effective way to promote students' SRL skills in English translation e-learning. Online interaction model based on micro and macro level is encouraged to provide students with group work room, suitable teaching materials, peer evaluations and more consultations.

References

1. Wang, Y., Cao, Y., Gong, S., Wang, Z., Li, N., & Ai, L. (2022). Interaction and learning engagement in online learning: The mediating roles of online learning self-efficacy and academic emotions. *Learning and Individual Differences*, 94, 102128. <https://doi.org/10.1016/j.lindif.2022.102128>
2. Memon, M. Q., Lu, Y., Memon, A. R., Memon, A., Munshi, P., & Shah, S. F. A. (2022). Does the impact of technology sustain students' satisfaction, academic and functional performance: an analysis via Interactive and self-regulated learning? *Sustainability*, 14(12), 7226. <https://doi.org/10.3390/su14127226>
3. Zheng, B., Ward, A., & Stanulis, R. (2019). Self-regulated learning in a competency-based and flipped learning environment: learning strategies across achievement levels and years. *Medical Education Online*, 25(1), 1686949. <https://doi.org/10.1080/10872981.2019.1686949>
4. Xi, J., Chen, Y., & Wang, G. (2018). Design of a personalized massive open online course platform. *International Journal of Emerging Technologies in Learning (IJET)*, 13(04), 58. <https://doi.org/10.3991/ijet.v13i04.8470>
5. B. Liu, "Research on the influence and intervention of teaching interaction on college students' SRL," Doctor Thesis, Shaanxi Normal University, Xi'an, 2018.
6. Li, S., Yamaguchi, S., & Takada, J. (2018). The influence of interactive learning materials on self-regulated learning and learning satisfaction of primary school teachers in mongolia. *Sustainability*, 10(4), 1093. <https://doi.org/10.3390/su10041093>.
7. Vilkova, K., & Shcheglova, I. (2020). Deconstructing self-regulated learning in MOOCs: In search of help-seeking mechanisms. *Education and Information Technologies*, 26(1), 17–33. <https://doi.org/10.1007/s10639-020-10244-x>
8. Tri Harinie, L. (2017). Study of the Bandura's social cognitive learning theory for the entrepreneurship learning process. *Social Sciences*, 6(1), 1. <https://doi.org/10.11648/j.ss.20170601.11>
9. Baldan Babayigit, B., & Guven, M. (2020). Self-Regulated learning skills of undergraduate students and the role of higher education in promoting self-regulation. *Eurasian Journal of Educational Research*, 20(89), 1–24. <https://doi.org/10.14689/ejer.2020.89.3>
10. Callan, G. L., DaVia Rubenstein, L., Barton, T., & Halterman, A. (2021). Enhancing motivation by developing cyclical self-regulated learning kills. *Theory into Practice*. <https://doi.org/10.1080/00405841.2021.1932153>

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

