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THE EFFECTS OF TEACHING OF TRANSFORMATIVE
LEARNING ON UNIVERSITY STUDENTS' ENGLISH
LEARNING AUTONOMY IN CHINA

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Abstract:

This study aims to study the effects of implementing the Teaching of Transformative Learning (TTL) on non-English major students' English Learning Autonomy (ELA) specifically in an English reading course at a university in China. The main features of TTL were embodied in the critical reflection and the rational discourse on the basis on equal and friendly classroom atmosphere. The study utilized a questionnaire on learning autonomy as its research method to collect data from 116 students in the experimental class. Twenty-three items in the questionnaire investigated five aspects of the students' ELA. The means of the post-test and pretest of the experimental class students' ELA revealed a significant difference in the TTL. It indicated that the TTL had a good effect on improving the university students' ELA in the present study. The study hopes to provide a beneficial reference for other scholars who are interested in improving students' learning autonomy in their teaching practice.

Keywords:

Teaching Of Transformative Learning; English Language Autonomy; The Effects

Introduction

With the development of Chinese reform and opening, English language has become more and more important in China. Though the ministry of education has confirmed that whether China's universities require students to pass the CET-4 (College English Test Band 4) as a mandatory requirement for awarding students bachelor's degrees depends on the universities themselves, some universities have still set the mandatory requirement of passing the CET-4 for awarding students bachelor's degrees because they are afraid that the decoupling the awarding the bachelor degree from the passing of CET-4 will affect their universities' English teaching quality (Zeng & Sun, 2013). Some employers require CET-4 or even CET-6 (College English Test Band 6) certificates as a prerequisite for their recruitment. Generally, whatever students learn, their learning autonomy is one of the key factors for their success of learning. The learners' autonomy is very important, if their learning methods are right, their high learning autonomy will help them to improve their learning achievement (Derrick, 2001; Ponton, 1999). Ghorbandordinejad and Ahmadabad (2016) carried out an examination of the relationship between learning autonomy and the foreign language achievement mediated by foreign language classroom anxiety and claimed that there is "a strong correlation between learners' autonomy and their English achievement ($r = 0.406$, $n = 400$, $p < .01$)" (Ghorbandordinejad & Ahmadabad, 2016, p. 739). Working as an English teacher in a university, the present researcher finds that the students' English Learning Autonomy (ELA) is not high because he seldom finds the students read English words or texts before they come to the classroom for English lesson in the morning in their daily English learning. However, the students' English capability is weak because the passing rate of the CET-4 is only about 16% according to the latest statistic data in 2021. This study aims to improve students' ELA using the TTL. Specifically, the study wants to answer three research questions:

1. What is the students' state of ELA before the TTL?
2. What is the students' state of ELA after the TTL?
3. Does the TTL make a difference on improving the students' ELA?

Literature Review

According to Little (1991) and Holec (1981), learning autonomy refers to learners' capability to make decision, to think critically, and to learn independently. Learning autonomy is also considered as an attitude that learners adopt while they are learning (Dickinson, 1995). In this study, the present researcher adopted Little and Holec's definition of learning autonomy. In addition, learners' ELA refers to the learners' abilities to make independent decision, make critical thinking, and learn English independently. In regard to the research on learners' language learning autonomy, some scholars analyzed the autonomy definition and development theoretically (Little, 1991; Holec, 1981); other scholars proposed methods to improve learners' autonomy in the language learning classroom (Macaro, 1997; Little, Ridley & Ushioda, 2002; Lewis & Walker, 2003); researchers also suggested guidance to improve learner's language learning autonomy (Harmer, 2001; Hedge, 2000; Wenden, 1991); Lehrer (1997) and Little (2000) carried out theoretical analysis on factors or reasons of learner's language learning autonomy.

Based on the literature reviews to improve students' ELA in China, the researches on college and university's students' ELA improvement mainly falls in the following three categories. Firstly, the Chinese scholars used a certain kind of teaching pattern or learning methods to improve students' ELA to achieve good results. For example, Bu (2014a) and Zhang (2015)

used reflective teaching pattern to successfully improve 56 and 297 non-English major students' ELA respectively and they found the students' ELA is positively correlated to the critical thinking. For example, in Zhang's study, Pearson correlation analysis test between "the critical thinking and the students' ELA is 0.03 ($p = 0.03 < 0.05$)" (Zhang, 2015, p. 54). Bu (2014b) tried to use cooperative learning method to improve 41 Electronic Science major students' ELA, and found the results of the experiment had significant difference on students' ELA between the experiment and the control students; Xu (2016) adopted humanistic educational teaching approach to try to improve 92 Tourist Management major students' ELA, and the results showed that the students had changed their negative English learning attitudes into positive attitudes and their English learning atmosphere became better than before. Yan (2016) analyzed the features of Socrate's teaching method and stated that it could be used to improve students' ELA because it can trigger students creative thinking.

Secondly, the scholars proposed using some internet-related technical methods to improve students' ELA. For example, Wang and Wu (2016) analyzed the advantages of Longman English Interactive Platform to improve the students' ELA and found that this online teaching platform was used by about 150 universities in China; Li (2016) analyzed the features of mobile learning to improve students' ELA and thought that mobile learning could be adapted to students' different learning style and enhance students' ELA. Li and Li (2016) tried to use the English Fun Dubbing source on the smart phone to carry out the experiment to improve students' ELA and found that the experiment class students were better than the control class on the aspects of self-learning management ability, self-learning action control, and self-learning psychological control.

Thirdly, the scholar studied the effect of teacher's teaching style or role on the students' ELA. For example, Zhou (2016) found that expert and power-controlling teachers have an inhibiting effect on students' ELA ability, while teacher of coordination and authorization could promote students' ELA ability. Lin (2017) carried case study on two students in a foreign English teacher's class found that the foreign English teacher could improve students' ELA because the foreign English teacher has the active, encouraging and student-centered teaching style. Wang (2007) carried out survey and found that teachers who could play the roles of counselors, motivators and trainers had the best effect on enhancing students' ELA, while the teachers whose roles are monitor and evaluator have the least enhancing effect on students' ELA.

The transformative learning theory was proposed by John Mezirow in 1978. After decades of development, transformative learning theory has become a complete learning theory used by scholars over the world in the adult education and the higher education. Mezirow (1991) contends that people's frames of references mainly contain their presuppositions, assumptions, perspectives and beliefs, which are internalized through the socialization and learning, determine people's action, so as to influence their further learning. People have to develop more inclusive and adaptive frames of references in order to properly cope with the problems that they encounter (Mezirow, 1991). In a situation where people's routine methods cannot solve a problem, they can carry out transformative learning by reflecting on the content, the procedure or the premise of the problem to alter their perspectives, values or beliefs and to solve the problems in the end (Mezirow, 1991).

Besides the adults' educational field, the transformative learning theory is also widely used in the higher education by some scholars. For example, Helskog (2014) used transformative

learning in the psychological healing activity and found that the patients could have a better understanding of themselves and others, and they had better relationship with others than before. Harahap (2017) carried out the transformative learning in a teacher institute's Physics major students and found that the students' macro-cognition was improved for they have better understanding about their majors and their major's future application. Mezirow (1991) contends that transformative learning can enhance learners' learning autonomy. However, to the present researcher's knowledge, implementing the transformative learning theory to improve the college or university students' English learning autonomy in China is very scarce. This study intends to show the effect of the TTL on improving the non-English major students in a China's university to provide some references for the other scholars.

Research Method

This study utilized a quantitative study. The research design is shown in Figure 1.

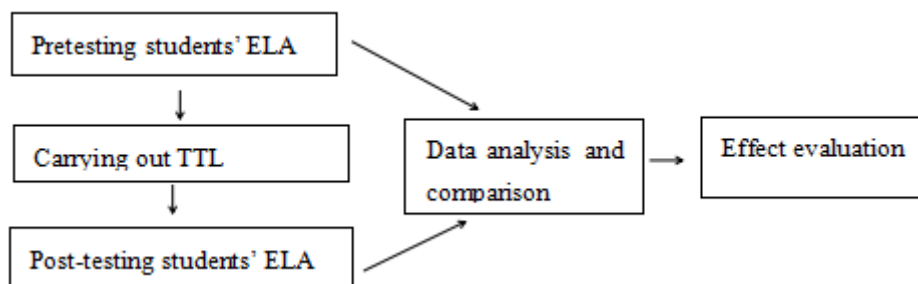


Figure 1: Research Design

There are five steps to carry out the study. First, the study started with pretesting the students' ELA at the beginning of the experiment; second, the TTL was carried out; third, the present researcher post-tested students' ELA at the end of teaching; fourth, the present researcher made data analysis and comparison; fifth, the present researcher made effect evaluation of the study.

In this study, the present researcher utilized the questionnaire of learning autonomy developed by Yang (2006). Yang (2006) tested the validity and the reliability of the questionnaire of learning autonomy and used the questionnaire to successfully test a university students' English learning autonomy. In order to use the questionnaire in the present researcher's teaching situation, the present researcher carried out a pilot study with 50 students as the subjects to verify the questionnaire's reliability and validity using Cronbach alpha coefficient and the factor analysis method, respectively. Table 1 shows the Cronbach alpha coefficient value at 0.962, which is greater than 0.70 ($0.962 > 0.70$). This indicated a high reliability of the questionnaire (Qin, 1999). Table 2 shows the KMO testing value (Kaiser-Meyer-Olkin Measure of Sampling Adequacy) at 0.840; the significance of Bartlett's Test of Sphericity is 0.000, which is smaller than 0.05 ($0.000 < 0.05$). The KMO testing value and the significance of Bartlett's Test of Sphericity indicate the ELA questionnaire has good validity and good mutual relation among the items (Qin, 1999), which can be used in this study.

Table 1: ELA Questionnaire Reliability Test**Reliability Statistics**

Cronbach's Alpha	N of Items
.962	23

Table 2: ELA Questionnaire Validity Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.840
Bartlett's Test of Sphericity	Approx. Chi-Square	1043.173
	df	253
	Sig.	.000

The questionnaire gathers data on five aspects of the students' English learning autonomy:

1. Understanding of teacher's teaching objectives and requests,
2. Setting learning objectives and plans,
3. Application of learning strategies,
4. Supervising their use of learning strategies,
5. Supervising their learning procedure and assessment.

The five aspects of ELA embody students' independent decision-making, critical thinking, and learning English independently. The questionnaire consists of 23 items. Each item is rated using a five-point Likert scale from A to E (A - Totally agree; B - Agree; C - Neutral; D - Disagree; E - Totally disagree).

For the purpose of statistical analysis, the response for each item is assigned with a score: A - 5 points; B - 4 points; C - 3 points; D - 2 points; and E - 1 point. In this way, every item gains a total score in the pretest and post-test. The comparison of means, modes and percentages of modes for each item in the pretest and the post-test determines whether the TTL can improve students' ELA. The effect of the TTL is tested by Wilcoxon Signed Ranks Test to show whether there is a significant difference between the means of the pretest and post-test. Convenient sampling (Saunders, Lewis & Thornhill, 2012) was used to sample the experiment students who come from the present researcher's classes in 2020 Grade cohort. They come from three majors, namely Computer Science and Technology, Educational Technology, and Preschool Education.

Carrying Out the College English Experiment Using TTL

According to Mezirow (1991) the transformative learning has prominent features of the critical reflection and the rational discourse. In the present study, the TTL is a kind of teaching that embodies the main feature of the transformative learning. That is, the teaching regards the critical reflection and the rational discourse as its prominent feature. In order to carry out the TTL, the present researcher built up an equal and friendly classroom teaching atmosphere. The researcher publicly informed the class that there are no absolutely perfect perspectives (beliefs, ideas, attitudes, convictions, assumption, presumption, pre-assumption, predisposition and so on) while doing the English reading exercise. That is to say, no matter what the students' perspectives are, they are acceptable. Teachers and students should not ridicule anybody's perspectives. Of course, the students can have more proper perspectives for them to make a choice while doing the English reading exercises. In this equal and friendly classroom climate, the students can tell what makes them choose the answer, and why, in the non-English major students' English reading course. The TTL intervention lasted for 18 weeks. Except for the normal teaching activities, the critical reflection and rational discourse were carried out in the experiment class, which is illustrated in Table 3.

Table 3: The Outline of Activities Carried out in the TTL

Week	The activities of the TTL besides the normal teaching activity in the reading course
1	Conducting pretest on students' ELA in one period of class.
2-3	Reflecting on the value of College English learning by asking students' opinion on the importance of College English learning.
4-5	Reflecting on students' beliefs or convictions of College English learning by asking students whether they have the beliefs or convictions to learn English well.
6-7	Reflecting on students' attitudes towards College English learning.
8-9	Reflecting on students' application of reading skills or strategies in English reading.
10-11	Conducting rational discourse with students about their overall practice on the reading skill or strategies.
12-13	Reflecting on students' monitoring the effectiveness of their reading skills.
14-15	Reflecting on students' English Learning method by asking how they improve the overall English language ability.
16-17	Conducting rational discourse with students about their overall practice on the comprehensive skills or strategies on learning English.
18	Conducting post-test on students' ELA during one period of class.

After the pretest, the present researcher carried out an experiment of the TTL in the college English reading course. The main feature of the transformative learning of this study is that it implemented Mezirow's (1991) critical reflections and rational discourses to enhance the students' perspective transformation. In the process of the present researcher's English reading teaching, he was always checking the students' assignment. If he found the students made some mistakes that was probably related to their thoughts or perspectives, he would use the Socratic approach (the consistent questioning approach) to trigger students' critical reflection on their mistaken perspectives. In this way, the present researcher could make the students carry out critical reflection on their learning problems that were related to their inaccurate thoughts and perspectives. For example, when the students encountered some advanced words that they did not understand their meaning or parts of speech in their reading passages, the present researcher would ask the students to tell the reasons for the lack of the storage of advanced words in their memory. Some students might say they could not remember the words. Then, the teacher would ask them the reason they could not remember the words. Some students said they did not read English words in the morning. When the present researcher further probed the students with questions, some students said they could not get up early because it was cold. At this time, the present researcher would ask their reason for coming to the English class although it was still very cold. Some students might say because it is important to attend the English class. The present researcher would ask: "Don't you think remembering new words is important for your English learning?" At this point of time, the students would realize that their autonomous remembering new words in the morning is very important for their English learning. If they wanted to learning English well they would insist on remembering new words in the morning. At last, the present researcher would point out that the students cannot get up early to read the English word was only a superficial phenomenon; the deep reason was that they did not realize the value or importance of learning English well, so they loafed away their time while it was the time of learning English.

At this point of time, the present researcher would tell them English was very important for their further learning, (such as, sitting for the postgraduate entrance exam), their future job hunting (such as some vacant positions requiring candidates to have a College English Test Band 4 or Band 6 (CET-4 or CET-6) certificate), and their future professional development (such as doing business with the foreigner or understanding the business information in English). While the students were holding the doubts about the value of learning English, the present researcher would give them some evidence (such as the job-hunting information, the requirement of the enrollment of the postgraduate) to clear off their doubts.

If the students made mistakes of other aspects in English learning, the present researcher would ask questions persistently until the students found out the core reason. This persistent questioning process or the Socratic approach is like peeling an onion until it reaches the very core of the onion. During the course of English teaching, the present researcher also carried out rational discourse with the students to encourage them to learn English. Some students would get enlightened and rationalized the researcher's discourse, which would enhance their perspective transformation and transformative learning in the end.

Findings

The findings of the students' ELA in the pretest and post-test are presented in Tables 4, 5, 6, 7 and 8 below based on the following categories: 1. Understanding teachers' teaching objectives and requirements, 2. Setting the learning objectives and formulating the learning plans, 3.

Using learning strategies, 4. Monitoring the use of learning strategies, and 5. Monitoring and evaluating the English learning process.

Table 4: Understanding Teachers' Teaching Objectives and Requirements

Items	Tests	Means	Mode (Percentage)
1. You can keep up with the teacher in English class.	Pretest	3.27	3 (56.9%)
	Post-test	3.72	4 (72.4%)
2. You understand purposes and requirements of an English teacher.	Pretest	3.13	3 (58.6%)
	Post-test	3.54	4 (56.0%)
3. You understand the intention of the English teacher to adopt certain teaching activities in class to improve the students' language ability.	Pretest	3.02	3 (62.9%)
	Post-test	3.55	4 (59.5%)

Table 4 showed, before the introduction of TTL, the pretest in items 1, 2, and 3 indicated that a majority of the students were “neutral” about keeping up with the teacher in the English class (item 1), understanding purposes and requirements of the English teacher (item 2), and understanding the intention of the English teacher to adopt certain teaching activities in class to improve the students' language ability (item 3), with a percentage of 56.9%, 58.6%, and 62.9%, respectively. The pretest means score for each item is 3.27, 3.13, and 3.02, respectively. The mode is 3 in all the item 1, 2, and 3.

However, after introducing TTL, a majority of the students “agree” that they were able to better understand the teachers' teaching objectives and requirements for all of the above items with a percentage of 72.4%, 56.0%, and 59.5%, respectively. The post-test means score for each item is 3.72, 3.54, and 3.55, respectively. The mode is 4 in all the item 1, 2, and 3.

Compared with the pretest, the post-test differs from the pretest in means and modes. The means of all have increased by 0.45, 0.41, and 0.53, respectively. And the modes in all items above have changed from 3 to 4, indicating that the TTL had an effect on students' ELA. Table 4 shows that the students have improved their understanding of teachers' teaching objectives and requirements after being introduced the teaching of TTL in this study.

Table 5: Setting the Learning Objectives and the Formulation of Learning Plans

Items	Tests	Means	Mode (Percentage)
4. You make your own English study plan.	Pretest	2.99	3 (57.8%)
	Post-test	3.56	4 (64.7%)

5. You will adjust your English learning plan according to the actual situation.	Pretest	3.03	3 (76.7%)
	Post-test	3.57	4 (65.5%)
6. You have your own definite goals for learning English.	Pretest	3.02	3 (72.4%)
	Post-test	3.58	4 (65.5%)
7. You can plan your English study time.	Pretest	2.96	3 (72.4%)
	Post-test	3.65	4 (72.4%)

Table 5 showed, before the introduction of TTL, the pretest in items 4, 5, 6 and 7 indicated that a majority of the students were “neutral” about making their plans in their English learning (item 4), adjusting their learning plans according to the actual situation in their English learning (item 5), having their definite goals in their English learning (item 6), and planning their English time (item 7), with a percentage of 57.8%, 76.7%, 72.4% and 72.4% respectively. The pretest means score for each item is 2.99, 3.03, 3.02, and 2.96, respectively. The mode is 3 in the item 4, 5, 6, and 7.

However, after introducing TTL, a majority of the students “agree” that they were able to set better learning objectives and better learning plans for all of the above items with a percentage of 64.7%, 65.5%, 65.5%, and 72.4%, respectively. The posttest means score for each item is 3.56, 3.57, 3.58, and 3.65, respectively. The mode is 4 in the item 4, 5, 6, and 7.

Compared with the pretest, the post-test differs from the pretest in means and modes. The means all have increased by 0.57, 0.54, 0.56, and 0.69, respectively. And the modes in all items above have changed from 3 to 4, indicating that the TTL had an effect on students’ ELA. Table 5 shows that the students have made progress in setting their own learning objectives and formulating better learning plans through the TTL.

Table 6: Using Learning Strategies

Items	Tests	Means	Mode (Percentage)
8. You understand strategies or methods for learning English.	Pretest	2.92	3 (78.4%)
	Post-test	3.70	4 (74.1%)
9. You will consciously use effective English listening strategies or methods.	Pretest	2.96	3 (81.0%)
	Post-test	3.72	4 (75.0%)
	Pretest	2.96	3 (77.5%)

10. You will consciously use effective communicative English strategies or methods.	Post-test	3.60	4 (69.0%)
11. You will consciously use effective reading strategies or methods in English learning.	Pretest	2.95	3 (69.8%)
	Post-test	3.48	4 (62.2%)
12. You will consciously use effective English writing strategies or methods.	Pretest	2.93	3 (73.3%)
	Post-test	3.55	4 (69.0%)

Table 6 showed, at the beginning of the study, the pretest in items 8, 9, 10, 11, and 12 indicated that a majority of the students were “neutral” about understanding strategies or methods for learning English (item 8), consciously using effective English listening strategies or methods (item 9), consciously use effective communicative English strategies or methods (item 10), consciously using effective reading strategies or methods in English learning (item 11), and consciously using effective English writing strategies or methods (item 12), with a percentage of 78.4%, 81.0%, 77.5%, 69.8%, and 73.3%, respectively. The pretest means score for each item is 2.92, 2.96, 2.96, 2.95, and 2.93, respectively. The mode is 3 in all the item 8, 9, 10, 11 and 12.

However, after introducing TTL, a majority of the students “agree” that they were able to better understand the teachers’ teaching objectives and requirements for all of the above items with a percentage of 74.1%, 75.0%, 69.0%, 62.2% and 69.0%, respectively. The post-test means score for each item is 3.70, 3.72, 3.60, 3.48, and 3.55, respectively. The mode is 4 in all the item 8, 9, 10, 11 and 12.

Compared with the pretest, the post-test differs the pretest in means and modes. The means of all items above have increased by 0.78, 0.76, 0.64, 0.53, and 0.62, respectively. And the modes in all items above have changed from 3 to 4, indicating that the TTL had an effect on students’ ELA. Table 6 shows that TTL has helped students in using better learning strategies.

Table 7: Monitoring the Use of Learning Strategies

Items	Tests	Means	Mode (Percentage)
13. You monitor your communicative strategies or methods in English learning.	Pretest	2.95	3 (66.4%)
	Post-test	3.47	4 (60.3%)
14. You will monitor the English listening strategies or methods you use	Pretest	2.92	3 (61.2%)
	Post-test	3.55	4 (71.6%)
	Pretest	2.97	3 (69.0%)

15. You monitor the English reading strategies or methods you use.	Post-test	3.56	4 (69.0%)
16. You monitor the strategies or methods you use in writing English.	Pretest	2.98	3 (75.0%)
	Post-test	3.60	4 (62.1%)
17. You monitor the English strategies or methods you use.	Pretest	2.94	3 (74.8%)
	Post-test	3.54	4 (67.0%)

Table 7 shows, prior to the introduction of TTL, the pretest in items 13, 14, 15, 16, and 17 indicated that a majority of the students were “neutral” about monitoring their communicative strategies or methods in English learning (item 13), monitoring the English listening strategies or methods they used (item 14), monitoring the English reading strategies or methods they used (item 15), monitor the strategies or methods they used in writing English (item 16), and monitoring the English strategies or methods they used (item 17), with a percentage of 66.4%, 61.2%, 69.0%, 75.0%, and 74.8%, respectively. The pretest means score for each item is 2.95, 2.92, 2.97, 2.98, and 2.94, respectively. The mode is 3 in all the item 13, 14, 15, 16 and 17.

However, after introducing TTL, a majority of the students “agree” that they were able to better understand the teachers’ teaching objectives and requirements for all of the above items with a percentage of 60.3%, 71.6%, 69.0%, 62.1% and 67.0%, respectively. The post-test means score for each item is 3.47, 3.55, 3.56, 3.60, and 3.54, respectively. The mode is 4 in all the item 13, 14, 15, 16 and 17.

Compared with the pretest, the post-test differs the pretest in means and modes. The means of all items above have increased by 0.52, 0.63, 0.59, 0.62, and 0.60, respectively. And the modes in all items above have changed from 3 to 4, indicating that the TTL had an effect on students’ ELA. Table 7 showed that the students became better at monitoring their use or learning strategies after the introduction of TTL.

Table 8: Monitoring and Evaluating the English Learning Process

Items	Tests	Means	Mode (Percentage)
18. You will actively look for opportunities to learn and use English outside of class.	Pretest	2.94	3 (74.1%)
	Post-test	3.53	4 (64.7%)
19. In English learning, you will choose effective ways to improve your English level.	Pretest	3.13	3 (58.6%)
	Post-test	3.53	4 (63.8%)
	Pretest	3.12	3 (61.2%)

20. In English learning, you will apply what you have learned to language practice.	Post-test	3.53	4 (63.8%)
21. In English learning, you collaborate with others.	Pretest	3.13	3 (59.5%)
	Post-test	3.59	4 (65.5%)
22. You will be aware of your mistakes as you learn English.	Pretest	3.13	3 (59.9%)
	Post-test	3.57	4 (63.8%)
23. In English learning, you can be aware of your mistakes, identify the reasons for them, and take steps to correct them.	Pretest	2.99	3 (53.4%)
	Post-test	3.37	4 (49.6%)

Table 8 above showed, at the beginning of the study, the pretest in items 18, 19, 20, 21, 22 and 23 indicated that a majority of the students were “neutral” about actively looking for opportunities to learn and use English outside of class (item 18), choosing effective ways to improve their English level (item 19), applying what they have learned to language practice (item 20), collaborating with others (item 21), being aware of their mistakes as they learn English (item 21), and being aware of their mistakes, identifying the reasons for them, and taking steps to correct them (item 22), with a percentage of 74.1%, 58.6%, 61.2%, 59.5%, 59.9%, and 53.4%, respectively. The pretest means score for each item is 2.94, 3.13, 3.12, 3.13, 3.13, and 2.99, respectively. The mode is 3 in all the item 18, 19, 20, 21, 22, and 23.

However, after introducing TTL, a majority of the students “agree” that they were able to better understand the teachers’ teaching objectives and requirements for all of the above items with a percentage of 64.7%, 63.8%, 63.8%, 65.5%, 63.8%, and 49.6% respectively. The post-test means score for each item is 3.53, 3.53, 3.53, 3.59, 3.57, and 3.37, respectively. The mode of the post-test is 4 in all the item 18, 19, 20, 21, 22, and 23.

Compared with the pretest, the post-test differs from the pretest in means and modes. The means of all the items above have increased 0.59, 0.40, 0.41, 0.46, 0.44, and 0.38, respectively. And the modes in all items above change from 3 to 4, indicating that the TTL had an effect on students’ ELA. Table 8 above shows that the students became better at monitoring and evaluating their English learning process after the introduction of TTL.

In order to show whether there is a significant difference after introducing the TTL in this study, the present researcher has run Wilcoxon Signed Ranks Test to determine whether the difference in means between the pretest and post-test is significantly different. Table 9 shows that the Asymp. Sig. (2-tailed) is 0.000, which smaller than 0.05 ($0.000 < 0.05$), indicating that the means of the post-test and the pretest has significant difference. The descriptive statistics below shows that the means of post-test are significantly better than those of the pretest because the minimum means of the post-test are higher than the maximum means of the pretest.

Table 9: Significance Difference of the Means of the Pretest and Post-test of the Students' ELA

Descriptive Statistics

	N	Mean	Std. Deviation	Minimum	Maximum
Means1	23	3.0148	.09239	2.92	3.27
Means2	23	3.5678	.07880	3.37	3.72

	Means2 - Means1
Z	-4.198a
Asymp. Sig. (2-tailed)	.000

- a. Based on negative ranks
- b. Wilcoxon Signed Ranks Test

Discussion

The discussion includes the pretest and post-test finding discussion and the discussion on teaching factors that foster students' ELA in TTL, which are illustrated below.

Findings Discussion of Pretest and Post-Test

From table 4, 5, 6, 7, and 8, one can see that, before the TTL, a majority of students' ELA fall into "neutral" rank (moderate level) because their modes are 3 in Likert five-rank Scale, which are consistent with Zhang's findings of the investigation in a China university's non-English major students' ELA (Zhang, 2015). From table 4, 5, 6, 7, and 8, one can see that, after carrying out the TTL, a majority of students' ELA fall into "good" rank because their modes are 4 in Likert five-rank Scale, which means that the TTL has improved the students' ELA, which is consistent with Zhang's claimed correlation between the ELA and the critical thinking (or critical reflection), which claimed that the increased critical reflection can enhance the ELA (Zhang, 2015). The improved students' ELA is also consistent with Chen's experiment finding of carrying out reflective teaching in classroom to improve the students' ELA (Chen, 2008).

Equal and Friendly Classroom Atmosphere Enhances Students' Learning Autonomy

In the equal and friendly classroom atmosphere of this study, all the students could have a say if they wanted to state their perspectives while the present researcher asked what made them to choose the answer and explained the reasons, which consistent with the ideas of transmission and communication in democratic education (Dewey, 1997), which means students' and

teachers' ideas can freely be transmitted to each other and the communication between them are also fluent. In Dewey's opinion, building an equal and supportive environment could enhance the students' persistent learning and teachers' teaching. The students' persistent learning is one of the aspects of the students' autonomy, which showed their strong perseverance while learning. In this equal and friendly classroom atmosphere, students felt free to tell what made the students choose one answer instead of other answers and explained the reasons, which gave the present researcher an opportunity to judge whether the students' perspectives are proper or not. This classroom atmosphere encouraged the students to learn without being afraid of making mistake and foster autonomous learning, which is consistent with some scholars' opinions (Dörnyei & Muir, 2019). Yan (2012) also pointed out that teacher built up the trustful, respectful and friendly teaching classroom climate could enhance learner's autonomy.

Socratic Methods Triggers Learner's Reflection, Which in Turn Enhances Students' Consciousness-Raising of Their Mistaken Beliefs or Ideas

In this study, the consistent questioning approach or Socratic approach is evident in transforming students' perspectives because it can raise the students' consciousness of their drawbacks of their beliefs or perspectives. For example, the present researcher used Socratic approach to engage students in the critical reflection, so as to raise the students' awareness of their defects of their inappropriate values of not remembering new words in the morning, which is consistent with other scholars' opinions of using Socratic approach to improve learners' thinking (Nappi, 2017; Hoaglund, 1993). Nappi (2017, p.31) carries out a research on analyzing the importance of questioning to enhance the critical thinking at Rider University in New Jersey university and claims that the questioning of Socratic method can "help students to reflect and therefore improve their thinking and gain a better understanding of their own beliefs and ideas". Because the Socratic method can lead to the critical thinking Hoaglund (1993) contends that Socratic method is always thought as a model of critical thinking. Mezirow (1991) claims that the critical reflection on the adults' ingrained inaccurate perspectives is the requisite of adults' transformative learning because the critical reflection can raise adults' consciousness of the taken-for-granted beliefs or perspectives.

Rational Discourse Builds Positive Student-Teacher Relationship

In the higher education, especially in the fast-developing social environment, it is a fact that there is a social distance between instructors and college (university) students. The present researcher used the rational discourse, which was a caring talk or conversation the teacher had with the students in this study in the hope of transforming the students' inappropriate perspectives and learning methods to help them to improve the teacher-student relationship and realize students' transformative learning, which led to the students' improvement on their ELA in the end. The study's result reveals a fact that a positive teacher-student relationship can enhance students' performance in their studies. This is consistent with some scholars' researches views about the positive teacher-student relationship improving students' learning and motivation (Agyekum, 2019; Yunus, Wan Osman & Ishak, 2011). Agyekum (2019, p. 121) carried out a research about the impact of the teacher-student relationship on the high school student in USA and found "positive teacher-student relationships help students to excel in academics; negative teacher-student relationship promotes significant problems that can affect the student to the highest level." Through research, Yunus, Wan Osman and Ishak (2011) also stated that positive teacher-students relationship not only improved students' learning behavior and motivation but also their academic achievement. Furrer and Skinner (2003) also point out

that positive teacher-student relationships can have great effect on students' academic engagement, which eventually leads to their good learning outcomes. Teachers have good relationships with students claim that their students are more self-directed, cooperative and engaged while they are learning (Birch & Ladd, 1997; Decker, Dona, & Christenson, 2007; Klem & Connell, 2004). The aforementioned scholars' opinions on positive teacher-student relationship support this study's practice to enhance the students' ELA because the students' more self-directed, more engaged and more motivated learning performance is the embodiment of their ELA.

Conclusion

Using the TTL with the features of the critical reflection and the rational discourse on the basis of friendly and equal classroom atmosphere, this study has realized raising the students' consciousness on their mistaken perspectives and the building up a positive teacher-student relationship, which eventually enhanced students' ELA. Of course, the friendly and equal classroom atmosphere itself contributed to the students' ELA. The analysis on the five aspects of the students' ELA showed that every aspect of the students' ELA has made progress by the measurement of means, modes and percentages of modes after students have experienced the TTL. The results of means between the pretest and the post-test also revealed a significant difference for the effect of the TTL. Therefore, the present researcher claimed that implementing the TTL to improve China's university students' ELA attained a good effect in this study. This result again verified Mezirow's (1991) opinion that learners' transformative learning could enhance their autonomous learning.

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