

The Effect of Collaborative Writing Mode of Thinking Visualization on EFL Writing Anxiety of Junior High School Students

Fu Yaqi;
Wen Zhou University, China
874021881@qq.com

Zheng Xiaoli
Wen Zhou University, China
874021881@qq.com

Writing anxiety is one of the stumbling blocks in the writing process of learners. Writing anxiety will lead to poor writing performance of learners. This study explored the effects of visualized collaborative learning platform on EFL writing anxiety. Under the guidance of social constructivism theory, this study aims to explore the influence of English collaborative writing model based on computer supported collaborative learning platform on students' English writing anxiety. In this study, 30 students from a class were selected to participate in the experiment. They learned English as a second language, understood students' writing anxiety through questionnaires and interviews, and evaluated students' writing level through the evaluation of writing texts. The results show that online collaborative learning platform relieves learners' writing anxiety, enhances learners' writing confidence, and promotes learners' writing level. This study not only provides a new research perspective and direction for researchers in this field, but also provides a new teaching model and teaching enlightenment for front-line teachers.

Key words: English writing; Second language anxiety; Writing anxiety; Thinking visualization platform

Introduction

As a symbol, the second language is becoming a diversified and dynamic communication code (Danet 2001). As a second language, English connects people from different countries and regions, and such language symbols make it possible to communicate across countries and regions (Christison and Murray 2014). Based on this, the research on the second language has grown rapidly, and more and more scholars have begun to study the second language education from the perspective of education issues. Among them, second language anxiety has aroused extensive research by scholars (Abdullah, Hussin, & Shakir, 2018; Blasco, 2016; Daud, Daud, & Kassim, 2005). Second language anxiety is defined as the state of anxiety and discomfort in the environment of second language learning, including the tension and fear caused by the environment, which are often generated in the environment of speaking, listening and writing (MacIntyre and Gardner, 1994, p. 284).

Researchers conducted a series of studies to find out what works for writing anxiety. Hyland(2006) found through research that teachers' discourse feedback can not only satisfy students' desire to obtain constructive feedback from teachers, but also alleviate students' anxiety in writing. Aikman and Carol(1985)

believed that changes in teachers' teaching methods could help relieve students' writing anxiety, such as integrating process teaching method into teaching; Make good use of peer evaluation and self-evaluation in writing teaching. Hassan(2001) believes that optimism can alleviate writing anxiety, and teachers' evaluation of students' final works with a positive and optimistic attitude is a key factor to deal with second language writing anxiety. Leki(1990) believes that peer feedback is an excellent way to restore students' confidence, because they express and negotiate their ideas in an area without pressure, which can reduce their writing anxiety in terms of cognitive, physical and avoidance anxiety. Therefore, peer feedback in English writing, as a way of collaborative writing, can effectively relieve writing anxiety.

Empirical studies on English writing anxiety show that individual English writing in an anxious state will affect learners' perception of writing and the improvement of writing performance (Lee,2002; Daly, 1985). In addition, Cheng(2002) found through research that learners are usually accompanied by negative performances such as lack of confidence and self-efficacy. To sum up, English writing anxiety has a deep negative impact on English writing. Considering the negative impact of writing anxiety on the majority of students in the field of second language writing, many researchers are prepared to start from the causes of the problem and try to find out the causes of second language writing anxiety. Through their research, Heaton and Pray (1982) identified several causes of writing anxiety: 1. Limited time to conceive and revise writing. 2. Limited writing skills make it difficult to clarify writing ideas. 3. Teachers lack effective technical guidance for students' writing content, and negative feedback will also cause students' writing anxiety. Bloom (1981) believed that some students pursued perfect writing, and the self-imposed pressure was the cause of writing anxiety. In addition, numerous and frequent writing assignments (Claypool, 1980) and lack of confidence in writing in second language are the main causes of writing anxiety (Cheng, 2002).

Among many studies on anxiety, writing anxiety in the second language (SLWA) is the focus of this study. For a long time, the development of second language education in China has faced many problems, such as; Students lack motivation to write; Lack of high writing level; Most students will quickly enter into the state of writing anxiety once they hear the writing task. Composition as one of the key contents of the English high school entrance examination, the "goal" of most teachers for English writing is "get high marks". In view of this "goal" of teachers, indoctrination writing teaching and mechanical writing teaching have become the main teaching methods of writing class (Chen Liping, 2016). Traditional English writing teaching is not only difficult to relieve students' writing anxiety, but also lacks the cultivation of students' logical reasoning ability and critical thinking ability (Shi Lijia, 2016).

Collaborative learning is a kind of social knowledge construction involving effective communication, such as writing papers, projects and problem-solving activities (Miyake&Kirschner, 2014). In computer-supported learning, collaboration is achieved through technology, which is the tool for creating shared knowledge and understanding (Koschmann, 2002). Online collaborative learning provides second language learners with opportunities for formal and informal practice at any time to improve language quality and fluency (Yim&Warschauer, 2017). In addition, collaborative learning using technology can also build new knowledge, share ideas and improve social skills through language practice and collaborative processes (KukulskaHulme&Viberg, 2017). Therefore, collaborative learning through technology is necessary to carry out education and teaching. Leidner and Jarvenpaa (1995) proved the effectiveness of information technology in the implementation of education and teaching and framed the scope of effectiveness, believing that the effectiveness of technology depends on the degree of support for a

specific learning mode and the applicability of the mode to a specific learning situation. Therefore, in order to make up for the shortcomings of traditional teaching, this study proposes to carry out collaborative English writing teaching with technical support. This paper explores the influence of thinking visualization platform on second language writing anxiety level of Chinese middle school students under the environment of information technology, and provides new teaching thinking and research ideas for front-line teachers and researchers.

Research Questions:

1. What is the status quo of writing anxiety among middle school students in China?
2. Can the thinking visualization platform significantly reduce students' second language writing anxiety?
3. What are the reasons for students' writing anxiety?

Literature Review

Writing anxiety is a long-term feeling state generated when people are in the state of writing, that is, they are not ready to write or are difficult to solve the difficulties in writing. Hjortshoj(2001) pointed out that writing anxiety is a pessimistic emotion facing the current writing task. However, this kind of feeling state is not the general portrayal of most people's writing life, but has the natural situation, that is, the specific anxiety emotion produced in different situation state. Second language writing anxiety is an important part of writing anxiety, and there are different explicit forms of writing anxiety in different disciplines. Most English writing classes tend to cause more anxiety among participants than other writing classes. Because English writing is results-oriented, the writing process needs to arouse participants' positive thinking. In addition, the subjective content of writing output makes students not sure whether they are on the right writing track, which makes students' writing pressure double.

Anxious students can show anxiety in their behaviors, attitudes, and written works. From the perspective of written works, students with writing anxiety often find it difficult to clarify their writing ideas, make more writing mistakes and lack diversity of writing vocabulary (Al-Shboul&Huwari, 2015; Kirmizi&Kirmizi, 2015; Silva, 1993). In addition, more and more scholars have found numerous adverse effects of anxiety through research, and suggest that students should not be exposed to anxiety (Negari & Rezaabadi, 2012). Anxiety will not only hinder the improvement of students' writing skills, but also lead to the decline of students' writing performance.

As for the influence of writing anxiety on writing ability, scholars have drawn conflicting conclusions. Some scholars have found the positive impact of writing anxiety on writing development from a positive perspective, which is mainly reflected in focusing students' writing attention and stimulating students' writing accuracy (Brown, 2007). The state of concentration and the awareness of accuracy in writing are the key to the improvement of students' writing ability and performance (Negari&Rezaabadi, 2012). Therefore, moderate anxiety can improve EFL students' writing ability. Other scholars have found that writing anxiety has a negative impact on writing ability through empirical research. Daly (1978) found through research that anxious writers would use simple writing structures to conceive writing content, and the writing results presented were often of low quality. By comparing the writing quality and writing tasks of students with different anxiety states, Hassan (2001) found that students with low anxiety state showed higher writing level than those with high anxiety state.

Considering the negative impact of writing anxiety on the majority of students in the field of second language writing, many researchers are prepared to start from the causes of the problem and try to find out the causes of second language writing anxiety. Through research, Heaton and Pray (1982) identified several reasons for writing anxiety: 1. Limited time for writing ideas and writing revision. 2. Limited writing skills make it difficult to clarify writing ideas. 3. Teachers lack effective technical guidance for students' writing content, and negative feedback will also cause students' writing anxiety. Bloom (1981) believed that some students pursued perfect writing, and the self-imposed pressure was the cause of writing anxiety. In addition, numerous and frequent writing assignments (Claypool, 1980) and lack of confidence in writing in second language are the main causes of writing anxiety (Cheng, 2002).

The initial research on second language anxiety focused on spoken language, and it was not until the late 1990s that the research focus shifted to second language reading, writing and listening (Cheng et al. 1999, Saito et al. 1999). Schweiker Marra and Marra (2000) conducted an empirical study to explore the effects of the design and implementation of teaching activities before writing on writing anxiety and writing performance of fifth-grade students. The results showed that the students in the experimental group had less anxiety in the writing process because they received writing guidance before writing. Ozturk and Cecen (2007) focused on exploring the influence of portfolio on students' writing anxiety level. The study highlights the importance of portfolio management in English teaching and confirms that portfolio management can help second language learners overcome writing anxiety, and that its benefits will be adopted voluntarily by language teachers as a teaching practice. Fundamentally speaking, researches on writing anxiety in second language mostly focus on exploring the causes of writing anxiety and its impact on writing ability (Liang 2005), as well as the development and use of tools to measure writing anxiety in second language (Cheng, 2004). However, until now, no research has been found on the effect of teaching English writing on second language writing anxiety by using visualized thinking platform.

Research Design and Methods

Research Design

In this study, qualitative and quantitative mixed research methods were used to collect and analyze data, and a single group experiment was used to carry out educational experiment. The pretest variable was writing anxiety, and the posttest variable was English writing anxiety and the causes of English writing anxiety.

Participate

The participants in this study are mainly from the seventh grade students of a middle school in W City, with an average age of 12.34. The total number of participants was 30, including 16 boys and 14 girls. The class is divided into five groups, each with six members. The six members of each group are designated by the teacher according to the students' assessment results, and each group has two excellent students, two average students, and two slightly behind students. Such group composition is more conducive to carrying out group help and communication and collaboration within the group. Participants had been trained in English writing before the experiment and had a certain foundation in English writing. Therefore, this study forms a new writing mode to carry out writing teaching by using the thinking visual collaborative learning platform. Prior to the experimental study, the students had not received any integrated teaching of

critical thinking tendencies.

Measure Instrument

This study uses quantitative and qualitative research methods to analyze the collected data. In order to collect research data, quantitative and qualitative research tools were used. The quantitative research tool used the Second Language Writing Anxiety Scale (SLWAI) to collect data, and the qualitative research used interviews to collect data.

《Second Language Writing Anxiety Scale》

This study used the Foreign Language Writing Anxiety Scale compiled by Cheng(2004) to measure the second language writing anxiety of junior middle school students. The scale consists of three separate components, namely cognitive, physiological and behavioral. The three parts correspond to three independent subscales, namely, the physical anxiety subscale, the avoidance behavior subscale and the cognitive anxiety subscale. There are 22 items in the total table. There were 7 items in the physical anxiety subscale, 7 items in the avoidance behavior subscale and 8 items in the cognitive anxiety subscale. Using the five-point Richter scale, the degree of agreement of each item increased from "strongly disagree" (1 point) to "strongly agree" (5 points). The determined score of each item is 3, which is the average score. If the item is higher than 3, the anxiety level is higher than the average level. If the item is lower than 3, the anxiety level is lower than the average level. The reason why the scale is used as a tool to measure writing anxiety in second language is that correlation and factor analysis proved that the scale is highly reliable and effective.

Interview

This study used the Foreign Language Writing Anxiety Scale compiled by Cheng(2004) to measure the second language writing anxiety of junior middle school students. The scale consists of three separate components, namely cognitive, physiological and behavioral. The three parts correspond to three independent subscales, namely, the physical anxiety subscale, the avoidance behavior subscale and the cognitive anxiety subscale. There are 22 items in the total table. There were 7 items in the physical anxiety subscale, 7 items in the avoidance behavior subscale and 8 items in the cognitive anxiety subscale. Using the five-point Richter scale, the degree of agreement of each item increased from "strongly disagree" (1 point) to "strongly agree" (5 points). The determined score of each item is 3, which is the average score. If the item is higher than 3, the anxiety level is higher than the average level. If the item is lower than 3, the anxiety level is lower than the average level. The reason why the scale is used as a tool to measure writing anxiety in second language is that correlation and factor analysis proved that the scale is highly reliable and effective.

Research Platform

This experiment USES the experimental platform for BroadMix, BroadMix is a browser-based online collaborative whiteboard software, do not need to download software, just login website to enter collaboration whiteboard interface, not only supports multiterminal operating at the same time, also can save real-time, avoid due to accidental factors close platform window thinking gains the loss. The platform focuses on the tools used in classroom teaching, such as documents, mind maps, flow charts, notes, brushes, slides, tables and other tools, providing tool support for group online collaborative learning. At the same time, the classroom management innovation of the platform lies in that teachers can create

multiple discussion groups and arrange students to form discussion groups with 6 members in each group, so that students can speak freely about teaching tasks on the discussion group interface. Discussion group members can communicate ideas not only, still can make many people edit, in order to collect as a result, the discussion of the team's members can use the platform of mind mapping tool to simplify this present discussion points, the team's members on a whiteboard mind mapping within the group established common edit all of the elements, each member of the mouse pointer below with corresponding nickname, You can see other people's edits in real time. Therefore, BoardMix, a free digital real-time collaboration and expression platform, is a good choice for this experiment to carry out teaching.



Figure 1 Working interface diagram of Whiteboard

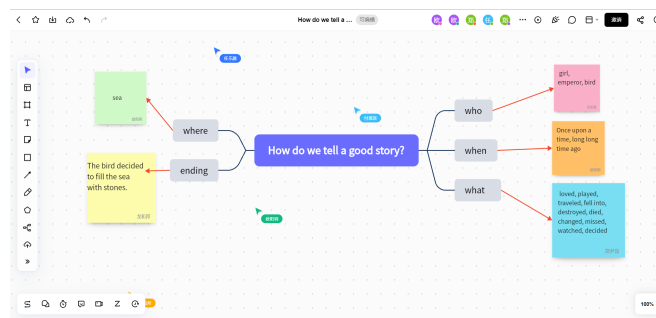


Figure 2 Interactive content display by students using whiteboard 1



Figure 3 Interactive content display by students using whiteboard 2

Data Collection and Analysis Process

The teaching experiment will last for 7 weeks. Before the formal teaching, the teacher explained to the students the matters needing attention in using the scale and required them to fill in the questionnaire truthfully. Each student was required to fill in the pre-test questionnaire within 15 minutes. After the pre-test questionnaire is filled in, the teacher arranges the course and completes the teaching according to the normal teaching schedule. At the end of each teaching experiment, set aside 20 minutes for students to do timed writing. After all the teaching and experimental classes are completed, each student is required to fill in the post-test questionnaire within 15 minutes. Teachers should distinguish high anxiety group, medium anxiety group and low anxiety group, and select 5 students from each of the three groups with different levels for interview and record the interview data in time.

In this study, quantitative and qualitative data analysis methods were used to analyze the data, that is, a mixed study design (Lynch, 1991) was used to verify the data by triangulation. In order to clarify the current level of secondary school students' second language writing anxiety and the causes of second language writing anxiety, SPSS software was used to conduct descriptive statistical analysis of the collected data and paired sample T test. In addition, students at different anxiety levels were interviewed, and the interview data were cross-analyzed to ensure data validity.

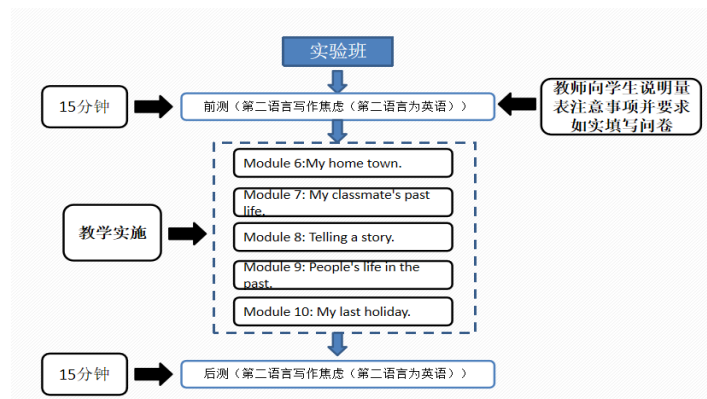


Figure 4 Schematic presentation of experimental steps

Results

Writing Anxiety Level

The first research question aims to explore the current situation of writing anxiety of middle school students. To explore this question, descriptive statistical analysis was conducted to present the mean, maximum, minimum and standard deviation of each item in the pre-test of students' writing anxiety. Table 1 reflects the results of descriptive statistical analysis of each item of pretest writing anxiety.

Table 1

Pre-test results of writing anxiety

	Number	Minimum	Maximum	Mean	SD
CA1	30	2	5	3.07	.740
CA2	30	2	5	3.47	.730
CA3	30	1	4	2.70	.794
CA4	30	2	4	3.20	.714

CA5	30	1	4	2.73	.907
CA6	30	2	5	3.60	.894
CA7	30	2	5	3.27	.868
CA8	30	2	5	3.13	.776
SA1	30	2	5	3.17	.791
SA2	30	2	5	2.83	.913
SA3	30	2	5	3.13	.900
SA4	30	2	4	2.87	.819
SA5	30	1	4	2.50	.777
SA6	30	2	4	2.60	.724
SA7	30	2	5	3.27	.740
AS1	30	2	5	3.37	.765
AS2	30	1	5	3.47	.937
AS3	30	1	5	3.00	.947
AS4	30	1	4	2.93	.907
AS5	30	1	5	2.50	.900
AS6	30	2	4	2.73	.785
AS7	30	2	4	2.70	.596
Number of active cases (column)	30				

The second research question aims to illustrate the effect of technology-supported collaborative writing on second language anxiety. To explore this problem, descriptive statistical analysis was conducted to present the mean, maximum, minimum and standard deviation of each item in the post-test of students' writing anxiety. Table 2 reflects the descriptive statistical analysis results of each item of post-test writing anxiety.

Table 2
Post-test results of writing anxiety

	Number	Minimum	Maximum	Mean	SD
CA1	30	1	4	1.97	.999
CA2	30	1	4	1.80	.961
CA3	30	1	5	1.80	1.095
CA4	30	1	4	2.07	.980
CA5	30	1	4	2.27	1.048
CA6	30	1	5	2.30	1.149
CA7	30	1	5	2.63	1.450
CA8	30	1	5	2.46	1.240
SA1	30	1	5	2.57	1.223
SA2	30	1	5	2.69	1.226
SA3	30	1	5	2.53	1.106

SA4	30	1	4	2.30	1.119
SA5	30	1	5	2.20	.997
SA6	30	1	4	2.20	.887
SA7	30	1	4	1.83	.791
AS1	30	1	4	2.20	1.031
AS2	30	1	5	2.07	1.081
AS3	30	1	4	2.07	.980
AS4	30	1	5	2.37	1.129
AS5	30	1	5	2.37	1.066
AS6	30	1	5	2.43	.935
AS7	30	1	5	2.73	.980
Num	30				
ber of					
active					
cases					
(column)					

To identify the dominant type of writing anxiety, the average and percentage of each dimension were calculated. The type with the highest score was defined as the dominant type of writing anxiety. The average value and percentage of each dimension of writing anxiety are shown in Table 3. The results showed that the highest average writing anxiety type was cognitive anxiety (M=25.1), followed by avoidance strategy (M=20.63), and the lowest average body anxiety (M=20.03). Therefore, the dominant type of writing anxiety is cognitive strategy.

Table 3
Pretest scores and classification of high, medium and low levels

	Num ber	Mean	Overall score	Percentage
Cognitive anxiety	30	25.1	753	22.8%
Somatic anxiety	30	20.03	601	18.2%
Avoidance strategy	30	20.63	619	18.7%
Total	30			

As can be seen from the data in Table 4, the average scores of the pretest and posttest of the three dimensions of writing anxiety: cognitive anxiety, somatic anxiety and avoidance strategy were different at the level of.05 ($P < 0.05$). This indicates that there is a significant statistical difference in students' writing anxiety level before and after the teaching experiment.

Table 4
Paired sample t-test analysis of writing anxiety before and after experimental teaching

Types of tests	Mean	Std. Deviation	Df	t	P
CA pre-test - CA post-test 0	7.900	5.579	29	7.756	0.000
SA pre-test - SA post-test 0	3.700	5.766	29	3.514	0.001
AS pre-test - AS post-test 0	4.400	5.751	29	4.190	0.000

*p<0.05

Interview Results

Semi-structured interviews were conducted with 15 students (5 students from high anxiety group, medium anxiety group and low anxiety group respectively) from the following perspectives. The interview angles are as follows: 1) Insufficient knowledge of writing grammar. 2) Not enough time for writing practice. 3) Unable to clarify writing ideas and organize writing content. 4) Inner dread of writing tests. 5) Worry about negative comments from teachers. 6) Lack of interest in writing. Ask students to think carefully about their difficulties in writing in the second language.

Table 5

Factors of writing anxiety of students in the high, medium and low anxiety groups

	High anxiety level	Middle anxiety level	Low anxiety level
Inadequate knowledge of writing grammar	5	3	1
Not enough time for writing practice	4	2	1
Unable to clarify writing ideas and organize writing content	5	2	2
Inner fear of a writing test	5	2	1
Worry about negative comments from teachers	4	3	2
Lack of interest in writing	4	3	2

The data obtained from the interview shows that the main reasons for the writing anxiety of the interviewed students, especially those in the high anxiety group, are lack of writing grammar knowledge and low writing ability. Students in the high anxiety group made the following statements about these reasons:

- "I have a lot of ideas about what I want to write about, but there are too many and too many ideas. I don't know how to organize my words, and I don't know how to express my ideas in English."

- "MY basic knowledge of English writing is not solid, and THERE are many grammar mistakes in English writing, which leads to many problems in My English writing."

Secondly, students are afraid of teachers' negative comments and writing tests. Teachers' feedback has a great influence on students, and different feedback contents will bring different reactions to students. This can be reflected through the interview information of students in the high anxiety group:

- "The teacher's feedback had a big impact on me. If the teacher gives me positive and encouraging comments, I will be more confident in my English writing. However, if a teacher gives a lot of negative comments about my writing, I will be afraid of losing information about my English writing.

- "I study very hard before a writing test, but I still have a fear of the writing test. During the writing test, I couldn't perform well because of my fear.

Other reasons for writing anxiety were also revealed through interviews with students. For example: not enough time for writing practice; Lack of interest in writing. The students in the high anxiety group explained the above two reasons in this way.

- "Although I have a keen interest in English writing, I don't have enough time to practice it. For this reason, WHEN I write, I feel that my writing ability is low due to lack of practice, and I cannot complete my writing tasks."

- "I'm not interested in English writing."

It can be seen from the interview results that students' anxiety in second language writing is due to their poor grasp of basic Knowledge of English writing. Not interested in English writing; Overly concerned about teachers' negative evaluation of students' writing content and afraid of writing tests.

Discussion

In the teaching process of English writing using the visualized thinking platform, peer communication and peer feedback among group members run through students' learning. From the experimental teaching results, peer feedback can positively affect writing teaching. The experimental results confirm the findings of Tudor (1996), Topping (2000), Simsek (1993), Damon and Phelps (1989). They asked the students in each group to check each other's writing and give feedback to each other, and to correct their own writing by absorbing feedback.

In addition to emphasizing the positive emotional impact peer feedback can provide, most students can also see the educational and supportive effects of peer feedback and collaborative communication. After class, I learned from the feedback of students that they improved their writing content after accepting the advice of their peers. This result also corresponds to the results of Berg (1999), Kurt and Atay (2007), Villamil and De Guerrero (1996). They believe that peer communication and discussion can create a relaxed and pleasant learning environment, can reduce the anxiety and stress of the learning environment, and can communicate, collaborate and make suggestions in a non-judgmental environment. Therefore, using the visualized thinking platform to teach English writing can create a relaxed and pleasant atmosphere in which students can reduce tension and pressure. When writing, the classroom climate requires students to cooperate in giving and receiving feedback, which enables them to learn from each other, as studied by Tudor (1996), Topping (2000), Bartels (2003). Learning using collaborative learning platforms is supportive and educational, as evidenced by experimental data results and positive student feedback on product use.

To a certain extent, writing anxiety can be defined as a disease, and the occurrence of writing anxiety can be avoided by finding the cause of the disease and taking appropriate medicine. Therefore, teachers and students should deeply analyze the causes of anxiety and take corresponding measures to eliminate the potential consequences of writing anxiety.

Writing is considered to be a difficult skill to master in English learning (Blasco, 2016; Daud, Daud & Kassim, 2005; Kurt & Atay, 2007; Latiff, 2007). Therefore, it is necessary for students to spend enough time on writing practice. The important task for teachers is to reduce students' anxiety levels. Studies have shown that the lower the level of anxiety, the more relaxed students are able to write high-quality content (Stewart, Seifert; Rolheiser, 2015; Hassan, 2001). At the same time, lower anxiety level can also help students relax (Blasco, 2016; Daud, Daud and Kassim, 2005; Rahim, Jaganathan & Mahadi, 2016). Therefore, teachers should treat students with writing anxiety from the internal and external reasons, in-depth analysis of the causes of anxiety and take measures to solve them.

Conclusion

According to the experimental data, experimental teaching effect and feedback results of students' interviews, writing teaching with technical support can reduce students' writing anxiety and increase their confidence in writing learning. But students can use the thinking visualization platform to carry out collaborative learning and collaborative communication. In this process, the use of mutual communication and cooperation to improve the writing level of group members, reduce writing anxiety.

Collaborative writing learning using the thinking visualization platform can strengthen the interaction and collaboration between students, so that students who are shy to express themselves in class can use online learning to express themselves freely and carry out interactive communication. In this way, it can not only provide a relaxed learning environment to reduce learners' writing anxiety, but also improve their writing level through knowledge sharing among students.

The pre-test and post-test data also showed that the level of writing anxiety of learners decreased significantly after the teaching experiment, and more and more students regained their confidence in English writing. Therefore, it can be shown that using visualized thinking platform to carry out writing teaching in writing class can effectively reduce students' writing anxiety level.

References

- Abdullah, M. Y., Hussin, S., & Shakir, M. (2018). The Effect of peers' and teacher's feedback on writing anxiety level through CMC applications. *International Journal of Emerging Technologies in Learning (IJET)*, 13(11), 196-207. doi: 10.3991/ijet.v13i11.8448.
- Aitman, C. (1985). *Writing Anxiety-Barrier to Success*. Indiana, US, (ERIC Document Reproductive Service No. ED 262 191).
- Bartels, N. (2003). Written peer response in L2 writing. *English Teaching Forum*, 41(1), 34-37.
- Belland, B. R. (2008). *Supporting middle school students' construction of evidence-based arguments: Impact of and student interactions with computer-based argumentation scaffolds* (Ph.D. Dissertation).Purdue University, West Lafayette, IN. Retrieved from ProQuest Dissertations & Theses Full Text. (Publication No. 304502316).
- Blasco, J. A. (2016). The relationship between writing anxiety, writing self-efficacy, and Spanish EFL students' use of metacognitive writing strategies: A case study. *Journal of English Studies*, 14, 7-45. doi: 10.18172/jes.3069.
- Bloom, L. (1981). *Why graduate students can't write: Implications of research on*

- writing anxiety for graduate education. *Journal of Advanced Composition*, 2, 1-2.
- Boblett, N. (2012). Scaffolding: Defining the Metaphor. Teachers College, Columbia University Working Papers in TESOL & Applied Linguistics, 12(2), 1–16.
- Brown, A. L., Ash, D., Rutherford, M., Nakagawa, K., Gordon, A., & Campione, J. C. (1993). Distributed expertise in the classroom. In G. Salomon (Ed.), *Distributed cognition: Psychological and educational considerations* (pp. 188–228). Cambridge University Press.
- Cheng, Y. S. (2002). Factors associated with foreign language writing anxiety. *Foreign Language Annuals*, 35(5), 647-56.
- Cheng (2004) ‘A Measure of Second Language Writing Anxiety: Scale Development and Preliminary Validation’, *Journal of Second Language Writing* 13(4): 33-35.
- Christison, M., & Murray, D. E. (2014). *What English language teachers need to know: Volume 3*. New York: Routledge: Designing Curriculum.
- Chua S., Chen D., & Wong A. (1999). Computer Anxiety and Its Correlates: A Meta-Analysis. *Computer in Human Behavior*, (15) : 609-623
- Claypool, S. H. (1980). Teacher writing apprehension: Does it affect writing assignments across curriculum? (ERIC Document Reproduction Service No: ED 216 387).
- Damon, W., & Phelps, E. (1989). Strategic uses of peer learning in children’s education. In Ladd, G.W., & Berndt T. J. (Eds.), *Peer relationship in child development* (pp. 135-156). USA: John Wiley & Sons.
- Danet, B. (2001). *Cyberpl@y: Communicating online*. Oxford: Berg Publishers.
- Daud, N. S. M., Daud, N. M., & Kassim, N. L. A. (2005). Second language writing anxiety: Cause or effect? *Malaysian Journal of ELT Research (MaJER)*, 1(1), 1-19.
- Gordon, M. (2009). Toward a pragmatic discourse of constructivism: Reflections on lessons from practice. *Educational Studies*, 45(1), 39-58.
- Hannafin, M., Land, S., & Oliver, K. (1999). Open-ended learning environments: Foundations, methods, and models. In C. M. Reigeluth (Ed.), *Instructional design theories and models* (Vol. II, pp. 115–140). A new paradigm of instructional theory Mahwah, NJ: Lawrence Erlbaum.
- Hassan, B. A. (2001). The relationship of writing apprehension and self-esteem to the writing quality and quantity of EFL University students. *Mansoura Faculty of Education Journal*.
- Heaton, H., & Pray, P. (1982). Writing anxiety: Reasons and reduction techniques. *Wisconsin English Journal*, 24(3), 2-7.
- Jonassen, D. H. (2000). Toward a design theory of problem solving. *Educational Technology Research and Development*, 48(4), 63–85. doi:10.1007/BF02300500.
- Koschmann, T. (2002). Dewey's contribution to the foundations of CSCL research. In G. Stahl (Ed.), *Proceedings of CSCL 2002* (pp. 17–22). Boulder, Colorado: International Society of the Learning Science
- Kukulka-Hulme, A., & Viberg, O. (2017). Mobile collaborative language learning: State of the art. *British Journal of Educational Technology*, 49, 207–218.
- Kurt, G., & Atay, D. (2007). The effects of peer feedback on the writing anxiety of prospective Turkish teachers of EFL. *Journal of Theory and Practice in Education*, 3(1), 12-23.
- Leki, I. (1990). Potential problems with peer responding in ESL writing classroom. *CATESOL Journal*, 3, 5-17.
- Lantolf, J. P., & Aljaafreh, A. (1996). Second language learning in the zone of proximal development: A revolutionary experience. *International Journal of Educational Research*, 23, 619-632.
- Leidner, D. E., & Jarvenpaa, S. L. (1995). The use of information technology to enhance management

- school education: a theoretical view. *MIS Quarterly*, 26 5–291.
- Lewis, A., & Atzert, S. (2000). Dealing with computer-related anxiety in the project-oriented CALL classroom. *Computer Assisted Language Learning*, 13(4-5):377-395.
- Lynch, T. (1991). Questioning roles in the classroom. *EFL Journal*, 45(3), 201-209.
- Matsuda, P. K. (2003). “Second language writing in the twentieth century: a situated historical perspective,” in *Exploring the Dynamics Of Second Language Writing*, ed B. Kroll (Cambridge, UK: Cambridge Applied Linguistics), 15 - 34.
- Miyake, N., & Kirschner, P. (2014). The social and interactive dimensions in collaborative learning. In R. K. Sawyer (Ed.), *The Cambridge handbook of learning sciences* (pp. 418 - 438). New York, NY: Cambridge University Press
- Powell, K. C., & Kalina, C. (2010). Cognitive and social constructivism: Developing tools for an effective classroom. *Education*, 130(2), 241-250.
- Reiser, B. J. (2004). Scaffolding complex learning: The mechanisms of structuring and problematizing student work. *Journal of the Learning Sciences*, 13(3), 273–304. [https:// doi. org/ 10. 1207/ s15327809j ls1303_2](https://doi.org/10.1207/s15327809jls1303_2)
- Simsek, A. (1993). The effects of learning control and group composition on student performance, interaction, and attitudes during computer based cooperative learning. Unpublished doctoral dissertation, University of Minnesota, Twin Cities.
- Smith, B., & Caputi, P. (2007). Cognitive interference model of computer anxiety: Implications for computer-based assessment. *Computers in Human Behavior*. Vol 23(3):1481-1498.
- Topping, K. J. (2000). *Peer assisted learning: A practical guide for teachers*. Cambridge, MA: Brookline Books.
- Tudor, I. (1996). *Learner-centeredness as a Language Education*. Cambridge: Cambridge University Press.
- Villamil, O. S., & de Guerrero, M. C. M. (1996). Peer revision in the L2 classroom: Social-cognitive activities, mediating strategies, and aspects of social behavior. *Journal of Second Language Writing*, 5(1), 51-75.
- Yim, S., & Warschauer, M. (2017). Web-based collaborative writing in L2 contexts: Methodological insights from text mining. *Language Learning & Technology*, 21, 146 - 165.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wood, D., Bruner, J. S., & Ross, G. (1976). The role of tutoring in problem solving. *Journal of Child Psychology and Psychiatry*, 17(2), 89–100. doi:10.1111/j.1469-7610.1976.tb00381.x.
- Woolfolk, A. (2011). *Educational psychology* (11th ed.). Boston, MA: Pearson.
- Zheng, Y. (2008). Anxiety and second/foreign language. *Learn. Revisited* 1, 1 - 12.
- Özbay, M. (2006). *Özel Öğretim Yöntemleri I [Special Teaching Methods I]*. Ankara: Öncü Kitap.
- 陈丽萍. 高中英语写作教学的现状及对策分析[J]. 开封教育学院学报, 2016, 36(11):246-247.
- 石丽佳. 英语写作教学现状调查与分析[J]. 校园英语, 2016(05):99.
- 章国英, 胡继岳. (2004). 网络环境下学习评价策略的探讨. *外语电化教学*, (2):26-29