The Impact of Writing Techniques for Educational Purposes in Foreign Language Instruction On Students' Academic Performance and Self-Efficacy

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Abstract

This study examined the impact of writing-for-learning techniques in foreign language instruction on the academic achievement and self-efficacy of 10th grade students. The research employed a quantitative design and utilized a quasi-experimental design with an unequal control group. Research data were collected using the multiple-choice "Simple Past Tense Achievement Test" and the "English Self-Efficacy Belief Scale". Following the application of the writing-for-learning technique to the students in the experimental group, the posttest revealed a significant difference in the students' achievements, in favor of the experimental group. However, there was no significant difference in the results of the self-efficacy scale.

Keywords: Writing for learning purposes, letter writing, academic achievement, self-efficacy, English as a foreign language.

1. Introduction

According to Erişek and Yücel (2002), learning a foreign language is one of the simplest ways to break through local cultural boundaries and embrace universal culture. Increasing relations between states and societies in areas such as politics, military, trade, science, education, culture, and tourism, and rapid developments in information and communication technologies require people to learn and use languages commonly used in international communication other than their mother tongue (Günday, 2015).

Given this necessity, advances in the fields of linguistics, psychology, and pedagogy inspire some methods and approaches used in foreign language teaching, while changes in daily social life and technological developments influence others (Günday, 2015). Experts from Turkey and Europe have adopted the following methods: the grammar-translation method, the direct method, the ear-language habit method, the cognitive learning approach, the natural method, the communicative approach, and the selective method (Demirel, 2016). Furthermore, Larsen-Freeman (2000) identified various methods and approaches, including the silent way method, suggestopedia method, communicative language teaching method, physical response method, and task-based, content-based, and participatory approaches. Updated curriculum programs also highlight the use of contemporary teaching methods instead of traditional ones in educating individuals. (Ministry of National Education (MoNE), 2018).

Writing for learning is also considered a student-centered technique. Various studies in the literature have demonstrated the importance of reading and writing skills for student

success. (Uzun, 2011; Uzun and Alev, 2013; Norris and Phillips, 2002). Writing not only fosters basic skills but also plays a crucial role in retaining information in the mind. Writing activities make abilities such as thinking, creating new ideas, associating ideas with other ideas, and remembering and learning easier for individuals (Tarikdaroğlu and Akar, 2022). The technique is expected to enhance students' learning skills by helping them organize information.

This study highlights the significance of incorporating the writing for learning technique into foreign language teaching, as it offers a fresh perspective on the literature. As a result of the research, the effect of the writing technique for learning purposes on learning will be revealed, and it will be revealed that it will be beneficial for course teachers to use this technique in their lessons. In addition, textbook authors will be able to benefit from the ideas and activities found in this study while organizing writing activities.

Features such as motivation, attitude, and self-efficacy are as important as the cognitive domain in achieving the goals of foreign language teaching programs. Studies on self-efficacy beliefs generally reveal a positive relationship between these beliefs and success (Yanar and Bümen, 2012). Studies on self-efficacy reveal that individual learning English may believe they can read but not speak, or they may believe they can speak English but not create correct syntax (Templin, Guile, and Okuma, 2001, p. 4).

The literature has not previously examined the effect of letter writing, a writing technique for learning purposes, on students' self-efficacy beliefs. In this respect, it is also important to investigate the effect of the technique on students' writing self-efficacy beliefs. The primary research question is, "Is there a significant difference in the academic success and English self-efficacy of 10th grade students who use letter writing as a learning technique in foreign language teaching, compared to those who do not engage in this activity?"

Sub-Problems of the Research

1. Do the experimental and control groups differ significantly in their pre-instruction Simple Past Tense achievement test scores?

2. Are there statistically significant differences between the post-instruction Simple Past Tense achievement test scores of the experimental and control groups?

3. Is there a meaningful change in the Simple Past Tense achievement test scores of the experimental group when comparing pre- and post-instruction results?

4. Do the experimental and control groups show any significant differences in their pre-instruction English Self-Efficacy Belief Scale scores?

5. Are there significant differences between the experimental and control groups' English Self-Efficacy Belief Scale scores following the instruction?

6. Is there a significant difference between the experimental group students' English Self-Efficacy Belief Scale scores before and after the instruction?

2. Method

The research process in this study followed the unequal control group model, a quasi-experimental design. The model does not make any special effort to equalize the groups determined through impartial assignment. However, care was taken to ensure that the participants had similar qualifications as much as possible. Additionally, an unbiased selection determines which of these will be the experimental group and which will be the control group (Karasar, 2015, p. 102). According to the model, two of the three 10th grade classes were randomly assigned as the experimental groups and one as the control group. The

study administered the Simple Past Tense Achievement Test and the English Self-Efficacy Belief Scale to all three groups prior to instruction. Next, the experimental group students participated in English lessons using a letter writing activity as a learning technique, while the control group students followed the English lesson curriculum and textbook. Following the instruction, the Simple Past Tense Achievement Test and the English Self-Efficacy Belief Scale were applied to all three groups.

The study was designed according to the pretest/posttest control group model. In this model, the experimental group was administered a pretest, exposed to the independent variable -the writing technique for learning- and then given a posttest. The control group was also administered the same pre- and posttests but did not receive the independent variable. Within the design, “X” represents the independent variable, while “O” denotes the measurements (achievement test and English Self-Efficacy Belief Scale). This structure made it possible to assess the effect of the writing technique for learning through both intergroup and intragroup comparisons.

Study Group

Participants consist of a total of 70 students, 38 girls (54.3%) and 32 boys (45.7%), studying in the 10th grade in 2017-2018 at a secondary education institution in Bolvadin district of Afyonkarahisar province. The Common European Language Criteria determines six language levels. These are A1-A2-B1-B2-C1-C2. Students in the 10th grade at this secondary education institution are currently at the B2 level. They also had the preparatory class. A foreign language learner at the B2 language level can explain the positive/negative aspects of any subject, explain the causes and consequences of an event, express his/her own opinion, and make comments (Pillieux, 2005, cited in Ada and Şahenk, 2010).

Data Collection Tools

Since the aim of the research is to examine the effect of writing as a learning technique on students' academic success and self-efficacy in English lessons, the data collection tools were chosen accordingly. Circi (2016) developed the multiple-choice "Simple Past Tense Achievement Test" to measure the students' success. The test consists of 25 questions. The test is multiple choice, and one option is the correct answer. The reliability coefficient of this test (KR 20) is.902. Yanar and Bümen (2012) developed the 5-point Likert type “English Self-Efficacy Belief Scale” to collect self-efficacy belief data. This scale has four subscales. There are a total of 34 items in the scale, which consists of 8 items in the reading dimension, 10 items in the writing dimension, 10 items in the listening dimension, and 6 items in the speaking dimension. The Cronbach's alpha value of the scale is α =.97. In this study, the Cronbach's alpha value of the scale is α =.925.

Instructional Process

The instructional process for the research spanned a total of eight weeks. The topic was taught to 10th grade students for six weeks. Pretests were administered to all groups at the same time in the first week. Students in the experimental group were informed about the importance of writing for learning purposes and provided them with examples of letter writing. The researcher, who was also the school's English teacher, explained the topics to the students in the experimental group and then wrote a letter for the 9th grade students about the subject, while the control group students learned the lesson through activities from the textbook. The English teacher of the school (the researcher), conducted the lessons during the process. The secondary school 10th grade English curriculum examines the subject of Simple Past Tense over 3 units (MoNE, 2017). The researcher taught the simple past tense topic in

accordance with the curriculum. Posttests were administered to all groups simultaneously in the eighth week. Table 1 provides a detailed explanation of the instructional process.

Table 1. Instructional process

TIME	Experimental group	Control Group
1st Week	Application of Preliminary Tests	Application of Preliminary Tests
2nd Week	Teaching the use of Simple Past Tense auxiliary verbs and regular verbs in Simple Past Tense 1st Letter writing activity	Teaching the use of Simple Past Tense auxiliary verbs and regular verbs in Simple Past Tense Activities in the textbook
3rd Week	Teaching Simple Past Tense affirmative, negative, question patterns and irregular verbs	Teaching Simple Past Tense affirmative, negative, question patterns and irregular verbs
4th Week	Teaching the usage areas of Simple Past Tense 2nd Letter writing activity	Teaching the usage areas of Simple Past Tense Activities in the textbook
5th Week	Teaching to express past habits using Simple Past Tense 3rd Letter writing activity	Teaching to express past habits using Simple Past Tense Activities in the textbook
6th Week	Teaching time adverbs of Simple Past Tense	Teaching time adverbs of Simple Past Tense
7th Week	4th Letter writing activity	Activities in the textbook
8th Week	Application of Posttests	Application of Posttests

Analysis of Data

Prior to analysis, the normality of the data was examined using the Shapiro–Wilk and Kolmogorov–Smirnov tests, as well as skewness and kurtosis values (Büyüköztürk, 2015). Since the Simple Past Tense Achievement Test scores did not meet the assumption of normality, non-parametric techniques were employed. The Kruskal–Wallis test was used to compare group differences, and where significant results emerged, pairwise comparisons were performed with the Mann–Whitney U test (Gürbüz & Şahin, 2016).

For the English Self-Efficacy Belief Scale, which showed normal distribution, parametric analyses were preferred. Group comparisons were carried out through one-way ANOVA, while pre- and posttest scores of the experimental group were examined with paired samples t-tests. All analyses were conducted at the .05 significance level.

3. Findings

An examination was conducted to determine if the academic achievement test scores of the experimental group and control groups before instruction differed significantly. Before the problem was looked into, Table 3 shows the results of the normality test that was done to see if the test scores of the experimental groups and the control group were normally distributed. Experimental Group 1 (EG1), Experimental Group 2 (EG2), and the Control Group (CG) are used as abbreviations in the tables. Normality analyses showed that the pretest achievement scores were not normally distributed; therefore, a Kruskal–Wallis test was conducted, and the results are presented in Table 2.

Table 2. Kruskal–Wallis results for pretest achievement scores

	Group	N	Rank Average	df	Chi-Square	p
Simple Past Tense Pretest	**EG1**	25	35,20	2	1,593	,451
	EG2	23	39,39			
	CG	22	31,77			

When Table 2 was examined, no significant difference was found between the pretest scores of the experimental and control group students. In other words, the students' knowledge levels about the simple past tense subject in English are equivalent.

It was examined whether there was a significant difference between the academic achievement test scores administered to the experimental group and control groups after the instruction. Before the analysis of the problem, the results of the normality test performed to determine whether the academic achievement test scores of the experimental group and the control group were normally distributed. As the posttest achievement scores also did not meet the assumption of normality, the Kruskal–Wallis test was again used, with the results shown in Table 3.

Table 3. Kruskal–Wallis results for posttest achievement scores

	Group	N	Rank Average	df	Chi-Square	p
Simple Past Tense Posttest	**EG1**	25	40,26	2	7,004	,030*
	EG2	23	39,35			
	CG	22	26,07			

* p < ,05

The results of the "Simple Past Tense Achievement Test" applied after the instruction was analyzed using Kruskal Wallis test analysis. Accordingly, with reference to the multiple-choice posttest scores, it was determined that there was a significant difference between the success scores of the experimental and control groups at the p<0.05 significance level. The Kruskal Wallis test does not tell in which groups there are differences. This situation can only be determined by pairwise comparisons (Gürbüz and Şahin, 2016). Mann-Whitney U Test was used for this and the results are shown in table 4.

Table 4. Mann–Whitney U results for posttest achievement scores

Group	N	Rank Average	Rank Sum	U	p
EG1-CG	25/22	28,48/19,91	712,00/416,00	163,00	,016*
EG2-CG	23/22	27,15/18,66	624,50/410,50		
EG1-EG2	25/23	24,78/24,20	619,50/556,50	280,50	,884

* p < ,05

When Table 4 was examined, there is a significant difference between experimental group 1 and the control group, as well as between experimental group 2 and the control group, but no significant difference was found between experimental group 1 and experimental group 2. Considering the rank averages, it is understood that the success scores of the experimental group students who participated in the letter writing activity, one of the writing techniques for learning purposes, were higher than the control group students. This finding shows that the letter writing activity is effective in increasing students' academic success.

It was tried to determine whether there was a significant difference between the scores of the English Self-Efficacy Belief Scale applied to the experimental and control groups before teaching. Before the analysis of the problem, the results of the normality test performed to determine whether the scores obtained from the English Self-Efficacy Belief Scale administered to the experimental and control groups before teaching were distributed normally. The normality tests indicated that the pretest self-efficacy scores were normally distributed, allowing for the use of one-way ANOVA, the results of which are presented in Table 5.

Table 5. ANOVA results for pretest self-efficacy scores

Sub-Skill	Source of Variance	Sum of Squares	df	Mean of squares	F	p
Reading	Inter-Groups	,347	2	,173	,230	,795
	Within Groups	50,470	67	,751		
	Total	50,817	69			
Writing	Inter-Groups	1,442	2	,721	,934	,398
	Within Groups	51,724	67	,772		

	Total	53,166	69			
Listening	Inter-Groups	1,770	2	,885	1,447	,242
	Within Groups	40,980	67	,612		
	Total	42,751	69			
Speaking	Inter-Groups	1,065	2	,532	,547	,582
	Within Groups	65,267	67	,974		
	Total	66,332	69			

When Table 5 was examined, no significant difference was found between the scores of the experimental and control group students on the English Self-Efficacy Belief Scale before the instruction. In other words, students' self-efficacy belief levels regarding English are equivalent.

It was examined whether there was a significant difference between the scores of the English self-efficacy belief scale administered to the experimental and control groups after the instruction. Before the analysis of the problem, the results of the normality test performed to determine whether the scores obtained from the English self-efficacy belief scale administered to the experimental and control groups after teaching were distributed normally. Posttest self-efficacy scores were likewise normally distributed, and thus one-way ANOVA was performed; the findings are given in Table 6.

Table 6. ANOVA results for posttest self-efficacy scores

Sub-Skill	Source of Variance	Sum of Squares	df	Mean of Squares	F	p
Reading	Inter-Groups	,448	2	,224	,361	,698
	Within Groups	41,556	67	,620		
	Total	42,005	69			
Writing	Inter-Groups	1,392	2	,696	1,017	,367
	Within Groups	45,849	67	,684		
	Total	47,241	69			
Listening	Inter-Groups	1,984	2	,992	1,645	,201
	Within Groups	40,405	67	,603		
	Total	42,389	69			
Speaking	Inter-Groups	1,709	2	,885	1,089	,342
	Within Groups	52,586	67	,785		
	Total	54,296	69			

When Table 6 was examined, no significant difference was found between the scores of the experimental and control group students on the English Self-Efficacy Belief Scale after the instruction. There was no difference in the students' English self-efficacy belief levels after the instruction.

It was examined whether there was a significant difference between the scores of the English Self-Efficacy Belief Scale applied before and after the teaching to the experimental group students, who were given letter writing activity. Before the analysis of the problem, the results of the normality test performed to determine whether the experimental group's achievement scores from the English Self-Efficacy Belief Scale were normally distributed. The normality assumption was also met for the experimental group's self-efficacy pre- and posttest scores, permitting the use of paired samples t-test. The results are provided in Table 7.

Table 7. Paired samples t-test results for experimental group self-efficacy scores

Sub-Skill	Tests	N	M	SD	df	t	p
Reading	Pretest	48	3,13	,882	47	-1,087	,283
	Posttest	48	3,30	,788			
Writing	Pretest	48	2,87	,839	47	-,479	,634
	Posttest	48	2,95	,823			

Listening	Pretest	48	3,11	,803	47	-,259	,797
	Posttest	48	3,15	,764			
Speaking	Pretest	48	2,92	1,01	47	,326	,746
	Posttest	48	2,86	,920			

When Table 7 was examined, the related groups t-test results reveal that there is no significant difference at the $p < 0.05$ significance level in the English Self-Efficacy Belief Scale score applied before and after the instruction. Although the writing technique for learning contributed to the development of students' self-efficacy, this development did not make a significant difference.

Discussion and Conclusion

The purpose of this research is to compare the academic achievements, attitudes, and self-efficacy of 10th grade students who practice letter writing with those who do not do this activity, and to evaluate the students' opinions about this activity. In this section, the results obtained will be examined and discussed in the light of the literature.

The multiple-choice Simple Past Tense Achievement Test was applied as a pretest in the first sub-problem of the research to determine if the academic achievement of the experimental and control groups differed before the instruction. Then, it was tested whether the difference between these results and the groups was significant, and no significant difference emerged between the groups. This shows that the knowledge levels of the three groups about simple past tense are equal.

In the second sub-problem of the research, the Simple Past Tense Achievement Test was applied as a posttest to the experimental and control groups after they completed the letter writing activity for learning purposes. The results were tested to see if there was a significant difference between the groups, and a significant difference emerged between the three groups. This difference was in favor of the experimental groups. This finding shows that writing letters activity is effective in increasing students' academic success.

The study by Ay (2018) concluded that the use of writing activities for learning purposes in the secondary school Social Studies course positively impacted student success. Külekçi's (2018) study found no significant difference between the groups' answers to the multiple-choice questions in the achievement test, but found a significant difference in favor of the experimental group in the open-ended questions. In the study conducted by İncirci (2016), it was concluded that the use of writing as a learning technique in the English course was effective in creating a significant difference in the success of the students in favor of the experimental groups. In the study conducted by Bozat and Yıldız (2015), it was concluded that writing letters for learning purposes in the 5th grade science course increased the academic success of students.

In the study conducted by Yıldırım (2016), the effects of letter writing and diary writing activities, which are writing activities for learning purposes, on the academic success and attitudes of sixth grade secondary school students were investigated. As a result, it has been concluded that writing activities provide the desired increase in success over a long period of time. In the study conducted by Daşdemir, Cengiz, and Uzoğlu (2015), it was found that letter writing letter activity had a small effect size in favor of the experimental group on the academic achievement of students in the 7th grade light unit.

In the study conducted by Karaçağıl (2014), it was concluded that the experimental group students were more successful than the control group students in terms of posttest success scores. In his study, Koçak (2013) compared the academic success of the experimental groups using letter writing and brochure preparation techniques, as well as the

control group using the traditional method, and found a significant difference favoring the students who wrote messages and prepared brochures in terms of both academic and permanence.

In the study conducted by Duymaz (2011), he studied with one control and four experimental groups and Duymaz (2011) conducted a study where he involved one control and four experimental groups, asking them to write letters for learning purposes to various addressees. The study concluded that writing activities for learning purposes were effective in the learning process. The achievement of teacher candidates increased in favor of the experimental group by using the letter writing activity for learning purposes.

In their study, Balgopal & Wallace (2009) asked students to write three articles based on news about hypoxia, including cognitive, behavioral, and affective domains. They concluded that 64% of the students improved their ecological literacy from the first article to the third article and that writing is an effective learning tool in increasing ecological literacy. In the study conducted by Günel, Uzoğlu, and Büyükkasap (2009), the effects of preparing writing activities for different learning purposes on student success were investigated, and it was concluded that students who performed letter writing activities were statistically more successful than students who performed summary writing activities.

In their study, Kieft, Rijlaarsdam, & Bergh (2008) investigated learning for the purpose of writing about literary stories with an experimental study, and the results showed that adapting students' writing strategies and writing tasks increased students' learning in the field of literature. Reilly's 2007 study concluded that writing enhanced students' mathematical knowledge. Boscolo and Mason (2001) did an experiment that led them to the conclusion that writing can be a tool for thinking and the transfer of knowledge if it is taught effectively throughout the curriculum and supports the higher-order thinking process to ensure understanding. This should be paired with activities in the classroom that structure and reconstruct knowledge and require students to be willing to solve knowledge problems.

Homstad & Thorson's (1996) study concluded that incorporating writing for learning and process writing strategies into foreign language teaching classes positively impacted foreign language proficiency. In the study conducted by Asworth (1992), it was found that the end-of-term total score of the students in the experimental group, where writing strategies for learning purposes were used, was higher than the students in the control group, and a statistically significant difference emerged. This study is similar to the results of previous studies on writing for learning purposes. These results suggest that foreign language teaching can also incorporate the writing technique for learning. However, Demaree's (2006) study concluded that students may not even be learning to write in the context of a physics course, given the unclear connection between writing and learning content.

In the third sub problem of the research, it was examined whether there was a significant difference in the academic achievements of the students who engaged in the letter writing activity before and after the experiment. According to the analysis results, it has been found that letter writing activity has an effect on increasing students' academic success.

In the fourth sub-problem of the research, it was tried to determine whether there was a significant difference between the scores of the English Self-Efficacy Belief Scale applied to the experimental and control groups before teaching. According to the analysis results, no significant difference was found between the scores of the experimental and control group students on the English Self-Efficacy Belief Scale before instruction. In other words, students' self-efficacy belief levels regarding English before instruction are equal.

In the fifth sub problem of the research, it was examined whether there was a significant difference between the scores of the English Self-Efficacy Belief Scale applied to the experimental and control groups after the instruction. According to the analysis results, no significant difference was found between the scores of the experimental and control group students on the English Self-Efficacy Belief Scale after the instruction. There was no difference between the students' English self-efficacy belief levels after the instruction.

In the sixth sub-problem of the research, it was examined whether there was a significant difference between the pretest and posttest scores of the English self-efficacy belief scale applied to the experimental group students who were given letter writing activity. In the reading sub dimension, the posttest average of the experimental group was 3.30, and the pretest average was 3.13. This result indicates that self-efficacy in the reading sub-dimension increased. In the writing sub dimension, the posttest average of the experimental group was 2.95, and the pretest average was 2.87. It is seen that the writing self-efficacy scores of the experimental group increased. In the listening sub dimension, the posttest mean of the experimental group was 3.15, and the pretest mean was 3.11. Finally, in the speaking sub-dimension, the posttest mean of the experimental group was 2.86, while the pretest mean was found to be 2.92.

Compared to the pretest, the experimental group students' averages increased in three sub-dimensions and decreased in one sub-dimension in the posttest. This situation was tested, and it was revealed that there was no significant difference in all sub dimensions. Although the writing technique for learning contributed to the development of students' self-efficacy, this development did not make a significant difference.

According to the results obtained, the following suggestions can be made: factors other than the teaching method, like gender, etc., that affect self-efficacy and attitude in the learning environment where the writing technique for learning is used can be investigated. The academic success of students has increased with the letter writing activity. Likewise, various activities other than letter writing, including poetry, stories, etc., can also be investigated to see whether similar results can be achieved.

With the letter writing activity, ninth grade students were made to read the letters, but they were not asked to write their answers. In future research, the effects of this technique on writing and learning can be investigated by providing feedback to the letters from students. A letter writing activity has been used in teaching foreign languages. In future research, the effectiveness of this technique can be investigated in different departments, such as teaching vocabulary in a foreign language. A letter writing activity can also be applied in other courses, and the results can be compared.

References

Ada, S., & Şahenk, S. S. (2010). European language portfolio and foreign language education in Turkey, *Marmara Journal of European Studies, 18*(1-2), 63-88.

Ashworth, T. E. (1992). *Using writing to learn strategies in community college associate degree nursing programs* (Unpublished Doctoral Dissertation). Virginia Polytechnic Institute and State University, Virginia.

Ay, A. (2018). *The effect of using letters and poems from writing activities for learning in social studies curriculum on student achievement* (Unpublished Doctoral Dissertation). Erzincan University, Erzincan.

Balgopal, M. M., & Wallace, A. M. (2009). Decisions and dilemmas: Using writing to learn activities to increase ecological literacy. *The Journal of Environmental Education, 40*(3), 13-26.

Boscolo, P., & Mason, L. (2001). Writing to learn, writing to transfer. In: Tynjälä P., Mason L., Lonka K. (Eds.) *Writing as a learning tool. Studies in Writing*, 7. Dordrecht: Springer.

Bozat, Ö. (2014). *The impact of letter as one of the writing to learn activities on achievement at fifth grade electricity in our life unit* (Unpublished Master Thesis). Atatürk University, Erzurum.

Büyüköztürk, Ş. (2015). *Data analysis handbook,* Ankara: Pegem Academy.

Daşdemir, İ., Cengiz, E., & Uzoğlu, M. (2015). The effect of letter writing, one of the writing activities for learning, on students' academic achievement and scientific attitudes in the 7th grade light unit. *ODÜ Journal of Social Sciences Research, 5*(11), 89-103.

Demaree, D. (2006). *Toward understanding writing to learn in physics: Investigating students writing* (Unpublished Doctoral Dissertation). The Ohio State University, Ohio.

Demirel, Ö. (2016). *Foreign language teaching, language passport, language biography, language file* (9th Edition), Ankara: Pegem Academy.

Duymaz, N. (2011). *The use of writing activities for learning purposes in learning the cell subject and producing analogies* (Unpublished Master Thesis). Gazi University, Ankara.

Erişek, Ö., & Yücel, F. (2002). The importance of literary texts in language teaching. *Osmangazi University Journal of Social Sciences*, *3*(2), 63-76.

Günday, R. (2015). *Approaches, methods, techniques and multimedia tools and materials in foreign language teaching*. Ankara: Favorite Publications.

Günel, M., Uzoğlu, M., & Büyükkasap, E. (2009). Effects of using writing to learn activities on learning force unit in the primary education level. *Gazi University Gazi Faculty of Education Journal, 29*(1), 379-399.

Gürbüz, S., & Şahin, F. (2016). *Research methods in social sciences.* Ankara: Seçkin Publications.

Homstad, T., & Thorson, H. (1996). Using writing to learn activities in the foreign language classroom. *Technical Report Series*, 14, 1-71.

İncirci, A. (2016). *The effect of "letter writing activity" on academic achievement, attitude towards the course and metacognition level in English lesson* (Unpublished Master Thesis). Bülent Ecevit University, Zonguldak.

Karaçağıl, C. (2014). *The effect of using writing activities for learning purposes in social studies classes on students' academic success* (Unpublished Master Thesis). Muğla Sıtkı Koçman University, Muğla.

Karasar, N. (2015). *Scientific research method* (28th Edition). Ankara: Nobel.

Kieft, M. Rijlaarsdam, G., & van den Bergh, H. (2008). An aptitude–treatment interaction approach to writing-to-learn, *Learning and Instruction, 18*(4), 379-390.

Koçak, G. (2013). *The effect of the implementation of writing activities for learning on the subject of motion in one dimension on the academic achievement and retention of first year science teaching students.* (Master Thesis). Atatürk University, Erzurum.

Külekçi, Z. (2018). *Examining the effect of story writing on 8th grade students' academic achievement and attitudes in the unit of structure and properties of matter* (Unpublished Master Thesis). Giresun University, Giresun.

Larsen-Freeman, D. (2000). *Techniques and principles in language teaching,* Oxford: Oxford University Press.

Ministry of National Education [MoNE]. (2018). English language curriculum (Grades 9–12). Ankara: MoNE.

Norris, S. P., & Phillips, L. M. (2002). How literacy in its fundamental sense is central to scientific literacy. Science *Education, 87*(2), 224–256.

Reilly, E. M. (2007). *Writing to learn mathematics: A mixed method study.* (Unpublished Doctoral Dissertation). Indiana University of Pennsylvania, Pennsylvania.

Tarıkdaroğlu, M., & Akar, M. S. (2022). The effect of learning writing on primary students' academic success and attitudes to writing. *International Journal of Educational Science and Technology, 8*(2), 110-121.

Templin, S. A., Guile T. C., & Okuma, T. (2001). *Creating a reliable and valid questionnaire and English test to raise learner's l2 achievement via raising their self-efficacy.* Washington: ERIC Clearinghouse

Uzun, S. (2011). *The effect of learning environments enriched with literacy activities for learning on physics learning: An application in energy unit* (Unpublished Doctoral Dissertation). Karadeniz Teknik University, Trabzon.

Uzun, S., & Alev, N. (2013). The effect of reading and writing to learn activities enriched environments on students' achievement. *Journal of Turkish Science Education*, *10*(2), 138-154.

Yanar, B., & Bümen, N. (2012). Developing a self-efficacy scale for English. *Kastamonu Education Journal*, *20*(1), 97-110.

Yıldırım, Z. (2016). *The effect of writing activities on middle school students' mathematics achievement and attitudes* (Unpublished Master Thesis). Kocaeli University, Kocaeli.

Yıldız, A., & Büyükkasap, E. (2011). Pre-service teachers' level of understanding the Heisenberg uncertainty principle and the effect of writing for learning on academic achievement. *Journal of Turkish Science Education, 8*(4), 134-148.