

Letter as a Writing to Learn Activity and the Addressee

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The main purpose of this research was to study how the instructiveness of the letter, one of the writing to learn activities; changes according to the person to whom it is written (the addressee). The document analysis method was used in this qualitative study. Since documents are very important information sources used effectively in qualitative studies, their authenticity is important. The book named "Letters from Father İnönü to Erdal İnönü" published by Bilgi Publishing in 1988 and prepared for printing by Sevgi Özel with the permission of the İnönü Foundation and the letters published under the title "The letters of Erdal İnönü to his father" by Can Dündar in his column in the Milliyet on 17, June, 2007 were analysed using the qualitative analysis method. It was analysed in the study that how the instructiveness of the letters (1947-1951) whose content was only related to physics and written from father to son and from son to father changed according to the addressee. The documents analysed in this study provide the first three stages of document analysis, which has five stages namely; access to the documents, control of their authenticity, understanding the documents, analysis of the data and the use of the data. The findings of the research support the views of the students, who stated that they had written more clearly to students who were younger than they were or studying in the subclasses than they had written to their teachers in the studies conducted previously.

Introduction

It is observed that the researches in the science education domain are under the effect of two paradigms and in the discussions about research approaches, the purpose and the result of the researches become important rather than deciding whether to use the qualitative or quantitative approach (Sözbilir & Canpolat, 2006). The USA Research Council determine that science education requires more than studying the known principles and theories and science must be taught differently from the psychology, philosophy, sociology and history courses (National Research Council [NRC], 1996). There are important instruments in science courses that are believed to develop higher level cognitive process skills. Writing to learn activities are the primary activities among the others. Writing activities help the students to become individuals who communicate better and help them to get used to the writing genres that are required in various academic disciplines and professional fields. In the twentieth century, two writing movements drew interest in the curriculum. The first emerged as a result of Dewey's progressive education, which started in the 1930s and lasted until the 1950s. The second is the movement that began in the 1970s and has lasted until now. In this process, writing became the teaching method that was used worldwide in many education levels and the science field (Anson, Schwiebert & Williamson, 1993; Bazerman & Russel 1994; Fulwiler, 1986; Martin, D'Arcy, Newton & Parker, 1994; McLeod, 1992; Pearce, 1984; Russell, 1991).

Klein (1999) states that writing activities (diary, summary, letter, article and so on) help the students to become individuals who communicate better, think critically, and form a new

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knowledge repertory. Klein (1999) draws attention to the four hypotheses about writing depending on certain studies (Bereiter & Scardamalia, 1987; Britton, 1982; Flower & Hayes, 1980, 1981; Newell, 1984; Young & Sullivan, 1984). The first hypothesis is that the writers form knowledge while telling it. In other words, it (spontaneous) is to form with telling without planning and controlling. The second hypothesis known as “forward search” claims that the writers materialise their ideas in their writings and then reread the writing and make new inferences depending on it. The third hypothesis (genre structures) argues that the writers use genres to form a relation between the elements of the text and the components with which the knowledge are associated. The last hypothesis called “back-ward search” states that the researchers have chosen scientific purposes that are expressed effectively, they obtain sub-purposes from them that are satisfying and they change their own knowledge to finalise it.

Torrance, Thomas and Robinson (1994, 1999, 2000) investigated the individual differences in the writing behaviours of university students. They determined in their studies that because of the methods the students used while writing their thesis, they were divided into three groups as those who plan, those who revise, and mixed strategy writers. Those who plan want their ideas to be intelligible and they have a tendency to write less drafts than those who revise. At the beginning of the writing process, they decide on the content of the text, think and then write. Those who revise benefit from their corrections to develop the content. Writing makes their ideas more comprehensible and helps them to understand the discussions better. While they are writing, they have a tendency to develop the content; they think while writing. The third group is mixed strategy writers who plan the text without forming it. They are similar to those who plan, but they change the content during their subsequent corrections.

The ideas of the writers can change during the writing process. Because of this, the ideas arise during the writing process. While rethinking and expressing again, the ideas are shaped as fully developed ideas in the end. The knowledge change model is the quality of expert writers rather than novices (Tynjälä, 1998). The difference between the knowledge telling model and the knowledge change model only explains why answering research questions is not as effective a study strategy as writing an article. While research questions can be answered with the knowledge transfer strategy, writing an article consists of strategies that require knowledge change and a higher thinking process such as writing, organisation, and completion (Tynjälä, 1998).

Numerous researches were conducted regarding the use of writing as a tool that develops learning and thinking (Mason & Boscolo, 2000). Langer and Applebee (1987) stated in their study about writing to learn that writing about a topic help the writer to enhance their knowledge, organise the ideas to be written, and experience learning. Writing activity urges the writer to express their views more openly and clearly. The use of writing as a cognitive activity is an important step in learning with a plan (Bereiter, 1990, 1994; Bereiter & Scardamalia, 1989). Yıldız and Büyükkasap (2011a, b, c) in their studies in which work groups were comprised of science teacher candidates concluded that the achievement percentages of the experiment groups who wrote letters as a writing to learn activity to the high school students in their final years about a photoelectric event, Compton event, and the Heisenberg uncertainty principle scored higher than the control groups. In the same studies, the experiment group students determined that they understood the topics that they wrote letters about and the writing to learn activity was effective in learning these topics. In the study called “the effect of a writing activity in learning science subjects in an informal learning environment” by Doğan and Çavuş (2008), the students stated that they learned to summarise by gathering information through the writing activity, sort the scientific knowledge by expressing it in their own words, associate the main ideas about a subject, and shortly present the information by organising it. In a study conducted by Özer Keskin, Doğan and Keskin Samancı (2008), the students were asked to write an explanatory text by taking into consideration the question asked in the pre-test. Most of the students stated that they had revised their ideas and organised their information while

writing the explanatory text. Akçay and Hand (2008) stated that the written and verbal expressions of the students gave information about what they learnt, how they interpreted what they learnt, and how they associated it with the knowledge they already had. The same researchers asserted that having students do different writing activities in science courses such as drawing pictures, writing poems and letters enhanced their motivation towards the science course.

In the studies conducted about writing to learn activities (Hohenshell, Hand & Staker, 2004; Hand, Yang & Bruxvoort, 2007; Günel, Uzoğlu & Büyükkasap, 2009), the students writing letters stated that writing to younger addressees compelled them to use a different language than they used while writing to their teachers and the reason for this was that they wanted to write it more clearly. In short, the subjects determined that they thought more when writing to juniors and this condition caused them to structure the scientific concepts related to the subject that they had written successfully. In a study conducted by Yıldız (2009), the science teacher candidates determined that they thought more to write more explanatorily in the letters that they wrote about the subjects of quantum physics to the senior high school students as their addressees and this condition helped them to understand the subject as they explained it better in their letters. In the same study, in the section where the views of the science teacher candidates (positive or negative) were investigated, the teacher candidates stating views such as “I tried to be more explanatory for the person to understand some conditions better” reveal that the instructiveness of the letter written can change according to the addressee.

The purpose of the study

The aim of the study was to analyse how the instructiveness of the letter, one of the writing to learn activities; change according to the person to whom it is written (the addressee).

Method

Document analysis was used in this qualitative study. Document analysis can be used separately as a data collection method in qualitative researches (Yıldırım & Şimşek, 2011). Document analysis involves the systematic examination of written materials, which include information about the target events or phenomenon for analysis. Since documents are important information sources used in qualitative research studies, their authenticity is important. A theme, a word, a character, a sentence or paragraph, an item or a content related to the research topic is researched and the data obtained may not require quantification. The researcher can easily report the results obtained after the analysis in prose (Yıldırım & Şimşek, 2011). Since it is not proper for the researcher to make judgements without looking up the meanings of the words used in a sentence or sentences, content analysis, frequently used in social sciences researches, has been used. In this study, the book named “Letters from Father İnönü to Erdal İnönü” published by Bilgi Publishing in 1988 and prepared for printing by Sevgi Özel with the permission of the İnönü Foundation and the letters published under the title “The letters of Erdal İnönü to his father” by Can Dündar in his column in the Milliyet on 17, June, 2007 were analysed using the qualitative analysis method. The letters in the book include the two periods of time when Erdal İnönü went to the USA to complete his postgraduate studies (1947-1951, 1957-1960). The letters analysed in both documents cover the first period (1947-1951). How the instructiveness of the letters written only about physics from father to son and from son to father changed according to the addressee was analysed in the study. As it was determined by the researchers (Yıldırım & Şimşek, 2011), many documents (newspaper columns, course books, organisational documents, annual reports and so on) revised, controlled for authenticity, arranged and organised by the experts in the field can be a data source and the use of such documents can increase the reliability and validity of the qualitative study. The documents examined in this study (a book and a newspaper article) automatically provide the first three stages of document analysis, which has five stages (Forster, 1995; Yıldırım & Şimşek, 2011) such as

access to the documents, control of their authenticity, understanding the documents, analysis of the data and the use of the data. This condition is an important advantage for this study.

Findings and Interpretation

The data of the study was obtained by analysing the book named “Letters from Father İnönü to Erdal İnönü”, which was reorganised with an intelligible language and expertise without damaging the authenticity by Sevgi Özel with the permission of the İnönü Foundation and published by Bilgi Publishing in 1988 and the letters which had the content related to physics and published under the title “The letters of Erdal İnönü to his father” by Can Dündar in his column in the Milliyet (Dündar, 2007) on 17, June, 2007. The suitable letters were scanned and presented below, and necessary explanations and interpretations were made.

7 Aralık 1947, Pazartesi

Erdal, Canım Oğlum,
Hatırimda iken sorayım. Benim fizik laboratuvarımdaki¹²
fizik aletleri sana ileride lazım olur mu? Eğer bunlar senin için
faydalı olurlarsa kendime mal etmeliyim. Değilse devletin malı
olarak Köşkte kalır. İlk mektupta bana bir kelime yaz.

7, December, 1947, Monday

Erdal, my dear son

Let me ask you while it is on my mind. Will you need the physics tools in my physics laboratory in the future? If they can be beneficial to you, I will keep them. If not, they will stay in the Villa as the property of the state. Inform me in your first letter.

The expression of “Will you need the physics tools in my physics laboratory in the future?” reveals that the father is interested in and curious about learning physics, he thinks about physical events, he might have knowledge about the fundamental concepts of physics, and correspondences can be made with him about this topic, he may have some questions and he may ask for the answers to be written. In the studies conducted (Dündar, 2009; Özel, 1988), these views were verified with the statements that İsmet Pasha conducted physics experiments in the physics laboratory in Presidential House with accomplished physicians of the period such as Hayri Dener.

28 Ocak 1950, Cumartesi

Erdal, Sevgili Erdalım,
Bugün öğleyin, ümit ettiğimiz gibi, 18 tarihli bir mektu-
bunu aldık. «Smog» üzerine tafsilat veriyorsun. Ömer de ta-
birini anlatmıştı. Fakat gözde $S_1H_2So_4$ teşekkül etmesi ihtimali
hemen gözlerimi sızlattı. Bir şey öğrenmiş oldum. Şimdi ga-
zetelerde, Amerika'ya atfedilerek, hidrojen bombasından bah-
sediliyor. Bugünkü bir havadis'e göre bunun kuvveti atom
bombasından yüz defa daha ziyade imiş. Bu bombanın (H)
mahiyeti hakkında bana birkaç satır yazabilir misin?

28 January 1950, Saturday

My dear Erdal,

We received your letter dated the 18th as we had expected at noon. You give details of “smog”. Ömer had told me the term. But the possibility of formation of $S_1H_2So_4$ in the eye made my eyes ache. I learned something. Nowadays, the newspapers mention the hydrogen bomb by referring to the USA. According to the news today, its effect was a hundred times more powerful than the atom bomb. Can you write a few lines to me about the (H) composition of this bomb?

The interpretations made about the letters of İsmet Pasha dated 7 December, 1947 greatly verify some statements presented in the letter above. Pasha's desire to be given information about the comparison between the devastating effect of the atom bomb and the hydrogen bomb and the composition of the hydrogen bomb reveals that İsmet Pasha paid great attention to the topic, followed the hot agenda, and most of all, he did all this warmly. İsmet İnönü's following the current agenda (from Illustrated London News), reading the relevant books, being interested in the

relativity theory of Einstein and even trying to understand it and writing to his son (the letter dated 28 January, 1950) is surprising and interesting. While analysing the letters, do the letters that he is going to write to his son have an effect on these? In other words, can the letters that he is going to write to his son encourage him to follow the events about current physics and read books and journals about them? The occurrence of such a possibility is very important, although it is very small. It makes letter as a writing to learn activity very useful, beneficial and effective.

5 Şubat 1950, Pazar

Erdal, Sevgili Evladım,
28 Ocak tarihli mektubunu dün aldık. Demek, tam bir haftada. Bu mevsimde rekor sayılır. Bizim halimizi sorma. Soğuk, kar, görülmemiş derecede. Çok şükür, hep iyiyiz. Bu sabah annen ile beraber çiftlik yolunda yarım saat kadar yürüdük. Rüzgâr yok gibi idi. Pek hoşumuza gitti. Eve döndüğümüz vakit sıcaktan bunalдық. Evde 20 derece. Görülmemiş sıcaklık.

Ben yakın mektuplarımda birinde hidrojen bombası hakkında malumat istemiştım, senden. Bu sefer bahsediyorsun, ama politik tarafından, fenni tarafından değil. Belki onu da yazarsın. Mektubuna göre science¹⁰² tarafı henüz pek saklıya benziyor.

5 January, 1950, Sunday

Erdal, my dear son,

We received your letter dated the 28th of January yesterday; in other words, after a week. It may be a record in this season. Don't inquire about our health. It is exceptionally cold and snowy here. Thank God, we are all well. We walked on the farm road for nearly half an hour. The wind was not very strong. We enjoyed it very much. When we went back home, we were exhausted from the heat.

In one of my recent letters, I asked you for information about the hydrogen bomb. You talk about it politically, but not scientifically. You may also write about it. According to your letter, its scientific aspect seems to be hidden.

The statement “In one of my recent letters, I asked you for information about the hydrogen bomb” and the subsequent sentences reveal that the addressee personally demanded information before, but what was written was not what he expected. It is an important advantage for the addressee to ask for information about the hydrogen bomb personally. It can indicate that he had the desire to learn, thought about the topic before and he would make more effort to understand what was written.

5 Şubat 1950 / Pazar

Sevgili Babacığım,
Bildiğiniz gibi hidrojen bombası imalatına bu hafta Truman karar verdi. Umumiyetle dendiğine göre bir sene içinde ilk hidrojen bombası yapılabilecekmış; masraf 100-150 milyon dolar tahmin ediliyor. (...) Bu hafta Columbia Üniversitesi'nde bir toplantıya gelmiş olan birçok meşhur atom fizikçisi bir demeç yayınladılar. 'Hidrojen bombası bir harp silahı değil, bütün bir 'popülasyon'u ortadan kaldıracak bir vasıta. Ne kadar haklı olursa olsun hiçbir sebep böyle bir kütle imhasını mazur gösteremez' diyorlar.

5 February, 1950 / Sunday

Dear father,

As you know, Truman made a decision about the production of the hydrogen bomb. In general, the first hydrogen bomb was said to have been produced in a year. Its cost is predicted to be 100-150 million dollars. (...) Many famous atom physicists came to Columbia University to join a meeting published a statement. They say, "The hydrogen bomb is not a weapon, but it is a means to wipe out all the population. However right it may be, nothing can excuse such mass destruction."

The expressions given in the letter below and written by his father (9 February, 1950) as a reply to the letter written by Erdal İnönü reveals that the letter dated 5 February, 1950 like the other letters written to father from son was not explanatory enough and did not include the information that he wanted at a level that he would understand.

9 Şubat 1950, Perşembe

Erdal, Sevgili Evladım,
Bugün 5 Şubat tarihli mektubunu aldım. Sürat rekoru. Çok teşekkürler. Hidrojen bombası hakkında çok kıymetli malumat veriyorsun. Tam anlamadım. Ömer ile okuyacağım. Pos-

9 February, 1950, Thursday

Erdal, my dear son,

I received your letter dated the 5th of February today. A speed record. Thanks a lot. You are giving me very valuable information about the hydrogen bomb. I could not understand it very well. I am going to read it with Ömer.

The statement “You are giving me very valuable information about the hydrogen bomb. I could not understand it very well. I am going to read it with Ömer.” reveals that the writer wrote it without thinking about the condition of the addressee. The addressee’s statement that he could not understand it and even despite the help of another person, he could not understand it as he had desired indicates that the person who wrote it did not write explicitly enough to consider the addressee. After all, the addressee was his father and couldn’t the person who taught him all throughout out his life as a teacher understand it? The research studies (Yıldız, 2009; Günel et al., 2009) determine that the writers experience some cognitive processes during the stage of how I can express my views in order to help the young addressees (junior) understand them more easily and clearly and this condition causes them to learn better. This finding supports the views stated in the previous studies (Hohenshell, Hand & Staker, 2004; Hand, Yang & Bruxvoort, 2007; Günel et al., 2009) that the student wrote more clearly while writing to their junior or studying in sub-classes than to their teachers and they thought more because of this.

10 Subat 1950, Cuma

Erdalım,
Ömer'e bugün biraz sordum. «Hidrojenler birleşirken ni-
lazım iken. Dedi ki dört H atom birleşince bir helyum yapıyor.
lazım iken. Dedi ki dört H atom birleşince bir helyum yapıyor.
Fakat helyumun ağırlığı 4H'den daha az bulunuyor. Aradaki
kitle kaybı enerjiye gidiyor, dedi. Bu da demek sarf olunan
enerjinin 8 misli. Doğru mu anlaşmış oluyor?

10 February, 1950, Friday

My dearest Erdal,

I asked Ömer a question today... He said, “When four H atoms fuse, they make one helium atom. But the weight of helium is found to be less than 4H. The mass loss in between goes into the energy.” This means that this is 8 times the energy consumed. Have I got it right?

The statement “I asked Ömer a question today. Is it understood correctly?” reveals that the addressee is uncertain and wants approval. If Erdal İnönü had written these letters to a family member younger than him, rather than his father, he would have probably written them more clearly. The writers who write letters to a person who is younger in age and low in status think more about how to express themselves in order to be understood more easily and they use different expressions, similes, and examples. All of these points reveal that the age and status of the addressee can affect the instructiveness of the letter.

15 Mart 1950, Çarşamba

Erdalım, Sevgili Evladım,
Şimdi Ömer ile beraber Dil Fakültesinde, Heisenberg'in¹⁷³
atom fiziğinin felsefesi üzerinde konferansını dinlemeye gidece-
giz. Selamlar sevgilerle.

15 March, 1950, Wednesday

My Dearest Erdal,

Ömer and I are going to the Faculty of Letters and Science to listen to the conference of Heisenberg about the philosophy of atom physics. Regards, yours affectionately.

The letter dated 15th of March, 1950 points out that Ismet Pasha not only followed the developments in modern physics through reading books or journals, but he also went to conferences of scientists such as Werner Heisenberg, the winner of 1932 Nobel Prize in Physics. The individual who is very much interested in modern physics states that he could not understand the content of the

letter written to him by someone who is younger than him (his son), where the scientific explanation of the hydrogen bomb is made. It is an important finding that İsmet İnönü, a great commander and a politician who left a mark in the recent history of Turkey, mentioned the important developments in modern physics in his letters written to his son, who was completing his post studies on physics in the USA.

These findings reveal that İsmet İnönü, the president of the republic from 1938 to 1950, was interested in modern physics and he read, conducted research, and most importantly thought about the subject. He might have read and examined the books and the journals relating fascinating developments in physics in order to motivate his son in his field of study with the letters that he wrote. What is important is that all these must have been provided with the letters that he wrote to his son. This possibility highlights the fact that writing activities contribute to learning.

Conclusion

İsmet İnönü conducted physics experiments with the accomplished physicists of the period in the physics laboratories in the Presidential House. He followed the fascinating developments in modern physics by reading books and journals, and joining the conferences of the European Physicists who were honoured with the Nobel Prize. He tried to compare and contrast the hydrogen bomb and the atom bomb. Furthermore, he wanted to learn the structure of the hydrogen bomb. He asked his son to write to him about this matter. Although he was very willing, equipped, and prepared on this matter, his inability to understand the explanation about the structure of the hydrogen bomb stated in the letters written to him by someone who was younger than him is an important finding of this study. It is an important finding of the studies conducted previously (Hohenshell et al., 2004; Günel & Hand, 2005; Hand, Prain, Lawrance & Yore, 1999; Akar, Günel & Büyükkasap, 2008; Günel, Uzoğlu & Büyükkasap, 2008; Günel et al., 2009; Yıldız, 2009) that people who are younger and low in status could not write explanatorily enough when they wrote to their elders. If Erdal İnönü had written these letters to a family member who was his junior or to another individual such a high school student like a student writing to his teacher, but not to his father, he would have probably written more explanatorily. The letters written to someone who is younger and low in status are more understandable because the writers think more about how to express them to be understood more easily and they use different expressions, similes and examples (Hohenshell et al., 2004; Yıldız, 2009; Günel et al., 2009). All these findings reveal that the instructiveness of the letter can change according to the addressee.

İsmet İnönü must have read the journals that explain the fascinating developments in modern physics in order to motivate and support his son in his letters, maybe just to write or he was interested in modern physics so he read and analysed the books and went to conferences of the well-known scientists of the period. Who knows? However, the important thing is the possibility of the letters that he wrote to his son having provided all these things. This possibility points out that writing activities serve and contribute to learning. Furthermore, it can be stated that the father and son revised their ideas due to the letters that they wrote, reorganised them by expressing them in their own words (Yıldız, 2009; Yıldız & Büyükkasap, 2011b) and most importantly, the letters encouraged them to think. This study supports the results of the experimental studies by revealing that the instructiveness of the letter and the condition in which the letters were written years ago, experienced and made history in real life would change according to the addressee.

It might be suggested to instructors and teachers within the context of the findings of the study that writing to learn activities or the teaching strategies that include these activities is used in teaching physical concepts in general physics, modern physics and other science courses and realising the conceptual change of the students by simplifying it (Mason & Boscolo, 2000), as well as bringing the student to the position of the discoverer and the constructivist of the knowledge by placing them

in the centre (Yıldız & Büyükkasap, 2011a,b,c). It is thought that conducting studies about the other genres of writing to learn activities that were grounded on the constructivist theory and helped the students to come out of a conceptual change process such as “summary” and “poster” and the examination of whether or not the instructiveness of the written summary or a poster of a topic changed according to the addressee will make important contributions to the field.

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