



Uluslararası Sosyal Araştırmalar Dergisi

The Journal of International Social Research

Cilt: 8 Sayı: 41 Volume: 8 Issue: 41

Aralık 2015 December 2015

www.sosyalarastirmalar.com ISSN: 1307-9581

## THE EFFECT OF KEEPING DIARY ABOUT THE SCIENCE AND TECHNOLOGY CLASS ON STUDENT ACHIEVEMENT AND ATTITUDE

<sup>1</sup>Ülkü ÇARDAK

<sup>2</sup>Şenol BEŞOLUK

### Abstract

This study was conducted to investigate how keeping a Science Diary in the Elementary Science and Technology class affect the academic achievement and the attitude towards Science and Technology class. In addition, the relationship between the learning styles and achievements of the experimental group students was examined in the study and it was investigated for which learning styles the practice is more suitable among the students. The sample of the research is composed of the sixth grade students who study at a state elementary school in Sakarya province. The experimental group students were asked to keep Science Diary for three units in an education term. The data obtained from the study showed that the activity of keeping a Science Diary which gave chance to repeat the topics by writing down increased students' academic achievements. It was seen that achievements of the students whose dominant learning styles were Tactual/Kinesthetic increased more. It was also concluded that the practice changed the experimental group students' attitudes positively.

**Keywords:** Science Diary, Learning Styles, Science and Technology Class Attitude, Academic Achievement.

### INTRODUCTION

Depending upon the developments in science and technology, the expectations from the education process have changed. With the excessive increase in knowledge, it is inevitable that every individual cannot acquire all the information. However, learning how to access information and how to learn play an important role in terms of being able to use the information in daily life and produce information later. It is one of the most important duties of the education process to ensure the efficient learning of individuals. Moreover, individuals are responsible for their own learning and their participation to learning depends on how much and to what extent they know about and can apply their own learning strategies and (Tay, 2005). Weinstein and Mayer (1986) emphasized that it is compulsory to teach students how to learn, remember, think and learn on their own. They therefore can become more sufficient for organizing and processing the constantly-accumulating knowledge and making it part of their own thinking styles. To this end, students have to "learn how to learn" in the first place. In other words, they have to be aware of how they learn and how information becomes permanent in their mind, and they should perform the act of learning through proper activities. In the learning-teaching process, one of the duties of teachers is to guide students and provide them with proper activities for creating this awareness. Learning can only be performed by learner. No matter how interesting the taught topic is or how differently it is taught, it is apparent that neither teachers nor parents can help students learn something as long as they are not engaged in the learning process by performing a mental activity for making the topic meaningful for themselves. According to the constructivist approach, information is constructed in student's mind by individual differences in such a manner that it is affected by their preliminary learning ideographically. Learning is realized when students can achieve conceptual understanding (Özden, 2005). It is necessary that the learning-teaching process is organized in the diversity that addresses students with different types of intelligence and learning styles, students are made apprehend the topics this way and should construct the information in their minds through their own activities outside school (Özer, 1998; Açıkgöz, 2005; in Dikbaş and KafHasırcı, 2007). Based on these all, it is obvious that learning activities need to be organized according to individual differences. Efficient learning can be ensured by applying educational programs prepared in accordance with individual's learning style(s). It should be noted that individuals with different learning styles rather than a single one may be present in any class environment (Peker et al., 2004). According to Brownfield (1993), having information on learning styles helps teachers to understand individual differences between students and its importance (in Beşoluk and Önder, 2010). With the arrangement of educational environments in accordance with students' learning styles, the achievement of students and the system increases, the material losses due to student failure, students' confidence is enhanced, the flexibility in the education develops and education's conformity to the student level is ensured (Ekici, 2003).

<sup>1</sup>Science Teacher; Sakarya, Turkey; <sup>2</sup>Asst. Prof. Dr. Sakarya University, Faculty of Education; Sakarya, Turkey

Students' achievements depend mainly on being aware of their own learning styles and directing their own learning processes. In this case, students should be aware of and use their learning strategies and styles efficiently. Another individual learning technique of students is writing. Writing is a valuable learning mechanism which we can use for explaining our individual ideas on a subject, refining and organizing our ideas about that subject and which helps us explore our thoughts, which we are or our dreams in depth (Graham, 2008). In addition, it is an important learning product that facilitates students to relate their preliminary knowledge to new information and express them in their own way (Borasi& Rose, 1989); that reflects students' own mental and emotional worlds along with the learned information and skills (Yıldırım, Doğanay, & Türkoğlu, 2009). What is intended with writing for learning purposes is not that students write down what they read or teacher tells them but they write to express the knowledge they created ideographically (Yıldız, 2012). Previous research (Klein 1999; Doğan and Çavuş 2008; Yıldız and Büyükkasap 2011) showed that writing activities (letter, summary, diary, poster, articles, etc.) facilitate students to organize the pieces of information and put them in order and express them with their own sentences, build new knowledge and therefore establish better communications with others. From this point of view, the research was conducted to reveal the importance of writing, which is an individual technique of learning, in learning and the students were asked to keep a Science diary within the scope. The students blended what they learned in the Science class with their own lives and emotional worlds and recorded them on their Science diaries with their own expressions. Keeping a Science diary is important in that it is an activity in which students realize their cognitive and affective learning. The elementary sixth-grade students were asked to keep Science diaries for this research, and the effects keeping diary on students' academic achievements and attitudes towards the class were investigated. To this end, it is sought for answer to the following questions. Here are the subproblems of the research:

1. Is there a significant difference between the achievement scores of the experimental group students who kept Science diaries and the control group students who did not obtained from the "Science and Technology Achievement Posttest"?
2. Is there a significant difference between Science and Technology class attitudes of experimental and control group students at the end of the study?
3. Is there a significant relationship between the learning styles of the students who kept Science diaries and their Science and Technology class achievements?
4. What are students' opinions on the practice?

#### **METHOD**

The research was conducted in the experimental design with pretest-posttest control group to investigate how keeping a Science diary for the Science and Technology class affects academic achievement and Science and Technology class attitude. In experimental research, the independent variable is manipulated by the researcher and measures obtained from the independent variable under at least two conditions are compared (Büyüköztürk, 2008). Before commencing the research, the "Science and Technology Achievement Pretest" was applied to all of the students participating to the research as a pretest to identify if the experimental and control groups are equals in terms of achievement. In addition, the year-end achievement scores of the fifth-grade Science and Technology of the experimental and control group students were supplied by the school management. Performing an independent sample t-test analysis over the average of these scores, the equality of the classes was investigated again. Later, the experimental group students were asked to write down what they learned with their own statements after they listened to the teacher for an education term and write down the events which affected them at the class and their emotions as a diary that day. It was checked whether students were keeping diary and how they were keeping it, and they were informed again in case of wrong practices when necessary. After the practice was completed, the "Science and Technology Achievement Posttest" (STAT) was applied to understand whether there is a difference between the achievements of the experimental and control groups and the "Science and Technology Attitude Scale" was applied to measure students' levels of Science and Technology class attitude. Moreover, the experimental group students were applied with the "Learning Styles Inventory" and an interview form composed of open-ended questions to take their opinion on the practice.

The experimental research design is summarized in Table 1.

Table 1. Experimental Research Design

Groups	Pretest	Practice	Term	Posttest
--------	---------	----------	------	----------

---

Experimental Group	Achievement Test A Attitude Scale	Science Diary Kept	An Education Term	Achievement Test B Attitude Scale
Control Group	Achievement Test A Attitude Scale	-	An Education Term	Achievement Test B Attitude Scale

---

### Research Sample

The research was conducted with 54 sixth-grade students (23 females, 31 males) who studied in the 6/A and 6/B branches of a state elementary school in which the researcher worked in the first term of the 2009-2010 academic year. Straws were drawn between the 6/A and 6/B branches to determine the experimental and control groups. According to the draw, 6/B was determined to be the experimental group, 6/A to be the control group. The experimental group is represented by 6/B composed of 11 female and 15 male students (total 26 students).

### Data Collection Tools

In this study which aims at investigating the effect of keeping a Science diary for the Science and Technology class on the elementary sixth-grade students' academic achievement:

1. The "Science and Technology Achievement Pretest" composed of the course subjects taught at the fifth-grade Science and Technology class was used as a data collection tool to measure groups' science achievements at the beginning of the study.
2. At the end of the study, as another data collection tool, the "Science and Technology Achievement Posttest" was applied to measure and compare groups' Science achievements.
3. The "Science and Technology Attitude Scale" was used to measure the levels of Science and Technology class attitude.
4. The "Learning Styles Inventory" was applied to review the relationship between the learning styles and achievements of the experimental group students.
5. The "Interview Form" prepared by the researcher was used to receive the opinions of the students on the practice.

### Science and Technology Achievement Pretest (Test A)

An achievement pretest composed of the fifth-grade subjects was prepared to understand whether the research groups were equal in terms of achievement before the study and applied to the students of both groups. The test is composed of 17 multiple-choice questions. The scope validity of the Science and Technology Pretest was reviewed by 8 Science and Technology branch students who are working at the elementary school and two associates. In addition, the KR20 reliability coefficient of the achievement pretest was calculated to be 0.64. This value shows that the Science and Technology achievement pretest (Büyüköztürk, 2008).

### Science and Technology Achievement Posttest (Test AB)

The achievement test which covers the units "Reproduction, Growth and Development among Creatures", "Force and Motion", "Granular Structure of Matter" of the second term of the elementary sixth grade was prepared for measuring the achievements of the experimental and control group students. The Science and Technology Achievement Posttest is composed of 75 short-answer test items (20 fill-in-the-blank questions, 10 (Y)-(N) determinative questions, 25 multiple-choice questions, 20 matching questions). While preparing these test items, the attainments within the "Reproduction, Growth and Development among Creatures", "Force and Motion", "Granular Structure of Matter" units in the Elementary Sixth-Grade Science and Technology course of the Ministry of National Education. The questions in the Science and Technology Achievement Posttest were prepared by the researchers using various Science and Technology textbooks and the question banks on the internet. The test was applied to the seventh-grade students to whom the subjects were taught in a state elementary school for trial two times with an interval of one month and the reliability of the achievement test was found to be 0.89 with the test-retest method. The scope validity of the Science and Technology Posttest was reviewed by 8 Science and Technology branch students who are working at the elementary school and two associates. The experts reported that the Science and Technology Achievement test could be used for measuring students' attainments about the "Reproduction, Growth and Development among Creatures", "Force and Motion", "Granular Structure of Matter" units.

### Science and Technology Attitude Scale

The attitude scale used in the research was developed by Akinoğlu (2001) in 5-point Likert type and

its reliability was found to be  $\alpha = 0.89$ . The attitude scale is composed of 20 statements involving positive and negative judgments that determine students' attitudes towards the Science and Technology class. The SPSS software package was utilized for the analysis of the data obtained from the Science and Technology Attitude Scale. While analyzing the positive statements, the statement "Strongly Agree" was awarded 5 points, the statement "Agree" was awarded 4 points and so on. While analyzing the negative statements, the statement "Strongly Agree" was awarded 1 points, the statement "Agree" was awarded 2 points and so on.

### Learning Styles Inventory

The "Learning Styles Inventory" developed by Ersoy (2003) in the research named the "Examination of Elementary 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> grade Students' Learning Styles According to Their Achievement in the English Class" was used. The Learning Style Inventory is composed of 23 questions and three different dimensions. These dimensions are:

1. Visual learning
2. Audial learning
3. Kinesthetic/Tactual learning

There are 8 items each that measure the Visual and Kinesthetic/Tactual learning styles, and the number of items that measure the Audial learning style is 7. While calculating the scale reliability, Cronbach's Alpha reliability coefficients were found to be 0.71, 0.74 and 0.73 for Visual learning style, Audial learning style and Kinesthetic/Tactual learning style. Cronbach's Alpha reliability coefficient was found to be 0.83 for the whole scale.

### Interview Form

The "Interview Form" prepared by the researcher to receive the opinions of the students on the practice is composed of 4 open-ended questions.

1. Did you enjoy keeping a Science Diary?
2. Did keeping diary contribute to your science learning?
3. What are the positive aspects of keeping a Science Diary as far as you are concerned?
4. What are the negative aspects of keeping a Science Diary as far as you are concerned?

### Practice

The experimental group was first provided with instructions such as "What is a Science Diary?", "How is it kept?" and the students were informed of the study. The experimental group students were asked to write down on their diaries after each Science and Technology class (twice a week). What was expected from them was to write down what they learned and the incidents that affected them on that class and their emotions on the diary with their own statements after the class. It was checked whether students were keeping diary and how they were keeping it, and they were informed again in case of wrong practices when necessary. The study continued for an education term in such a manner that covered the "Reproduction, Growth and Development among Creatures", "Force and Motion", "Granular Structure of Matter" units.

### Analysis of Data

The statistical analyses were performed via the SPSS 15 software package. For the analysis of the data obtained, ANCOVA was used to compared the means, the independent t-test was used to test the differences between the means and the Pearson Correlation analysis was used to examine the relationship between the learning styles and the science and technology class achievements.

## FINDINGS

### Findings and Interpretations on the First Subproblem

Is there a significant difference between the achievement scores of the experimental group students who kept Science diaries and the control group students who did not obtained from the "Science and Technology Achievement Posttest"? After the practice was completed, the "Science and Technology Achievement Posttest" which covered the subjects within the scope of the study was applied to the experimental and control group students as a posttest. The data obtained from the posttest was applied with the ANCOVA analysis. The analysis results obtained from the posttest achievement score means of the experimental and control group students are given in Table 2 and Table 3.

Table 2. The posttest achievement score means of the experimental and control groups and the means adjusted according to the pretest

Group	N	Mean()	Adjusted Mean
Experiment	26	66.0385	66.616
Control	28	61.2143	60.678
Total	54	63.5370	

Table 3. The ANCOVA analysis results related to the comparison of experimental and control groups' posttest achievement score means by checking the pretest achievement scores

Source of Variance	Sum of Squares	sd	Average of Squares	F	p	Partial Eta Square
Pretest Achievement	1902.448	1	1902.447	6.249	0.015	0.109
Group	25915.03	2	12957.514	42.565	0.000**	0.625
Error	15525.23	51	304.416			
Total	235737	54				

\*\*<0.01

According to the ANCOVA analysis performed to test the difference between the posttest achievement scores, there is a significant difference between the posttest achievement score means of the experimental and control group students in favor of the experimental group ( $p=0.000$ ;  $p<0.01$ ). These results show parallelism with the posttest achievement score means of the experimental and control group students given in Table 2. As seen in Table 3, there is a significant difference between the achievement scores of the experimental group students who kept a Science Diary for an education term and the control group students in favor of the experimental group. It was concluded that the students who had the chance to repeat the subjects by explaining and writing them down with their own statements in their Science Diaries had higher academic achievement.

#### Findings and Interpretations on the Second Subproblem

Is there a significant difference between Science and Technology class attitudes of experimental and control group students at the end of the study? The "Science and Technology Attitude Scale" was applied to the experimental group students who kept Science Diaries and the control group students as a posttest. The results of the posttest attitude scale were applied with ANCOVA for statistical analyzing. The analysis results obtained from the posttest attitude score means of the experimental and control group students concerning their attitudes towards the Science and Technology class are given in Table 4 and Table 5.

Table 4. The posttest attitude score means of the experimental and control groups and the means adjusted according to the pre test

Group	N	Mean()	Adjusted Mean
Experiment	26	91.6923	91.785
Control	28	81.0357	80.949
Total	54	86.1667	

Table 5. The ANCOVA analysis results related to the comparison of experimental and control groups' posttest attitude score means by checking the pretest attitude scores

Source of Variance	Sum of Squares	sd	Average of Squares	F	p	Partial Eta Square
Pretest Attitude	10.45474	1	10.454	0.103	0.749	0.002
Group	6039.199	2	3019.599	29.729	0.000**	0.538
Error	5180.048	51	101.569			
Total	407655	54				

\*\*<0. 01

As seen in Table 4 and Table 5, when the pretest attitude scores are checked, there is a significant difference between the posttest attitude score means of the experimental and control group students as a result of the ANCOVA analysis performed to test the difference between the posttest attitude scores ( $p=0.000$ ;  $p<0.01$ ) and the applied method had an impact on the attitude at the rate of 53.8%. Consequently, it can be said that keeping a Science Diary affected students' attitudes towards the class positively.

#### **Findings and Interpretations on the Third Subproblem**

Is there a significant relationship between the learning styles of the students who kept Science diaries and their Science and Technology class achievements?

The learning styles scale was applied to the experimental group students who kept Science diaries, and the relationship between the data obtained and the data obtained from the "Science and Technology Achievement Posttest" applied as a posttest was calculated with the Pearson Correlation analysis. The analysis results are given in Table 7.

Table 7. The correlation analysis results between the learning styles and Science and Technology class achievements of the experimental group students

Learning Styles	Science and Technology Achievement	
	Correlation Coefficient	p
Visual	0.015	0.942
Audial	-0.099	0.631
Kinesthetic/Tactual	0.428	0.029

As seen in Table 7, as a result of the analysis, a statistically significant difference was found between the between the Kinesthetic/Tactual learning style and the Science and Technology class achievement and no statistically significant difference was found with other learning styles according to the data obtained from the learning styles inventory applied to the experimental group students. The correlation coefficient is 0.428 and this value indicates a mid-level relationship (Büyüköztürk, 2008).

Accordingly, it can be said that keeping a Science diary which is an activity suitable for the Kinesthetic/Tactual learning style had positive impacts on the students having this learning style and increased their achievements.

#### **Findings and Interpretations on the Fourth Subproblem**

What are students' opinions on the practice?

Opinions on the practice were received from the experimental group students who kept the Science diary twice a week during an education term. The questions in the interview form and some answers given are as follows:

**1. Did you enjoy keeping a Science Diary?** 24 out of 26 students answered the question like "Yes, I enjoyed" while other 2 students answered "I was too lazy to keep diary after doing my other homework." It is understood that 92% of the students were content with the practice.

**2. Did keeping diary contribute to your science learning?** Some answers given to the question are as follows: "Yes, we did get to repeat the subjects." "Yes, it contributed so much." "The subject remains in my mind and I succeed in the exams." "No, because the teacher wouldn't mention about the things I wrote on the diary in the next class." "Yes, because we understood the Science better. We wrote down notes." "Yes, because we were repeating the subject while keeping the diary." "It was useful. Not only we were summarizing the subjects but also understood the points we hadn't before and had the chance to study them." It can be concluded from the answers above that the students had the chance to repeat the subjects by writing about them.

**3. What are the positive aspects of keeping a Science Diary as far as you are concerned?** "Repeating the subject/Keeping it in mind by writing down/I don't easily express my feelings." "Apprehending the subject/Improving my writing/Increasing the interest in Science/Expressing my feelings better." "It is fun to keep a Science diary." "I have higher opinions about the Science class now." "Repeating the subjects like in a study time/It changed our feelings about the Science class/We understood the Science class better." "I reinforced what I learned/I had a better grasp of the problems and the subjects." "I expressed my feelings to my teacher/I reviewed what I experienced/I repeated the class." It is understood from the answers that keeping diary provides not only achievement but several contributions to the students.

**4. What are the negative aspects of keeping a Science Diary as far as you are concerned?** The question was answered by all of the 26 students like "It has no negative aspect."

## CONCLUSION AND DISCUSSION

The data obtained from the research showed that there is a significant difference between the achievement scores of the experimental group students who kept Science diaries and the control group students who did not in favor of the experimental group students. It was concluded from this finding that achievements levels increased when the students reconstructed and wrote down what they learned at the school on their diaries and got the chance to repeat it. This result shows parallelism with the following result achieved by Mason and Boscolo (2000) and Günel (2009) who stated that writing for learning purposes supports students to learn the intended concepts in the Science class: achievements of the students who wrote letters to the younger students about the subjects increased. In the research, it was revealed that keeping a Science diary caused an positive increase in the experimental group students' Science and Technology class attitudes. This result coincides with the results of the study by Akçay and Hand (2008) in which activities such drawing pictures, writing poems, letters and keeping diary in the Science class increased their attitude and motivation towards the Science classes. As well as it was seen that the achievement of the experimental group students who kept a Science diary generally increased, the Learning Styles Inventory was applied to measure the learning styles at the beginning of the study and a moderately strong relationship was found between the Kinesthetic/Tactual learning style and the class achievement as a result of the analysis. The writing activity is suitable for students who have the Kinesthetic/Tactual learning style. Accordingly, it can be said that students who perform learning activities in accordance with their learning styles are more successful. In their study, Yazıcılar and Güven (2006) concluded that student achievement and the level of keeping the information in mind increased when activities suitable for different learning styles were performed in the Social Studies class. Özgen and Alkan (2014) found that the learning process applied with activities in accordance with learning styles within the scope of the constructivist learning approach in the Math class increased students' academic achievements and improved their problem solving skills. These results support the findings obtained in the research. In the research, 92% of the students reported that they were content with keeping a Science diary, got the chance to repeat the subjects by keeping diary and they remembered them better later; this finding is parallel with the results of the study conducted by Rivard and Straw (2000). In their study, Günel et al. (2010) investigated the effects of the writing for learning purposes on elementary students' Science achievement and concluded at the end of the study that most of the students compared their thoughts, shared their thoughts freely, learned better by writing and had the chance to repeat the subject while writing a report. It can be said in the light of the findings, results obtained from the research and the observations of the researcher that by keeping diary, the students expressed themselves better; they learned and remember the subjects better since they had the chance to tell about them more freely on their diaries; and the class became more fun for the students because they had the opportunity to blend the course subjects with their own feelings and thoughts on their diaries. Also considering that the research was conducted with a limited number of students, the following recommendations can be made in accordance with the results:

1. Students can be encouraged to keep diary. Keeping diary will therefore be a different activity for repeating the course subjects at home.
2. Students should not be forced to keep a Science diary. It should be noted here that there may be students with different learning styles in the class who do not like the activity of writing for learning purposes.
3. Encouraging students to keep a Science diary for longer periods, not only its effects in terms of academic achievement but also its psychological and affective attainments for the students can be examined.
4. Science Diaries can also be used for receiving feedbacks after the instruction in the class because students transfer the information they construct in their minds to their diaries. By this means, the teacher can be more informed of the learning of students (wrong, deficient, right, etc.) and their points of view and therefore review their educational activities within the class.

## REFERENCES

- AKÇAY, H. VE HAND, B. (2008, Ağustos). *Farklı şekillerde uygulanan yaparak ve yazarak öğrenme metotlarının ilköğretim öğrencilerinin fen öğrenimine katkısı*. VIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi'nde sunulan bildiri, Abant İzzet Baysal Üniversitesi, Bolu
- ARSLAN, Mehmet (2007). *Eğitimde Yapılandırmacı Yaklaşımlar*. Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi, 40, 1, 41-61
- AŞKAR, Petek.ve AKKOYUNLU, Buket (1993). Kolb Öğrenme Stili Envanteri. *Eğitim ve Bilim*, 87, 37-47.
- BEŞOLUK, Şenol., ve ÖNDER, İsmail (2010). Öğretmen Adaylarının Öğrenme Yaklaşımları, Öğrenme Stilleri ve Eleştirel Düşünme Eğilimlerinin İncelenmesi. *İlköğretim Online*, 9(2), 679-693.
- BİLGİN G., (2005) Öğretmenlerin Öğrenme Stratejilerine Göre Değiştirmesi Gereken Tutum ve Davranışları. *Yüksek Lisans Tezi*, İstanbul Marmara Üniversitesi Fen Bilimleri Enstitüsü: İstanbul
- BÜYÜKÖZTÜRK, Şener (2008). Veri Analizi El Kitabı. *Pegem A Yayınları*.

- DİKBAŞ, Y. ve KAF HASIRCI, Ö. (2007) Öğrenme Stratejilerinin Öğretiminin ve Ders İşlenişinde Kullanımının Öğrencilerin Akademik Başarılarına ve Tutumlarına Etkisi. 16. Ulusal Eğitim Bilimleri Kongresi, 5-7 Eylül.
- DOĞAN, N. ve ÇAVUŞ, S.(2008, Ağustos). İnfomal öğrenme ortamlarında fen konularının öğrenilmesine yazma etkinliğinin etkisi. VIII. Ulusal Fen Bilimleri ve Matematik Eğitimi Kongresi'nde sunulan bildiri, Abant İzzet Baysal Üniversitesi, Bolu
- EKİCİ, Gülay (2003). Uzaktan eğitim ortamlarının seçiminde öğrencilerin öğrenme stillerinin önemi. Hacettepe Üniversitesi Eğitim Fakültesi Dergisi, 24, 48-55.
- ERDEM, Ali Rıza (2005). Öğrenmede Etkili Yollar: Öğrenme Stratejileri ve Öğretimi. İlköğretim- Online Dergisi. 4(1),1-6.
- ERSOY, S., (2003). İlköğretim 6.,7. ve 8. Sınıf Öğrencilerinin İngilizce Dersindeki Başarılarına Göre Öğrenme Stilleri ve Çalışma Alışkanlıklarının İncelenmesi, Yüksek Lisans Tezi, Selçuk Üniversitesi, Konya.
- GRAHAM, Steve., (2008) Research on writing development, practice, instruction, and assesment: Introduction to a special issue of reading and writing. Read Writ,21:1-2.
- GÜNEL, M., UZOĞLU, M. ve BÜYÜKKASAP, E. (2009). Öğrenme amaçlı yazma aktivitelerinin kullanımının ilköğretim seviyesinde kuvvet konusunu öğrenmeye etkisi. Gazi Üniversitesi Gazi Eğitim Fakültesi Dergisi, 29(2), 379-399.
- GÜNEL, M. ve Diğerleri, (2010). Yapararak Yazarak Bilim Öğrenimi- YYBÖ Yaklaşımının İlköğretim Öğrencilerinin Fen Akademik Başarısına ve Fen ve Teknoloji Dersine Yönelik Tutumuna Etkisi. Eğitim ve Bilim, Cilt 35, Sayı 155
- GÜVEN, M.(2004). Öğrenme Stilleri ile Öğrenme Stratejileri Arasındaki İlişki. Doktora Tezi, Anadolu Üniversitesi Eğitim Bilimleri Enstitüsü: Eskişehir
- KLEIN, Perry (1999). Reopening Inquiry into Cognitive Processes in Writing-To-Learn. Educational Psychology Review, 11 ( 3), 203-270.
- ÖZDEN, Y. (2005). Öğrenme ve Öğretme. Pegem AYayınılık Özel Eğitim Hizmetleri Tic. Ltd. Şti., Ankara
- ÖZGEN, G. ve ALKAN, H. (2014). Yapılandırıcı Öğrenme Yaklaşımı Kapsamında, Öğrencilerin Öğrenme Stillere Uygun Öğrenme Etkinliklerinin Akademik Başarı ve Tutuma Etkileri: Fonksiyon ve Türev Kavramı Örnekleme. Turkish Journal of Computer and Mathematics Education Vol.5 No.1 , 1-38
- PEKER, M., MİRASYEDİOĞLU, Ş. ve AYDIN, B.(2004). Matematik Öğretmenlerinin Dikkate Alabilecekleri Öğrenme Stilleri: McCarthy modeli. Milli Eğitim Dergisi,163.
- RIVARD, P. L., & STRAW, B. S. (2000). The effect of talk and writing on learning science: An exploratory study. Science Education, 84, 566-593
- SUTHERLAND, P., BADGER, R., WHITE, G. (2002). How New Students Take Notes at Lectures. Journal of Further and Higher Education, 26(4):377-388.
- TAY, Bayram.(2005). Sosyal Bilgiler Ders Kitaplarında Öğrenme Stratejileri. Gazi Üniversitesi Kırşehir Eğitim Fakültesi Dergisi, c. 6, s. 1, ss. 209-225.
- YAZICILAR, Ö. ve GÜVEN, B. (2009). "Öğrenme Stili Özelliklerinin Dikkate Alındığı Öğretim Etkinliklerini Uygulamanın Akademik Başarı, Tutum ve Hatırda Tutma Düzeyi Üzerindeki Etkisi". İlköğretim Online, 8(1), 9-23
- YILDIRIM, A., DOĞANAY, A. & TÜRKOĞLU, A. (2009). Okulda başarı için ders çalışma ve öğretme yöntemleri (2. Baskı). Ankara: Seçkin Yayıncılık
- YILDIZ, A. ve BÜYÜKKASAP, E. (2011). Öğretmen adaylarının Compton olayını anlama düzeyleri ve öğrenme amaçlı yazma aktivitelerinin akademik başarıya etkisi. Uluslararası İnsan Bilimleri Dergisi, 8 (1), 1643-1664.
- YILDIZ, A. (2012). Letter as a writing to learn activity and the addressee. Mevlana International Journal of Education, 2(2), 1-10.
- WEINSTEIN, C. E. ve MAYER, R. E. (1986). The Teaching of Learning Strategies (Third Ed), Edited by M. C. Wittrock. Handbook of Research on Teaching, New York: MacMillan Company