



Students' Views And Estimation Levels Concerning Their Self-Achievements Based On Learning Diaries: A Case Study Of The Human Anatomy Course*

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ABSTRACT

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Purpose: The learning diary is an alternative assessment tool that proves what learners learn, to what extent they learn, and reflects the learning process. This study aims to analyze the reflection in the learning diaries kept by the third-grade science teachers on their procrastination behaviors, their expectations of achievements, and their views on their learning process. To enable them to gain the ability to estimate their success and to approach it from an objective and critical perspective. **Method:** This research was conducted with a convergent parallel design from mixed-methods. The survey and case study models were used in the quantitative and

the qualitative phase respectively. Sixty-eight student teachers were selected based on criterion sampling. Both quantitative and qualitative data were concurrently collected for eleven weeks. A learning diary developed by the researchers, four quizzes, mid-term and final exam documents, and a structured interview form consisting of four questions were used. **Results:** Learning diaries reduced students' procrastination behavior, provided them with regular study behavior and attendance to class. Self-control taught them to use time effectively, encouraged them to research, gave responsibility, reduced their exam anxiety, and reduced attempts to cheat. As the process progressed, students estimated their success more realistically. **Implications for Research and Practice:** Learning diaries that build a large number of positive behaviors should be used by teachers and lecturers in their teaching. This can be through special adaptations in their subject areas, especially, the use of "digital diaries" and "blogs" is encouraged.

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Introduction

Learning diaries are one of the alternative assessment tools that reflect what learners learn and to what extent they learn. They are written documents that prove the learners' learning adventure (Korkmaz, 2004). Alternatively, learning diaries (Moon, 1999; Ayyıldız & Altun, 2013; Aksar & Guneri, 2018), can be referred to as a collection of notes describing classroom experiences (Ruiz-Primo, Li & Shavelson, 2002), or to other researchers as "science notebooks" (Uysal et al., 2016), "reflective diaries" (Thorpe, 2004; Akkuzulu, 2011; Cengiz, 2014; Can & Altuntas, 2016), "work logs" (Guvenc, 2011), "lesson diary" (Cavus & Ozden, 2012; Cavus, 2015), "thinking agenda" (Ozsoy, 2008; Peker et al., 2014) and "students' diaries" (Erduran Avci, 2008; Demirci, 2016).

In the 21st century's competitive world, education and teaching aim to increase student's awareness of their skills as well as the real world. Studies specifically aimed at examining the problems and procrastination behaviors of university students revealed that the vast majority of them prepare for the exams a night before the exams (Kagan, 2010; Berber Celik & Odacı, 2015). Despite the feedback received in classes, if students do not update their diaries daily, they will fall short of achieving their learning goals. Students' high expectations of success are solely based on their hard efforts during the exam week, expecting to get high marks. When the results are announced, the student is disappointed and it takes time for a disappointed student to recover and gain the motivation to learn.

With this in mind, learning diaries could be one of the best ways to prolong the time between studying for the exam and the date of the exam. This could reduce the potential frustration by reducing procrastination behavior, and provide the opportunity to improve by reinforcing what was learned, simultaneously, realizing the knowledge and skills that cannot be gained. At the end of a lesson, a detailed examination of a learning diary serves as a means to evaluate learning in addition to being a method of learning and improving awareness.

The students who are busy with the learning diary might ask questions like; "What did I learn? What is still unclear to me? What is the connection between what I have learned now and before? How did I feel about this lesson/subject? What do I pay attention to during the course and what does this information mean to me? As a human being, as a member of a community, or as an expert in my field, how can I use the things that I have learned? To what extent I have learned this topic? What prevents me from understanding? What will be my plan to learn the part that I could not learn?" Through asking these kinds of questions, students can develop insight into the learning process, and become aware of their learning strategy.

On the other hand, a teacher who uses the learning diary in his/her class receives feedback concerning his/her teaching process. At the end of the exam or after the end of the semester, noticing that some topics have not been learned will be too late to catch-up. Since Human Anatomy and Physiology (Anatomy) course has strong connections with life, lack of knowledge in this course may create great deficiencies in

the health guidance in a prospective teachers' life and profession. In Turkey, science teachers in their first appointments are sent to distant residential areas. There, they become crucial members of the health clubs in their schools, where they are expected to be conscious first aid facilitators and use their knowledge of human anatomy.

For this reason, aspiring teachers (current students) who keep a learning diary in the Anatomy lesson, regularly review their knowledge every week, approach their learning goals from a realistic and critical perspective, and present high awareness in recognizing and improving on their deficiencies.

This study aimed to analyze the reflections in the learning diaries kept by the third-grade science teachers in the Human Anatomy and Physiology course on the learning process, their procrastination behaviors, their expectations of achievements, and their views on their learning process, to enable them to gain the ability to estimate their success and to approach it from an objective and a critical perspective.

The sub-questions were as listed below:

1. Can students realistically estimate their achievements?
2. Can learning diaries be a tool to change academic procrastination behavior?
3. What are the students' views and suggestions regarding keeping the diary process?

Even though in the literature, there are various studies on the use of learning diaries particularly at primary and secondary school levels, there is a very limited number of studies on learning diaries applied at the university level. On the other hand, there was no study conducted throughout the semester in which students estimated their success in the Human Anatomy and Physiology course. This study differs from similar studies because it aims to determine students' learning levels, estimations of their success each week, lasting for eleven weeks, and covering all units in the Anatomy course. It is thought that this study can contribute to the literature that aims to help prevent procrastination behaviors in students, support their development process, self-control, and provide students with a method to realistically estimate their success and failure.

Method

Research Design

This study was conducted through convergent parallel mixed method design (Creswell & Plano Clark, 2015) in which quantitative and qualitative stages are applied concurrently. *In the quantitative part* of the study, the survey model which is a descriptive research method was used. *In the qualitative part*, the data obtained through open-ended questions and content analysis of the diaries using the case study model were examined (Yıldırım & Simsek, 2008).

Study Group

The sample of this research was determined using criterion sampling which is a

non-random sample type. It includes the selection of cases that meet some predetermined criteria of importance, which was previously determined by criterion sampling (Patton, 2001). Therefore, 68 students who study at the Department of Science Education, completed Biology-I and Biology-II courses, attended the Anatomy course, and volunteered to keep a learning diary, participated in this study.

Research Instruments and Procedures

This research was carried out with the convergent parallel design approach because both *quantitative and qualitative data* were concurrently collected for eleven weeks. As data collection tools, a learning diary developed by the researchers, four quizzes, mid-term and final exam documents, and a structured interview form consisting of four questions were used. Quizzes, mid-term and final exam documents provided *quantitative data*, whereas learning diaries and structured interviews provided *qualitative data*.

During the eleven weeks, students were requested to keep a learning diary for each lesson. Then, they were asked to score their learning level for that week. Their opinions, criticisms, and suggestions on the positive and negative effects on the learning level of the subject were recorded. The students were also asked to estimate their midterm and final exam grades by taking into account their learning level, then write the estimated grades on their exam papers. The relationship between students' grades, weekly learning levels, and estimations was examined.

Table 1

Data Collection Process

week 1	week 2	week 3	week 4	week 5	week 6	week 7	week 8	week 9	week 10	week 11
learning diary	learning diary	learning diary	learning diary	learning diary	learning diary	learning diary	learning diary	learning diary	Evaluation of teaching method and topics	learning diary
learning level	learning level	learning level	learning level	learning level	learning level	learning level	learning level	learning level		learning level
first quiz		second quiz		mid-term exam	third quiz		fourth quiz		Final exam	Final exam
estimation of grades		estimation of grades		estimation of grades	estimation of grades		estimation of grades			estimation of grades

As seen in Table 1, four quizzes, one midterm and one final exam were conducted during the data collection process. In Figure 1, an example of a learning diary kept is given.

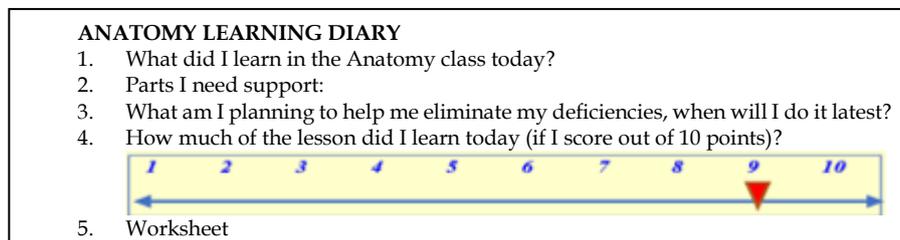


Figure 1. Example of Learning Diary

Analysis of Data

The data obtained were analyzed by quantitative and qualitative analysis methods. *Quantitative Research:* Descriptive analysis was utilized in quantitative data analysis. *Qualitative Research:* Content analysis was carried out independently by two researchers, and Kappa coefficient value (Kılıc, 2015) was calculated as 0.91. To ensure anonymity, the students participating in this study were coded like "S3M", where "S" represents the participant, the numbers "1 to 68" represent the sequence number, "F" represents female students and "M" represents male students. The answers to the interview questions and the diaries were examined. Themes were later created after the codes were divided into common categories.

Associating quantitative and qualitative data: Qualitative and quantitative data were analyzed separately and finally, as a requirement of the convergent parallel design, these data were interpreted by correlation.

Validity and Reliability of Data

Quantitative Research: In this research, quiz exams, midterm, and final exams were used in collecting quantitative data. The academic achievement tests, the content validity, construct validity, and appearance validity of these tests was provided through expert opinion. Since the difficulty index values (p_j) of the items in the tests were not equal, the internal reliability of the tests was measured via Kuder Richardson-20 (KR-20) coefficient test. KR-20 coefficients of quizzes and exams were respectively; KR-20(Q1)=0.88; KR-20(Q2)=0.92; KR-20(Q3)=0.93; KR-20(Q4)=0.89; ME=0.96; F=0.92. Therefore test reliability was confirmed since the KR-20 coefficients were more than 0.80 (Bademci, 2011).

Qualitative Research: While the reliability of the research is ensured by using multiple data sources (data diversification - Triangulation), the validity and reliability of qualitative data were obtained through consulting two independent expert opinions. The reliability of qualitative data was ensured by using the Miles and Huberman formula (Miles & Huberman, 1994; Creswell, 2003; Baskale, 2016). During the creation of the codes and themes obtained in the content analysis, as a general rule, the similarity ratio of the data set encoded by different experts is important. This similarity, which is called internal consistency in Miles and Huberman (1994) model and conceptualized as a consensus between experts, is calculated using the formula: $\Delta = C \div (C + \delta) \times 100$. In the formula, Δ : Reliability coefficient, C: Number of subject/terms agreed upon, δ : indicates the number of subjects/terms on which there is no consensus. According to the coding control, which gives internal consistency, the consensus between coders is expected to be at least 80%. The diaries and interviews of the students were examined by two independent experts, and the consistency between the scores (rater consistency) was coded for the same data set by different coders to make the coding free from the individual influence of the researcher. The consensus among coders was found to be 0.93.

Results

The findings obtained from the analysis of qualitative and quantitative data are presented in tables and figures in this section. In Table 2 and Figure 2, the arithmetic average of students' learning level, estimation of success, and exam grades, is given.

Table 2

Learning Level, Estimation of Success, And Actual Exam Grades Over Time

	Learning level	Estimate	Actual grade
1.week	19	20	11
3.week	18	12	10
5.week	17	19	15
7.week	19	18	17
9. week	16	15	16
11.week	19	17	18



Figure 2. *Learning Level, Estimation of Success, And Actual Exam Grades*

As can be seen in Table 2 and Figure 2, in the first week of the research, there are huge differences between students' success estimations and their actual exam scores, and they do not seem to have realistic expectations. After the fifth week, the lines approach each other, and at the end of the eleventh week, there are many similarities between students' success estimations and their actual exam grades, and the students seem to start making more realistic estimations.

The descriptive analysis results showing the distribution of the answers given by the students to the questions regarding whether the procrastination behavior and personality coincide with the learning diary are shown in Table 3.

Table 3
Distribution of Procrastination Behavior And Eligibility to Keep A Diary By Gender

		f (%)	Gender		Total
			Female	Male	
Procrastination: I Prepare for the exam the night before the exam	Most of the time	f (%)	24 (% 57.1)	20 (% 76.9)	44 (% 64,7)
	Sometimes	f (%)	12 (28.6)	2 (7.7)	14 (20,6)
	Seldom	f (%)	6 (14.3)	4 (15.4)	10 (14,7)
	Total	f (%)	42 (100)	26 (100.00)	68 (100)
Eligibility: My personality is not suitable for keeping the learning diary	Isn't suitable for me	f (%)	8 (%10)	6 (%32.1)	14 (20,6)
	Partially suitable	f (%)	10 (%23.8)	7 (26.9)	17(25,0)
	Suitable for me	f (%)	24 (57.1)	13 (50.5)	37 (54,4)
	Total	f (%)	42 (100)	26 (100)	68 (100)

The distribution of procrastination behavior and personality eligibility to keep a diary by gender show that; 24 of the female students (57%) and 20 of the male students (76.9%) prepare for the exam the night before the exam, that is, they were procrastinating. When the answers to the question of whether keeping a learning diary which requires patience and continuity is suitable for their personality is examined, by students who will be dealing with a job that requires patience and continuity while doing their teaching profession, it is seen that 37 (54.4%) of the students stated that they could work patiently for a long time.

Questions were asked about whether keeping a learning diary, which requires patience and continuity, complied with the student's personality. When their answers are examined, it is seen that 54.4% stated that they can work patiently for a long time.

Table 4
Distribution of Procrastination Behavior by Success Expectation

		f (%)	If we take into account your out-of-school work, do you think your current success is well enough?			Total
			Insufficient	Medium level	So sufficient	
Usually	f (%)	21 (47.7)	3 (6.8)	20 (45.5)	44 (100.00)	
Sometimes	f (%)	8 (51.1)	3 (21.4)	3 (21.4)	14 (100)	
Never	f (%)	7 (70.0)	0(0.0)	3 (30.0)	10 (100.00)	
Total	f (%)	36 (52.9)	6 (8.8)	26(38.2)	68 (100.00)	

The students were asked to what extent they found their current success sufficient considering their out-of-school work. Though 52.9% stated that they did most of the

repetitions of the lesson the night before the exam and they found their success insufficient, they thought that their study deserved more grades.

More than half of the students postponed their preparations for the exams to the night prior to the exam and stated that the grade they got did not compensate for their excessive effort spent. However, students who study regularly spend more time until the exam date than those who study for the exams to the night prior to the exam.

Table 5 shows the distribution of success expectation, openness to criticism, and self-control. Based on their estimation levels, students were separated into three categories including those who make estimations with a difference of 0-5 points to their real grade were called "close" estimators, those who make estimations with a difference of 6-10 points to their real score were called "intermediate" estimators and those who make estimations with a difference of 11 points or more were called "distant" estimators.

Table 5

Distribution of Success Expectation, Openness to Criticism, and Self-Control

Success expectation		I criticize myself objectively (I set realistic goals for myself)			Total
		I can criticize myself objectively	I am partially open to criticism	I am open to others' criticism	
Close estimators (0-5 points)	f (%)	5 (50.00)	0 (0.0)	5 (50)	10 (100)
Intermediate estimators (6-10 points)	f (%)	8 (53.3)	2 (13.3)	5 (33.3)	15 (100)
Distant estimators (11 and above)	f (%)	24 (55.80)	4 (9.3)	15 (34.9)	43 (100)
Total	f (%)	37 (54.4)	6 (8.8)	25 (36.8)	68 (100.0)

55.8% of the students declared that they criticized themselves objectively even though their grades were far from their estimations. Especially the fact that among the distant estimators, 24 students claimed to be able to criticize themselves objectively and 15 students claimed to be open to criticism from others. In short, 39 students claimed to be open to criticisms, which is an issue that needs to be further considered and studied.

Students were asked whether keeping a learning diary was suitable for their personality, whether they could deal with jobs requiring patience, whether their work was interrupted when studying, and whether they were distracted. Cross-table results regarding the levels created from the students' responses are presented in Table 6.

Table 6
Distribution of Suitability for Preparing A Learning Diary By Self-Control Level

Eligibility: suitability of personality to the learning diary		Self-control: phone calls, incoming, outgoing, and other reasons require me to take a break from my study.			
		Weak	Moderate	Fairly good	Total
Isn't suitable for me	f (%)	3 (18.8)	4 (25.0)	9 (56.3)	16 (100)
Partially suitable	f (%)	3(21.4)	2 (14.3)	9 (64.3)	14 (100)
Suitable for me	f (%)	10 (26.3)	11 (28.9)	17(44.7)	38 (100)
Total	f (%)	16 (23.5)	17 (25.0)	35 (51.5)	68 (100)

Since preparing a learning diary is a long-term work, the students were asked whether their studying time was short, whether their studies were interrupted for various reasons, whether their attention was distracted during their study, and whether keeping a learning diary was suitable for their personality. Thirty-five (51.5%) of the students stated that their self-control was fairly good, 17 (25%) were moderate, and 16 (23.5%) were weak.

On the other hand, 17 of 38 students (44.7%) who stated that keeping a learning diary was suitable for their personality believed that their self-control was high and their personality was prone to keeping a learning diary, while 10 (26.3%) had poor self-control, 11 (28.9%) described their self-control as moderate. These results indicate that students had problems in defining their ability limits.

After the diary-keeping process was completed, students were asked to state their positive and negative views concerning this process. The results of content analysis are presented in Table 7.

Table 7
Content Analysis of Students' Views on Keeping Learning Diaries

Themes and Codes		N	Participants
Positive views	<i>Contributes to professional development</i>	49	S1F, S66F, S7M, S17F, S21F
	<i>instructive</i>	56	S4F, S26F, S8F, S10F, S12F
	<i>Funny</i>	44	S10F, S32F, S45F, S16M
	<i>Gives responsibility</i>	33	S4F, S6F, S7M, S42F, S57M
	<i>Beneficial</i>	30	S18M, S19M, S32F, S20F
	<i>Stimulating</i>	18	S6F, S8F, S32F, S67M
	<i>Mind developing –eye-opening</i>	16	S42F, S16M, S21F
	<i>Self-control</i>	14	S12F, S44M, S51F
	<i>Self-criticism</i>	6	S8F, S10F, S12F
	<i>Know oneself</i>	3	S2F, S4F
Negative views	<i>Time-consuming</i>	6	S17F, S41F
	<i>Tiring</i>	5	S2F, S29M, S53M
	<i>Unnecessary</i>	4	S19M, S61F

Table 7 continue

<i>Themes and Codes</i>	<i>N</i>	<i>Participants</i>
<i>Best learned topics</i>	<i>Movement system</i>	60 S30F, S32F, S15F, S16M
	<i>Nervous system</i>	47 S17F, S18M
	<i>Circulatory and lymphatic system</i>	37 S8F, S5F
	<i>All</i>	58 S12F, S55F, S19M, S21F
<i>Least learned topics</i>	<i>Digestive system</i>	17 S15F, S16M, S19M
	<i>None</i>	5 S17F
<i>Suggestions</i>	<i>More time should be devoted for keeping diaries</i>	55 S20F, S12F, S58M
	<i>Should be simpler</i>	43 S34F, S20F
	<i>Next year- should be applied in every lesson</i>	27 S22F, S34F, S56F, S7M, S61F
	<i>Should not be applied</i>	5 S29M, S53M

Positive aspects of learning diaries were pointed out by students as “it contributes to their professional development, it is instructive, it is funny, it gives responsibility, it is useful, it is stimulating, it is mind developing, eye-opening, it provides self-control and self-criticism, and it helps to know oneself”. Despite this, negative opinions were also expressed as learning diaries are “time-consuming, tiring and unnecessary”.

From the participants, 85.29% stated that they learned all the units best, especially the "movement system, nervous system, circulatory and lymphatic systems", and 17% stated that they learned the "Digestive System" the least. Students suggested that “More time should be devoted for keeping diaries, it should be simpler and, keeping diaries should be applied in every lesson of the following year”.

I always expected high grades and got low, now I expect low grades, it comes high. Nothing has changed. Teacher, did my prediction not hold again? (S67M)

It is not a lie, we always studied together with my roommates the night before the visa exam. Now, when I had to keep a diary, I got used to studying on a daily basis. I attend every lesson. I'm taking the study games from the lecturer. Even the health sciences students in my room cannot do the worksheets. I changed a lot this year. Keeping a diary helped me in my other lessons too. Thank you very much. (S44M)

In short, it was a useful lesson that taught while entertaining and it has contributed a lot to my teaching. I wouldn't have thought that keeping a diary would be so instructive. (S45F)

Before taking this course, I had heard from the health sciences students that it was difficult. Now I have a course in my life that I will not forget. We had a lot of fun, I really enjoyed it. (S65F)

I don't want to miss any of the lessons. I wonder, “What emoji will the teacher stick in my diary? What will she say? What will we learn today? What will we play?” Then I go to the dormitory and work on my diary,

I realize that all topics are in my mind. I realized that I was listening more carefully to keep in a diary.(S26F)
 I wish there was something like this diary in every lesson, and I would like to study for one or two hours after each lesson. I will do it when I become a teacher. My students will surely love it. I plan to develop the games in the diaries as well, different varieties, but from now on, the diaries should not be as detailed as this, but it should contain just two questions(S34F)

Since this research is carried out with a convergent parallel design, qualitative and quantitative data collected concurrently should be correlated at the interpretation stage. Therefore, in Table 8, evidence regarding the correlation of the results on learning diaries and procrastination behavior is presented.

Table 8
Relationship of the Qualitative And Quantitative Findings

Criteria	Quantitative findings	Qualitative findings	Correlation of the qualitative and quantitative findings
1. Anatomy learning diaries motivate students in out of school activities	\bar{x} =8.54 suitable for me (10)	Makes you study regularly (93.45%) It is fun (89.54%) Prevents absenteeism (85%) Gives responsibility (83%) Teaches to use time effectively (79.70%) Directs to research (67%) Makes curious (61.97%) Enjoyable (10.56%) Promotes productivity (8.45%)	Qualitative data support quantitative data
2. Keeping learning diary develops positive behavior	\bar{x} =9.81. suitable for me (10)	Prevents procrastination habit (80.43%) Provides regular repetition (78.60%) Decreases exam anxiety (73.81%) Makes note-taking habit (72%) Allows me to know myself (60%) Makes you love your job (59%) Reduces the habit of cheating (46%)	Qualitative data support quantitative data

When the quantitative finding of "Anatomy learning diaries motivate students in out of school activities" was evaluated, it scored an average of 8.54 out of 10, students said that "keeping a learning diary makes you study regularly, it is fun, prevents absenteeism, gives responsibility, teaches to use time effectively, directs to research, makes curious, enjoyable, promotes productivity" (Table 8). Therefore, qualitative and quantitative findings support each other in this item. On the other hand, the quantitative finding of "Keeping learning diary develops positive behavior" scored an average of 9.81 out of 10, students stated that "keeping a learning diary prevents procrastination habit, provides regular repetition, decreases exam anxiety,

makes note-taking habit, allows me to know myself, makes you love your job, reduces the habit of cheating". So, qualitative and quantitative findings support each other in this item as well.

Discussion, Conclusion, and Recommendations

This study was carried out to analyze the reflection of the learning diaries kept by the third-grade science teachers in the Human Anatomy and Physiology course on the learning process, their procrastination behaviors, their expectations of achievements, and their views on their learning process, to enable them to gain the ability to estimate their success and to approach it from an objective and a critical perspective. Sixty-eight students in the third year of the Science Education Department at the Education Faculty of a state university participated in this research. The sample size was determined using criterion sampling.

The analysis results of the learning diaries showed that as keeping learning diaries progressed, students began to evaluate their success and failures with a more realistic approach and gained the ability to make appropriate exam grade predictions to their learning level. In parallel to these findings, Ozsoy (2008) points out that in a thinking agenda (learning diary), students reflect their thoughts, become aware of their uncertainties and inconsistencies, take notes, and comment on how they cope with difficulties. Therefore, keeping a learning diary is one of the tools for developing metacognition. Similarly, Arsal (2010) found that keeping learning diaries contributes to students' intrinsic motivation, task awareness, and metacognition. Cavus (2015) also determined that keeping a science learning diary had a positive impact on students' level of metacognitive awareness and contributed to their academic success in the Science and Technology course.

In this study, for students, keeping an anatomy diary; reduces procrastination behavior, gives them regular study behavior, enables them to attend classes regularly, provides self-control, teaches them to use time effectively, encourages them to do research, gives them responsibility, decreases exam anxiety and reduces attempts to copy, makes them to be aware of the subjects they have not learned and to take timely action that contributes to learning. Consistently, Demirci (2016) revealed that keeping a learning diary helps students to constantly observe their learning process and achievement. Tomberg et al., (2013) stated that blogs are tools that control and coordinate the lesson process and create a personalized learning environment for teachers; while Akkoyunlu et al., (2016) revealed that reflective journals contributed to pre-service teachers' personal and professional development, helped them to evaluate themselves holistically, monitor their development, gain a critical perspective, express their sense of responsibility and gain self-control over their learning.

Studies conducted with students point out that the diaries kept in the lessons help students to (i) develop positive attitudes towards the lesson and the science teacher (Cavus & Ozden, 2012; Can & Altuntas, 2016), (ii) increase interest and motivation in science lessons (Cavus & Ozden, 2012; Ozdemir, 2019), (iii) provide opportunities for

students to express their feelings and thoughts (Aymen Peker et al., 2014), iv) improve the students' listening skills, and increase the retention and amount of what they have learned (Can & Altuntas, 2016), v) contribute to students' writing skills (Akkoyunlu et al. 2016; Can & Altuntas, 2016).

In this study, male students stated that they prepare for the exam lessons the night before the exam. Their academic procrastination behavior seemed to be more than female students. In the literature, it is known that the problem of procrastination which is common among university students, differs according to gender. There are results parallel to the results of this research, for example; Prohaska et al., (2000), Uzun Ozer (2005), Balkıs & Duru, (2009), Kandemir (2010), Zakeri et al., (2013) determined that male students exhibit more academic procrastination behaviors than female students. The opposite of this; Paludi & Frankell-Hauser (1986), Celik & Odacı (2014), Kaya & Odacı (2019) found out that female university students have higher academic procrastination tendencies than male students.

Another result of the study is that the majority of students were far from predicting their exam grades, they were weak in objectively criticizing themselves and setting realistic goals for themselves. Almost half of the students participating in this study had low self-control, and this situation creates problems in terms of using time effectively and putting daily activities in the order of importance. In a study conducted with teacher candidates, Akkoyunlu et al., (2016) found that regularly kept diaries give individuals responsibility and provided self-control. In general, self-management means time management and in particular, it means controlling the events in daily life (Guclu, 2001). Learning diaries contribute to students' time management strategy (Arsal, 2010). Therefore, when keeping a diary becomes a habit, it will mean that the problems encountered will disappear. Similarly, students who kept the diaries regularly stated that the diaries led them to plan and increase their awareness of their learning processes, particularly while structured diaries provided more comprehensive reflections on students' study time, unstructured diaries enabled more qualified and in-depth reflection (Guvenc, 2011).

Also, this study revealed that at the end of eleven weeks of keeping learning diaries, students had positive learning experiences in many aspects including having regular study habits, development of positive behaviors towards studying, effective time, and anxiety management. Diary keeping has a positive contribution to both the academic success of students and the permanence of learning (Eker & Coskun, 2012). In her research, Cavus (2015) revealed that through keeping a learning diary, students had the opportunity to think more about issues as to use scientific language, to improve their research and investigation skills, to evaluate themselves and to reinforce what they have learned, to transfer what they have learned to other areas, to develop their ability to draw shapes and graphics. On the other hand, Ayyildiz & Altun (2013) found that keeping a learning diary was positively effective in overcoming the Mathematics misconceptions that students have. Besides, the learning diaries were more effective to overcome misconceptions of female students than male students.

Learning diaries can be used as valid and reliable tools in the evaluation process (Erduran Avci, 2008). Through rubrics, students can realize the points where they can improve themselves (Peker et al., 2014). Consistently, this research showed that students' learning diaries could be used in formative assessment for students and teachers. It was observed that as the process progressed, students started to predict their success more realistically. Therefore, almost all students (98%) suggested keeping learning diaries in the following year.

As mentioned earlier, this study differs from similar studies, since it applied at the university level, was conducted throughout the semester, and covered all units of the course. Even though this study is limited to 68 pre-service teachers who are studying in the Science Education Department of the Education Faculty of a state university, the eleven weeks application process, eleven learning diaries (one per week, 68x11), four quizzes, and one midterm and one final exam; the numbers of participants and the data diversification were the strong points of this research. However, this study is limited to Human Anatomy and Physiology course, it is suggested for future research to focus on different subject areas.

Finally, based on the results obtained from this study; it might also be suggested that learning diaries should be implemented by teachers and lecturers in their teaching through making special adaptations to their subject areas, and especially, "digital diaries" and "blogs" should be designed and used during the pandemic process. In addition, it is recommended to use diaries, especially diaries specific to the field (e.g. science diaries) not only in pre-service education but also in in-service education. In-service education programs and workshops on how to use learning diaries by presenting good examples and its benefits should also be planned.

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Öğretmen Adaylarının Öğrenme Günlüklerine Dayalı Başarılarına İlişkin Görüşleri Ve Tahmin Düzeyleri: İnsan Anatomisi Dersi Örneği

Atıf:

- Polat, D., Godek, Y., & Kaya, V. H., (2021). Students' views and estimation levels concerning their self-achievements based on learning diaries: A case study of the human anatomy course. *Eurasian Journal of Educational Research*, 94, 213-232, DOI: 10.14689/ejer.2021.94.10

Özet

Problem Durumu: Öğrenme günlüğü öğrencinin derste neyi, ne kadar öğrendiğini yansıtan alternatif değerlendirme araçlarından biri olup, öğrencinin öğrenme serüvenini kanıtlayan yazılı belgelerdir (Korkmaz, 2004). Ruiz-Primo ve Shavelson (2002)'a göre öğrenme günlükleri öğrencilerin sınıftaki tecrübelerinin kaydını sağlayan notların bir derlemesidir. Alanyazında "öğrenme günlüğü" (Moon, 1999; Ayyıldız ve Altun, 2013; Aksar ve Güneri, 2018) kavramı araştırmacılar tarafından "bilim defterleri" (Uysal, vd. 2016), "yansıtıcı günlük" (Thorpe, 2004; Akkuzulu, 2011; Cengiz, 2014; Can ve Altuntaş, 2016), "çalışma günlükleri" (Güvenç, 2011), "ders günlüğü" (Çavuş ve Özden, 2012; Çavuş, 2015) ve "düşünme ajandası" (Özsoy, 2008; Peker, vd. 2014), "öğrenci günlükleri" (Erduran Avcı, 2008; Demirci, 2016) olarak da ifade edilmiştir. 21. yüzyılın rekabet temelli dünyasında eğitim ve öğretim, öğrencinin gerçek dünyanın yanı sıra kendi becerilerinin de farkına varması temeline dayalıdır. Özellikle üniversite öğrencilerinin sorunlarını ve ertelemecilik davranışını incelemeye yönelik araştırmalar (Kağan, 2010; Berber Çelik ve Odacı, 2015) üniversite öğrencilerinin büyük bir çoğunluğunun sınavlara son gece çalıştıklarını ortaya koymuştur. Bu durum ise onların son günkü yoğun çabalarını dikkate aldıklarından dolayı başarı beklentilerini yükseltmekte, girdikleri sınavın sonucu açıklanana kadar yüksek not beklediklerini ifade etmektedirler. Sınav sonuçları açıklandığında hayal kırıklığı yaşayan bir öğrencinin toparlanıp tekrar öğrenme motivasyonu kazanması ise zaman almaktadır. Bu bağlamda sınava çalışma ile sınav tarihi arasındaki zamanı uzatmanın en iyi yollarından biri olan öğrenme günlükleri ertelemecilik davranışını

azaltarak hem olası hayal kırıklarını azaltacak hem de öğrenilen bilgilerin pekiştirilmesi ve kazanılamayan becerilerin erkenden farkına varılması suretiyle erken müdahale ile üzerinde çalışma olanağı sunacaktır. Öğrenme günlüğü ile meşgul olan öğrenci; “Bu konunun yüzde kaçını öğrendim? Öğrendiklerimin daha önce öğrendiklerimle nasıl bir bağlantısı var? Öğrendiklerimi nasıl kullanabilirim? gibi sorular sorarak bir içgörü geliştirir ve kendi öğrenme stratejisinin farkına varır. Öğrenme günlüğünü sınıfında kullanan öğretmen ise öğrenme süreci ile ilgili detaylı geri dönüt alır. Öğrenci öğrenme günlüğü tutmadığı derslerin bazı konularını hiç öğrenememiş olduğunu sınav bittikten ve dönem kapandıktan sonra anlamakta bu durumun telafisi için oldukça geç olmaktadır. Hayatla bağlantısı çok güçlü olan Anatomi dersinin bir konusunun dahi öğrenilmeden geçilmesi öğretmen adayının gerek öznel yaşantısında gerekse mesleğinde liderlik yapacağı öğrencilerin sağlık konusundaki rehberliğinde büyük eksiklikler yaratabilir. Fen Bilgisi öğretmenlerinin ilk atamalarında merkezden uzak yerleşim yerlerine atanmaları okullardaki sağlık kulübünün değişmez üyesi olmaları nedeniyle bu derste öğrendikleri bilgileri kullanarak özellikle bilinçli bir ilk yardım yönlendiricisi olmaları gerekmektedir. Öğrenme günlüğünün, öğrencilerin ertelemecilik davranışının azaltılmasında bir araç olabileceği ve lisans eğitiminde öğrenme günlüğü tutmayı deneyimleyen öğretmenlerin öğrenme günlüğünü gelecekteki sınıflarında daha iyi uygulayabilecekleri fikirlerinden yola çıkılarak bu çalışma gerçekleştirilmiştir.

Araştırmanın Amacı: Bu araştırma Fen bilgisi öğretmenliği üçüncü sınıfta okumakta olan öğrencilerin İnsan Anatomisi ve Fizyoloji dersinde tuttukları öğrenme günlüklerinin öğrenme sürecine yansımalarını, öğrencilerin erteleme davranışlarını, başarı beklentilerini, kendi başarılarını tahmin etme becerilerini, süreçle ilişkin görüşlerinin incelenmesi ve kendi başarılarına eleştirel bir bakış açısıyla yaklaşımlarını sağlamak amacıyla gerçekleştirilmiştir. Araştırmanın genel amacına ulaşmak için aşağıdaki araştırma sorularına yanıt aranmıştır.

1. Öğrenciler kendi başarılarını gerçekçi bir şekilde tahmin edebilmekte mi?
2. Anatomi günlükleri akademik ertelemecilik davranışlarını değiştirmede bir araç olabilir mi?
3. Günlük tutma sürecine ilişkin görüşleri ve önerileri nelerdir?

Araştırmanın Yöntemi: Yakınsayan paralel desenle bu araştırma yürütülmüş olup, nicel kısımda tarama modeli, nitel kısımda ise durum araştırması modeli kullanılmıştır. Bir devlet üniversitesinin Eğitim Fakültesi Fen Bilgisi Eğitimi Anabilim Dalında okuyan, Biyoloji-I ve Biyoloji-II dersini başarı ile tamamlamış, İnsan Anatomisi ve Fizyoloji dersine devam eden ve öğrenme günlüğü hazırlamaya gönüllü olan 68 öğretmen adayının katılımı ile yürütülen bu araştırmanın örnekleme ölçüt örnekleme ile belirlenmiştir. Araştırmada hem nicel hem de nitel veriler on bir hafta boyunca eş zamanlı olarak toplanmıştır. Veri toplama aracı olarak öğrenme günlükleri, dört kısa sınav, bir ara sınav ve bir yılsonu sınavı olmak üzere her öğrenciye ait toplam altı adet sınav dokümanı ve dört sorudan oluşan yapılandırılmış mülakat formu kullanılmıştır. Öğretmen adaylarına her hafta bir tane olmak üzere, on bir hafta boyunca öğrenme günlüğü yazdırılmış ve onlardan her günlüğün sonunda o derste öğrenme düzeylerini on puan üzerinden puanlamaları istenmiştir. Ayrıca konunun öğrenilme sürecindeki olumlu ve olumsuz etkilerin neler olduğuna ilişkin görüşler, eleştiri ve öneriler kayıt altına alınmıştır. Öğretmen adaylarından kendi öğrenme düzeylerini dikkate alarak her bir kısa sınavın, beşinci haftanın sonunda yapılan ara sınav ile on

birinci haftanın sonunda yapılan yıl sonu sınavından kaç alabileceklerini tahmin etmeleri istenmiş ve tahminlerini her sınav sonunda kendi sınav kağıtlarına yazmaları istenmiştir. Öğretmen adaylarının aldıkları notlar, haftalık öğrenme düzeyleri ve tahminleri arasındaki ilişki incelenmiştir.

Araştırmanın Bulguları: Öğrenme günlüklerinin öğretmen adaylarının erteleme davranışını azalttığı, öğrencilere düzenli çalışma davranışı kazandırdığı, derse düzenli devam etmelerini sağladığı, öz kontrol sağladığı, zamanı etkin kullanmayı öğrettiği, araştırma yapma konusunda teşvik edici olduğu, sorumluluk kazandırdığı, sınav kaygısını azalttığı ve kopyaya teşebbüsü azalttığına ilişkin görüşler tespit edilmiştir. Süreç ilerledikçe öğretmen adaylarının kendi başarılarını daha gerçekçi bir şekilde tahmin ettikleri gözlemlenmiştir.

Araştırmanın Sonuçları ve Öneriler: Bu araştırma öğrenme günlüklerinin öğrenciler ve öğretmenler tarafından öğrenme sürecinin değerlendirilmesinde kullanılabileceğini göstermiştir. Bu çalışmanın sonuçlarından yola çıkılarak, öğretmen ve öğretim elemanlarına kendi ders içeriklerine özgü uyarlamalar yaparak öğrenme günlüklerini kullanmaları ayrıca pandemi sürecinde "Dijital günlükler" veya "Ağ günlükleri" tasarımları önerilebilir. Bu çalışma İnsan Anatomisi ve Fizyolojisi dersi ile sınırlı olduğundan bundan sonraki araştırmalarda farklı konu alanlarına da odaklanılmalıdır. Ayrıca, öğrenme günlüklerinin nasıl kullanılacağına ilişkin iyi örnekler ve faydaları sunulacak hizmet içi eğitim programları ve çalıştaylar planlanmalıdır.

Anahtar Kelimeler: Öğrenme günlüğü, insan anatomisi ve fizyoloji, başarı tahmini.