

## DETERMINING STUDENT TEACHERS' RATES OF PLAGIARISM DURING THE DISTANCE EDUCATION AND INVESTIGATING POSSIBLE REASONS FOR PLAGIARISM

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### ABSTRACT

This study examined the plagiarism rates of student teachers (hereafter students) during the distance education process and investigated the reasons for plagiarising. Qualitative dominant sequential exploratory design was used. The sample consisted of students studying at two different universities in Turkey. The study group was determined in two stages as a quantitative sample and a qualitative participant group. To select the quantitative sample, the maximum diversity sampling was used, while the criterion sampling method was utilized for the qualitative participant group. The data were collected in two stages as quantitative and qualitative in accordance with the nature of the mixed-methods research. In the first stage, the assignments prepared by students were included in the plagiarism program and their similarity rates were determined. All assignments were coded according to the names of the students who prepared them. Then, the assignments with the highest and lowest rate of plagiarism were identified. In the next stage, qualitative data were collected through semi-structured interviews conducted with the students who prepared the aforementioned assignments. The interview questions were prepared to obtain in-depth information about why they plagiarized or did not plagiarize. Content analysis was applied to analyse the data, and meaningful findings were found. The findings were collected under five headings. According to the results, those with high plagiarism stated their reasons for plagiarism as their economic and social conditions were not suitable for research. On the other hand, those with low plagiarism considered plagiarism as an action such as stealing and being unfair.

**Keywords:** Covid-19 outbreak, distance education, plagiarism, student teachers.

### INTRODUCTION

Learning takes place by shaping the information in the mind, which was obtained as a result of experience and research processes. Scientific knowledge or everyday knowledge is acquired within the scope of these processes. All variables involved in the formation of knowledge are also the elements of this process. Scientific knowledge differs from everyday knowledge as it is formed as a result of systematic stages. The person trying to reach scientific knowledge follows certain stages and reaches the information by employing the methods

and techniques used by the discipline containing the information in question. This is called the scientific research process. Regardless of its quality (homework, project, publication, etc.), scientific research is carried out within the scope of universal ethical rules.

Science is a pile of information. Every new knowledge is created by making use of existing knowledge (Johnstone, 1991). The researcher uses the information directly, rather than retesting the information that has been proven or accepted by all circles (Towne & Shavelson, 2002; Nelson, 1959). The researcher conducts the research on the basis of this information. While using the aforementioned information, the researcher also states the sources within the scope of scientific ethics (Pjetursson & Lang, 2008).

The use of any information without citation is considered as a violation of scientific ethical rules. Violation of ethical rules becomes a current issue in Turkey (Keskin, 2017), which has been discussed in various countries as well (Hwang & Young, 2016; Hwang et al., 2017; Mahmood, 2009). On the other hand, ethical rules are believed to be only valid for works prepared for publication (Armstrong, 1993). However, all activities (homework, projects, activities, etc.) carried out in educational institutions based on scientific ethics must adhere to ethical rules (Davis, 1997; Thiroux & Krasemann, 2001). Regardless of its scope, using another one's production without crediting the source is considered unethical (George, 2010).

Plagiarism is the most common unethical behaviour in the scientific field (Anderson, 2009; Currie, 1998; LoCastro & Masuko, 2002). Plagiarism is frequently encountered at the postgraduate level (East, 2006; Guraya & Guraya, 2017; Pecorari, 2008), undergraduate and associate degrees (Selwyn, 2008; Sentleng & King, 2016; Smedley et al., 2015; Smith et al., 2007), and high school level (Dant, 1986; Sisti, 2007).

Educators' commitment to ethical rules is more important than the commitment of other members of society (Haas, 2005; Lane & Schaupp, 1989). This is because educators play a vital role in shaping the behaviors and thoughts of individuals, their contribution to social production (Kohlberg & Mayer, 1972; Shields, 2011). In this context, while designing the programs applied in teacher training institutions, teaching competencies come to the fore (U.S. Department of Education in the US, Teacher Education, 2014; in the United Kingdom, Department for Education, Initial Teacher Training (ITT): Criteria and Supporting Advice, 2019; Ministry of National Education in Turkey, Generic Teacher Competencies, 2017).

Teacher training institutions provide teacher education. In these institutions, scientific ethical rules are taught through courses such as Legal and Ethical Issues in Education (Phoenix University, 2020), Research Methods in Education (University of Southampton, 2020), Ethics and Moral Issues in Education (Yeditepe University, 2020), Introduction to Educational Research Methods (Stockholm University, 2020), and Law and Ethics in Education (Athabasca University, 2020). The main purpose of these courses is to help teachers to learn and comply with scientific ethical rules and teach these rules to young generations (Boon, 2011; Maxwell & Schwimmer, 2016; Warnick & Silverman, 2011).

Ever-changing world conditions also affect scientific studies. The Covid-19 (World Health Organization, 2020) virus, which emerged in China in 2020, spread all over the world in a short time and caused a global outbreak (Bedford et al., 2020; Gates, 2020; Hellewell et al., 2020). Due to the infectious character of the disease caused by the virus (Ali, 2020), curfews have been declared from time to time in many countries (Chandrasinghe et al., 2020; Raoofi et al., 2020). Many states (Al Ahdab, 2020; Hartnett et al., 2020; Pastor, 2020; Vibha et al., 2020) have restricted or postponed activities such as meetings, congresses, symposiums, and scientific research as a precaution, or have decided to conduct them in electronic environment (Nicola et al., 2020). Thus, schools were closed, and instructional activities are carried out via the internet (Ilmiyah & Lingerie, 2020; Sercemeli & Kurnaz, 2020). Due to distance education, measurement-evaluation activities have been tried to be provided with techniques such as homework and projects (Sinelnikov-Murylev, 2020).

Distance education is different from face-to-face education in terms of variables such as activities and measurement-evaluation tools (Mullen, 2020). During the measurement-evaluation phase of this method, major problems may occur, and ethical rules may be violated (Sheperis et al., 2020). For example, the students can ask for help or get someone else to do the assignments. While preparing the assignments or projects, they can get information from a single or few sources. Plagiarism is one of the most common ethical

violations in the distance education process. This situation is noticed especially in the homework prepared (Ullah et al., 2020). One of the frequently used tools to determine the plagiarism rate of assignments is Turnitin. Turnitin is a computer program that shows the similarity between scientific and published studies (Batane, 2010). Turnitin does not check whether a work uploaded to the system is plagiarized. It examines the study in the database to determine whether the article is similar or matches with one of the sources and makes the markings for review (Turnitin, 2020a).

Literature underlines three dominant aspects of plagiarism: 1-plagiarism as a moral problem, 2-plagiarism as a social development problem, and 3-plagiarism as a scientific research problem (Kaposi & Dell, 2012). There has been an increase in studies examining plagiarism especially since the beginning of the 2000s (Adam, 2016). However, few studies investigated plagiarism (Blum 2009; Dawson and Overfield 2006; Devlin and Gray 2007; Gullifer and Tyson 2010; Power 2009; Wilkinson, 2009) from the lens of students, teachers or academicians. These studies were generally carried out with structured data collection tools such as questionnaires, without in-depth examinations (Adam, 2016). To fill this gap, this study aimed to reveal the levels of pre-service teachers' plagiarism as well as the underlying reasons of it. The present study is thought to contribute to the literature and be a source for further studies as it examines plagiarism in-depth.

## PURPOSE OF THE STUDY

This study aimed to determine the plagiarism rates of student teachers during the distance education and to identify the underlying reasons. Therefore, the following questions were sought:

- What are the student teachers' general rates of plagiarism?
- What are the student teachers' rates of plagiarism according to gender?
- What are the student teachers' rates of plagiarism according to year of study?
- What are the student teachers' rates of plagiarism according to the departments they are studying?
- What are the student teachers' rates of plagiarism according to geographical regions?
- How do they perceive plagiarism?

In the current study, Turnitin similarity rates of student teachers were examined in terms of gender, year of study, department they study, and geographical region. Student teachers with high and low similarity rates were determined. Then, teachers were interviewed in order to reveal their perceptions on plagiarism.

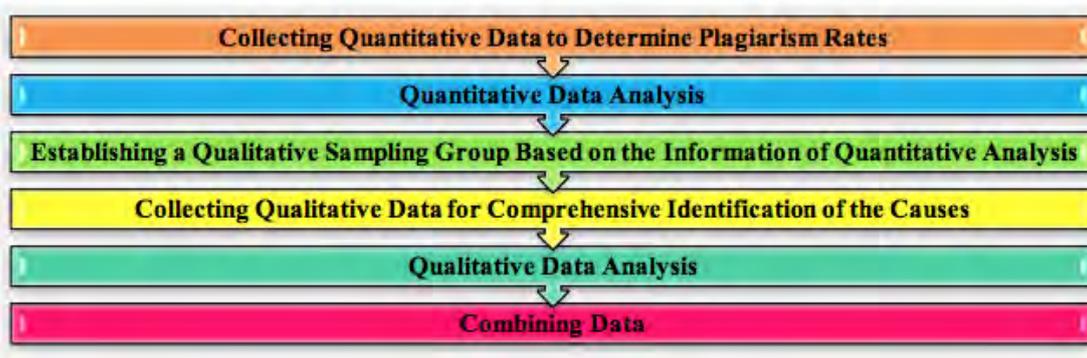
## METHOD

Mixed-methods research was used in this study. Mixed-methods research, in which quantitative and qualitative research methodologies work together, provides data diversity and multiple perspectives (Tashakkori & Teddlie, 2003; Ivankowa & Kawamura, 2010). Mixed-methods research varies according to the dominant method (quantitative dominant; qualitative dominant) and the priority order of the method (quantitative-qualitative; qualitative-quantitative) (Creswell & Plano-Clark, 2017; Johnson & Onwuegbuzie, 2004). The reasons for using mixed methodologies in scientific research are to examine the event, phenomenon, or situation more comprehensively, to provide diversity in the data collection process, and to create multiple hypotheses (Creswell, 2016; Bryman, 2012; Doyle et al., 2009). This study used the mixed-methods research because of the aforementioned reasons. The researchers adopted the mixed-methods research to examine the subject in multiple ways, to create a rich data set, and to evaluate the subject from different perspectives.

## Design

This study used was carried out with mixed methods sequential exploratory design. This design requires a sequential use of quantitative and qualitative methodologies (Greene, 2005). The reason for using the aforementioned design is that data collection and analysis were carried out in two stages. Studies conducted

with mixed methods sequential exploratory design can be either qualitatively dominant or quantitatively dominant. The study purpose is the main determinant in this matter. If the study aims to identify the causes of the results, qualitative dominant is applied. If the goal is to determine definite results, quantitative dominant design is used (Morse, 1991). In this study, qualitative dominant sequential exploratory design was employed. This is because the main purpose of the current study was to reveal the underlying reasons for high and low plagiarism. Thus, quantitative data were collected and analysed to determine the plagiarism rate. To examine the underlying reasons, a qualitative participant group was formed. Figure 1 presents the use of the sequential exploratory design.



**Figure 1.** The stages followed in the use of the research design.

### Study Group

The study group was determined as quantitative sample and qualitative participant group within the scope of the requirements of mixed methods sequential exploratory design.

### Quantitative Sampling

In the first phase, quantitative sample group was formed since quantitative data were prioritized. At this stage, maximum diversity sampling was used. Maximum diversity sampling is for providing the highest level of diversity in the sample group to be selected from the study population (Byrne, 2001; Karasar, 2018). Table 1 presents demographic information of the participants.

**Table 1.** Demographic information of the students

Department	Gender			Year of study		
	Female	Male	Total	2nd	3th	Total
Pre-School Teaching	19	5	24	-	24	24
Turkish Language Teaching	52	23	75	36	39	75
Primary School Teaching	53	37	90	53	37	90
Social Sciences Teaching	41	26	67	25	42	67
Mathematics Teaching	25	18	43	43	-	43
Music Teaching	9	8	17	17	-	17
Art Teaching	15	18	33	33	-	33
<b>Total</b>	<b>214</b>	<b>135</b>	<b>349</b>	<b>207</b>	<b>142</b>	<b>349</b>

*One assignment of each student was included in the process.*

The sample consisted of students studying at various departments in two different universities in Turkey, such as pre-school teaching, Turkish language teaching, primary school teaching, social sciences teaching, mathematics teaching, music teaching, and art teaching. To provide maximum diversity, a total of 349 second and third-year students (214 females and 135 males) studying at different departments were recruited.

### Qualitative Participant Group

In the second phase, criterion sampling was used to determine the group from which qualitative data will be collected. Criterion sampling involves selecting participants that meet some predetermined criterion of importance (Coyne, 1997; Yildirim & Simsek, 2016). The criteria taken into account when creating the qualitative participant group were as follows: choosing an equal number of participants from both universities, determining the ones who made the most and the least plagiarism, and having close numbers of females and males. In this context, 10 participants (5 from each university) were selected.

### Data Collection and Analysis

Data were collected in two stages as quantitative and qualitative.

### Quantitative Data Collection and Analysis

The first step of the data collection process was to examine the assignments of the students. Among these assignments, those suitable for citing references and quoting (which are suitable for plagiarism) were determined. These assignments are also related to collect information from the literature. Homework was checked by 5 experts, and the qualifiable ones were included in the study. Then, the similarity percentages of these assignments were examined via the Turnitin program. Besides, the lower percentage of similarity (acceptable percentage) was determined. While determining the lower limit of similarity, the average of the lower limit of similarity of some universities in Turkey was considered. Table 2 shows the lower limits. Turkey's geographical regions were considered while choosing universities.

**Table 2.** The Lower Limit of Similarity Determined by Some Universities/ Institutes in Turkey

	<b>Universities/ Institutes</b>	<b>Similarity</b>
1	Ankara University Institute of Educational Sciences	below 10%
2	Dokuz Eylul University Institute of Educational Sciences	below 15%
3	Ege University Institute of Health Sciences	below 15%
4	Agri Ibrahim Cecen University Journal of the Institute of Social Sciences	below 20%
5	Ankara Haci Bayram Veli University	below 20%
6	Gazi University Institute of Educational Sciences	below 20%
7	Istanbul University-Cerrahpasa Graduate Education Institute	below 20%
8	Istanbul Yeni Yuzuil University	below 20%
9	Mimar Sinan Guzel Sanatlar University Institute of Social Sciences	below 20%
10	ODTU Graduate School of Natural and Applied Sciences	below 20%
11	Sakarya University	below 20%
12	Ataturk University Institute of Educational Sciences	below 23%
13	Balikesir University Institute of Social Sciences	below 24%
14	Dicle University Institute of Social Sciences	below 24%
15	Firat University Institute of Educational Sciences	below 25%
16	Kilis 7 Aralik University	below 25%
17	Suleyman Demirel University	below 25%

18	Yildiz teknik University	below 25%
19	Abant Izzet Baysal University Institute of Social Sciences	below 30%
20	Bingol University Institute of Social Sciences	below 30%
21	Erciyes University Institute of Social Sciences	below 30%
22	Eskisehir Teknik University Graduate Education Institute	below 30%
23	Inonu Institute of Educational Sciences	below 30%
24	Izmir Kâtip Celebi University	below 30%
25	Kayseri University	below 30%
26	KTU all institutes	below 30%
27	Marmara University Institute of Educational Sciences	below 30%
28	Mugla Sitki Kocman University Institute of Social Sciences	below 30%
29	Selcuk University Institute of Social Sciences	below 30%
30	TOBB University of Economics & Technology Graduate School of Natural and Applied Sciences	below 30%
31	Trakya University Institute of Social Sciences	below 35%
<b>Mean</b>		<b>24,70</b>

According to Table 2, the mean of an acceptable lower limit of similarity for some universities in Turkey is 24.70. This rate is compatible with the similarity classification of Turnitin program. Therefore, the classification of the findings was made according to the colour grouping of the Turnitin program, and the acceptable limit of similarity was considered 24 in this study. Similarity classification is shown in colours in the Turnitin program. This classification is as follows:

- **Blue** (no matching words)
- **Green** (1 - 24% similarity rate)
- **Yellow** (25-49% similarity rate)
- **Orange** (50-74% similarity rate)
- **Red** (75-100% similarity rate) (Turnitin, 2020b).

These colorations were determined by the researchers as “Very high” for the percentage between 75% and 100%, “High” for the percentage between 50% and 74%, “Moderate” for the percentage between 25% and 49%, “Low” for the percentage between 1% and 24%, and “No Similarity” for 0%. The similarity rates were shown in the findings section by being tabulated both in general and within the scope of the variables of the study (year of study, gender, university, and teaching field). The tables were interpreted and expressed separately.

### Qualitative Data Collection and Analysis

Participants were divided into two groups as “those who plagiarized the most” and “those who plagiarized the least”. A question pool was created to interview students. Based on the expert opinion, the semi-structured interview form took its final form. Each participant was called by phone and interviewed separately. The interviews were recorded with the consent of the participants. Then, they were transcribed and prepared for the analysis phase. Content analysis was used. Content analysis aims to reach the conceptual and relational meanings of the research subject based on the data (Creswell & Poth, 2018; Yildirim & Simsek, 2016). It has four comprehensive stages (Denzin & Lincoln, 2008; Yildirim & Simsek, 2016). These stages were carried out in the current study as follows:

- *Coding*: Data were divided into two parts. Each part was given a researcher. First, data were read superficially. Second, data were re-read, and the first coding process was performed. Then, the third reading was made for consistency, and the main codes were created. In the next step, the parts were changed, and the steps mentioned above were repeated. Thus, the contents of each section were coded separately by the researchers. In the last stage of coding, the original codes of the researchers were brought together, compared and discussed, and the final codes were determined.
- *Finding themes*: Based on the codes obtained, themes and sub-themes were created. This stage was expressed by the researchers as a trial period to create themes.
- *Arranging of codes and themes*: Since the large number of themes and sub-themes causes information and meaning confusion, the codes were reviewed, and the themes and sub-themes were simplified.
- *Identifying and interpreting the findings*: After the qualitative data were analysed, findings were presented by combining qualitative and quantitative data at the last stage.

## FINDINGS

This part includes quantitative and qualitative findings.

### Quantitative Findings

Table 3 presents the general findings regarding the similarity rates determined in the homework prepared by the students.

**Table 3.** General similarity rates

Similarity rate (%)	Definition of Similarity	N	%
between 75% and 100%	Very high	117	33.52
between 50% and 74%	High	62	17.77
between 25% and 49%	Moderate	62	17.77
between 1% and 24%	Low	69	19.77
0%	No similarity	39	11.17
<b>Total</b>		<b>349</b>	<b>100</b>

*N*: Number of students

*\*\* Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)*

As is seen in Table 3, 117 students had a “Very High” similarity rate (between 75% and 100%). This represents 33.52% of the participants. Considering the “High” similarity rate (between 50% and 74%), there were 62 students. This represents 17.77% of the participants. Those who had a “Moderate” similarity rate (between 25% and 49%) were 62, representing 17.77% of the participants. Sixty-nine students had a “Low” similarity rate (between 1% and 24%), which represents 19.77% of the participants. Finally, 33 students had no similarity, which makes 11.17% of the participants. While 30.94% of the students prepared homework in accordance with the specified (24%) lower limit of similarity, 69.06% of them prepared homework with a similarity rate above this rate. Table 4 presents the similarity rates that students had according to year of study.

**Table 4.** Similarity rates according to year of study

Year of study	Definition of Similarity					Total	
	Very high between 75% and 100%	High between 50% and 74%	Moderate between 25% and 49%	Low between 1% and 24%	No similarity 0%		
<b>2nd</b>	N*	78	56	49	21	3	<b>207</b>
	%	37.68	27.05	23.67	10.14	1.45	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				10.14	1.45	<b>11.59</b>
<b>3th</b>	N	39	6	13	47	37	<b>142</b>
	%	27.46	4.23	9.15	33.1	26.06	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				33.1	26.06	<b>59.16</b>

\*N: Number of students

\*\* Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)

Second-year students had a higher similarity rate compared to third-year students. While 78 second-year students had a similarity rate between 75% and 100%, the number of third-year students was 39. These rates represent 37.68% of second-year students and 27.46% of third-year students. While the number of second-year students having “High” similarity rate (between 50% and 74%) was 56, it was 6 for third-year students. These rates represent 27.05% of second-year students and 4.23% of third-year students. The number of second-year students who plagiarized between 25% and 49% was 49, but it was 13 for third-year students. These rates represent 23.67% of second-year students and 9.15% of third-year students. Although 21 second-year students plagiarized between 1% and 24%, this number was 47 for third-year students. These rates represent 10.14% of second-year students and 33.10% of third-year students. Only 3 second-year students didn’t plagiarism, whereas this number was 37 for third-year students. These rates represent 1.45% of second-year students and 26.06% of third-year students. While 11.59% of the second-year students prepared homework in accordance with the specified (24%) lower limit of similarity, 88.41% of them prepared homework with a similarity rate above this rate. On the other hand, even though 59.16% of the second-year students prepared homework in accordance with the specified (24%) lower limit of similarity, - 40.84% of them prepared homework with a similarity rate above this rate. Table 5 presents the similarity rates that students had according to gender.

**Table 5.** Similarity rates according to gender

Gender	Definition of Similarity					Total	
	Very high between 75% and 100%	High between 50% and 74%	Moderate between 25% and 49%	Low between 1% and 24%	No similarity 0%		
<b>Female</b>	N*	55	40	44	51	24	<b>214</b>
	%	25.7	18.69	20.56	23.83	11.21	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				23.83	11.21	<b>35.04</b>
<b>Male</b>	N	62	22	18	17	15	<b>135</b>
	%	45.93	16.3	13.33	12.59	11.85	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				12.59	11.85	<b>24.44</b>

\*N: Number of students

\*\* Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)

Considering gender, males had a higher similarity rate compared to females. While 55 females had a similarity rate between 75% and 100%, the number of males was 39. These rates represent 25.70% of females and 45.93% of males. While the number of females having a “High” similarity rate (between 50% and 74%) was 40, it was 22 for male students. These rates represent 18.69% of female students and 16.30% of male students. The number of female students who plagiarized between 25% and 49% was 44, but it was 18 for male students. These rates represent 20.56% of female and 13.33% of male students. Although 51 female students plagiarized between 1% and 24%, this number was 17 for male students. These rates represent 23.83% of female students and 12.59% of male students. While 24 female students didn’t plagiarism, this number was 15 for male students. These rates represent 11.21% of female students and 11.85% of male students. While 35.04% of female students prepared homework in accordance with the specified (24%) lower limit of similarity, 64.96% of them prepared homework with a similarity rate above this rate. On the other hand, even though 24.44% of male students prepared homework in accordance with the specified (24%) lower limit of similarity, 75.56% of them prepared homework with a similarity rate above this rate. Table 6 presents the similarity rates that students had according to universities.

**Table 6.** Similarity rates according to universities in different geographical regions

Teaching field		Definition of Similarity					Total
		Very high between 75% and 100%	High between 50% and 74%	Moderate between 25% and 49%	Low between 1% and 24%	No similarity 0%	
Eastern Anatolia Region X University	N*	109	57	41	13	2	<b>222</b>
	%	49.10	25.68	18.47	5.86	0.90	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				5,86	0,90	<b>6.76</b>
South-eastern Anatolia Region Y University	N	8	5	21	56	37	<b>127</b>
	%	6.30	3.94	16.54	44.09	29.13	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				44,09	29.13	<b>73.22</b>

\*N: Number of students

\*\* Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)

While 6.76% of the students studying at the University X in the Eastern Anatolia Region prepared homework in accordance with the determined (24%) lower limit of similarity, 93.24% of them prepared homework with a similarity rate above this rate. Although 73.22% of the students studying at University Y in the South-eastern Anatolian Region prepared homework in accordance with the determined (24%) lower limit of similarity, 26.78% of them prepared homework with a similarity rate above this rate. Table 7 presents the similarity rates that students had according to teaching field.

**Table 7.** Similarity rates according to teaching field

Teaching field		Definition of Similarity					Total
		Very high	High	Moderate	Low	No similarity	
		between 75% and 100%	between 50% and 74%	between 25% and 49%	between 1% and 24%	0%	
Pre-School Teaching	N*	0	1	3	13	7	<b>24</b>
	%	0.00	4.17	12.50	54.17	29.17	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				54.17	29.17	<b>83.34</b>
Turkish Language Teaching	N	9	15	11	17	23	<b>75</b>
	%	12	20	14.67	22.67	30.67	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				22.67	30.67	<b>53.34</b>
Primary School Teaching	N	35	17	13	18	7	<b>90</b>
	%	38,89	18,89	14,44	20	7.78	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				20	7.78	<b>27.78</b>
Social Sciences Teaching	N	39	5	11	11	1	<b>67</b>
	%	58.21	7.46	16.42	16.42	1.49	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				16.42	1.49	<b>17.91</b>
Mathematics Teaching	N	17	12	8	4	2	<b>43</b>
	%	39.53	27.91	18.60	9.30	4.65	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				9.30	4.65	<b>13.95</b>
Music Teaching	N	6	3	6	2	0	<b>17</b>
	%	35.29	17.65	35.29	11.76	0.00	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				11.76	0.00	<b>11.76</b>
Art Teaching	N	11	9	10	3	0	<b>33</b>
	%	33.33	27.27	30.30	9.09	0.00	<b>100</b>
	Homework suitable for the lower limit of similarity (between 0% and 24%) is %.				9.09	0.00	<b>9.09</b>

\*N: Number of students

\*\* Columns painted with this color presents the data of the homework that fit the lower limit of similarity (between 0% and 24%)

According to Table 7, while 83.34% of students studying at Preschool Teaching prepared homework suitable for the lower limit of similarity (24%), 16.6% of them did not. While 53.34% of students studying at Turkish Language Teaching prepared homework suitable for the lower limit of similarity (24%), 45.66% of them did not. While 27.78% of students studying at Primary School Teaching prepared homework suitable for the lower limit of similarity (24%), 72.22% of them did not. While 17.91% of students studying at Social Science Teaching prepared homework suitable for the lower limit of similarity (24%), 82.09% of them did not. While 13.95% of students studying at Mathematics Teaching prepared homework suitable for the lower limit of similarity (24%), 86.05% of them did not. While 11.76% of students studying at Music Teaching prepared homework suitable for the lower limit of similarity (24%), 88.24% of them did not. While 9.09% of students studying at Art Teaching prepared homework suitable for the lower limit of similarity (24%), 90.91% of them did not.

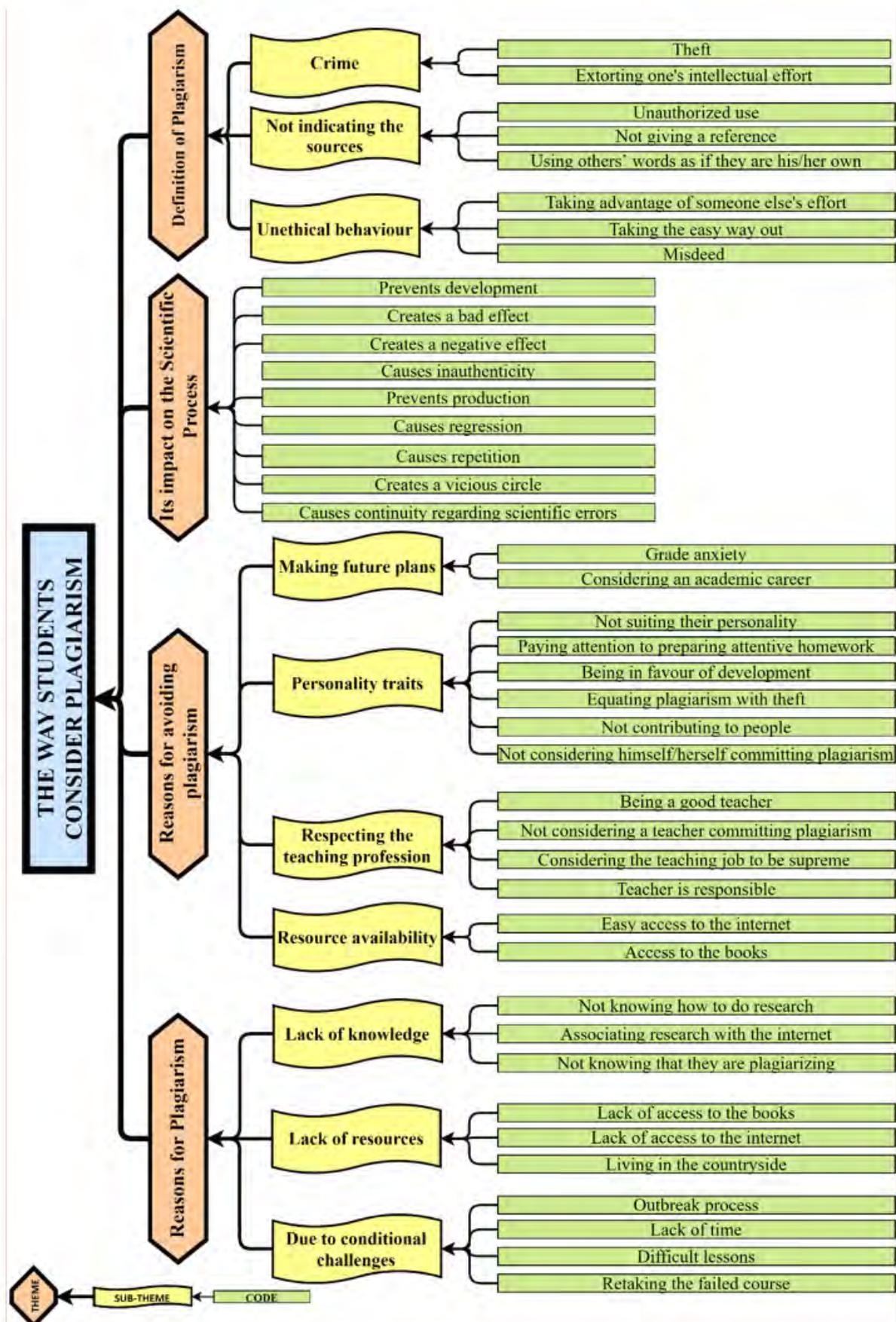


Figure 2. Theme, Sub-Theme, Code Map

## Qualitative Findings

The qualitative findings were grouped under four main headings: students' definitions of plagiarism, 2) students' views about how plagiarism affects the scientific process, 3) students' excuses for avoiding plagiarism, 4) students' excuses for plagiarizing.

An informative map was created to concretely reveal the connections between the code, sub-themes and themes created during the analysis process. Figure 2 presents the map.

### Students' Views on the Definition of Plagiarism

Various definitions were made during the interviews. Students defined plagiarism with expressions such as theft, extorting one's intellectual effort, unauthorized use, not giving a reference, using others' words as if they are his/her own, taking advantage of someone else's effort, take the easy way out, misdeed. Table 8 presents the codes, sub-themes and themes determined for the students' definitions of plagiarism.

**Table 8.** Students' definitions of plagiarism

Theme	Sub-Theme	Code	Participant*
Definition of Plagiarism	Crime	Theft	ST5, ST1, ST2, ST3, ST6, ST7, ST4
		Extorting one's intellectual effort	ST7,
	Not indicating the sources	Unauthorized use	ST10, ST5, ST1, ST2, ST4
		Not giving a reference	ST8, ST9, ST5, ST4, ST10,
		Using others' words as if they are his/her own	ST9,
	Unethical behaviour	Taking advantage of someone else's effort	ST6,
		Taking the easy way out	ST1,
		Misdeed	ST1,

\*ST: Student teacher. Each student was codes as ST...

Table 8 shows three sub-themes under "Definition of Plagiarism": plagiarism, not indicating the sources, and unethical behaviour. The sub-theme of 'plagiarism' includes "theft" and "extorting one's intellectual effort". Students used some metaphors while defining plagiarism. For example, ST1 said "...*plagiarism is theft.*" ST2 stated "... *the definition of plagiarism is clear. It is research theft*" On the other hand, ST7 defined plagiarism as extortion of one's intellectual effort, by saying "*Man exists by what he does. Especially if he is doing research, he either gets help from someone or does it himself. Yet, he doesn't extort someone else's intellectual effort. This is plagiarism.*"

The sub-theme of 'not indicating the sources' involves "unauthorized use, not give reference, using others' words as if they are his/her own". ST1 explained that plagiarism was unauthorized use, stating that "... *It is like using the work of someone else in scientific work without permission.*" ST2 expressed plagiarism as not to give reference: "... *I think it is so, too. It is the use of one's work without his/her consent. It is a crime. This is what I know about plagiarism... If you want an academic definition, I personally say that plagiarism is using the information produced by someone else without permission.*" ST9 said, "...we all give a reference. If we don't, it is plagiarism. In sum, *it is like using others' words as if they are his/her own. It is an act of copying and pasting.*"

Under the unethical behaviour sub-theme, "taking advantage of someone else's effort, taking the easy way out, and misdeed" are included. Here are some representative excerpts: ST6 said, "*I can express my personal definition as taking advantage of someone else's effort.*" ST1 stated, "... *I mean, if I want to explain plagiarism in my own words, I would describe it as a misdeed in research and homework.*" ST1 added that "...*scientific researches are very hard work. That is why most people do not want to endure these difficulties, so they want to plagiarize and take the easy way out.*"

## Students' Views about How Plagiarism Affects the Scientific Process

According to teacher candidates, plagiarism “prevents scientific development, harms science, hurts scientific development, causes inauthenticity in science, prevents scientific production, causes scientific decline, causes a scientific repetition, creates a vicious circle in science, and causes continuity regarding scientific errors.” These statements were determined as codes, and they were stated under the theme of “plagiarism in the scientific process”. Table 9 presents the codes, sub-themes, and students.

**Table 9.** The themes and codes reached regarding the way plagiarism affects the scientific process

Theme	Code	Participants*
Plagiarism in the Scientific Process	Prevents development	ST1, ST2, ST3, ST6, ST7, ST10
	Creates a bad effect	ST7, ST9, ST10, ST4
	Creates a negative effect	ST5, ST8, ST4
	Causes inauthenticity	ST5, ST4
	Prevents production	ST2, ST10
	Causes regression	ST1, ST3,
	Causes repetition	ST1, ST4
	Creates a vicious circle	ST7
	Causes continuity regarding scientific errors	ST1

\*ST: Student teacher. Each student was codes as ST...

As is seen in Table 9, the theme of “plagiarism in the scientific process” consists of codes such as “prevents development, creates a bad effect, creates a negative effect, causes inauthenticity, prevents production, causes regression, causes repetition, creates a vicious circle, and causes continuity regarding scientific errors. The remarkable statements that determined the codes were stated below.

Some students stated that that plagiarism prevents development: “...*plagiarism is something that prevents development*” (ST1). “...*plagiarism appears as something that hinders scientific development*” (ST2). “... *Plagiarism means that someone gains without working, trying, doing anything. I think everyone considers plagiarism as the biggest barrier to scientific development. I argue that everyone would give the same answer to this question.*” (ST6).

ST4 believed that plagiarism harmed the authenticity during the scientific process and used the following expressions: “...*if you directly plagiarize, if you don't have your own knowledge and contribute to the work, it means that you don't have an authentic work.*” ST2 said that plagiarism prevents production: “... *if everybody uses the same information, you will always circle around the same information. You can't produce anything new.*”

Some students drew attention to the fact that plagiarism would cause regression. For example, ST3 expressed this situation with the following statements: “... *what could stealing improve so that it can improve. It only causes regression. ... plagiarism is stealing, it cannot develop. On the contrary, it may decline.*”

ST emphasized that that plagiarism caused regression during the scientific process: “...*because new studies (that is, new information, new ideas, theories, etc.) are not carried out, it causes regression.*”

## Reasons for Avoiding Plagiarism

The interviews indicated various reasons for avoiding plagiarism. Those who made low plagiarism listed their excuses, such as grade anxiety, considering an academic career, not suiting their personality, paying attention to preparing attentive homework, being in favour of development, equating plagiarism with theft, not contributing to people, not considering himself/herself committing plagiarism, being a good teacher, not considering a teacher committing plagiarism, considering the teaching job to be supreme, the thought that the teacher should be responsible, easy access to the internet, and having the opportunity to access the books. The aforementioned reasons were presented in table 10.

**Table 10.** Themes, sub-themes and codes determined for students' reasons for avoiding plagiarism

Theme	Sub-Theme	Code	Participants*
Reasons for avoiding plagiarism	Making future plans	Grade anxiety	ST10, ST8, ST9
		Considering an academic career	ST7
	Personality traits	Not suiting their personality	ST6, ST9
		Paying attention to preparing attentive homework	ST10, ST8
		Being in favour of development	ST7
		Equating plagiarism with theft	ST9
		Not contributing to people	ST9
		Not considering himself/herself committing plagiarism	ST6
		Respecting the teaching profession	Being a good teacher
	Not considering a teacher committing plagiarism		ST7
	Considering the teaching job to be supreme		ST6
	Resource availability	Teacher is responsible	ST6
		Easy access to the internet	ST6
		Access to the books	ST6

\*ST: Student teacher. Each student was codes as ST...

As is seen in Table 10, the theme of “reasons for avoiding plagiarism” has four sub-themes: making future plans, personality trait, respecting the teaching profession, and resource availability.

“Making future planning” sub-theme has codes such as “grade anxiety” and “considering an academic career”. Here are some representative excerpts:

ST10 stated that he avoided plagiarism for not getting poor marks: “...*grade anxiety is one reason. I tried to obey the scientific rules, and I also avoid it due to grade anxiety. Because my goal was to get high scores.*” ST8 stated that “... *there is no need to lie, I avoided for not getting low marks.*” Another participant (ST7) said that “... *I am in favour of development. I want to develop myself. Maybe I will pursue an academic career in the future.*”

Under the “personality traits” sub-them, there are codes such as “not suiting their personality, paying attention to preparing attentive homework, being in favour of development, equating plagiarism with theft, not making a contribution to people, not considering himself/herself committing plagiarism.” Some of the expressions that support the formation of these codes were as follows:

ST6, who said that plagiarism did not suit his personality, underlined that “... as I said, the plagiarism does not suit my personality.” ST9 expressed that “... I am against plagiarism.”

ST10, who said that he avoided plagiarism in order to prepare careful homework, said, “... *I paid attention to both this task and my other homework. I stayed at home at that time. I had enough time. I cared about every task. I did not use to pay much attention before, but during this pandemic period, I did.*” ST9 emphasized as “*I avoided plagiarism as much as possible. Copy-paste does not contribute to our development. I consider plagiarism as a thief. It is like stealing someone else’s knowledge.*”

The “respecting the teaching profession” sub-theme included codes such as “being a good teacher, not considering a teacher committing plagiarism, considering the teaching job to be supreme, and teacher is responsible.” Here are some excerpts:

ST6 avoided plagiarizing for such reasons: “... *I find the teaching job supreme. I will also be a teacher. I will show my students the right way. That’s why I didn’t plagiarize.*”

ST7 argued that plagiarism does not suit teachers: “... *Plagiarism causes trouble. Especially, teachers shouldn’t plagiarize.*” ST6 stated, “... *I said before. The person to be a teacher should be a responsible person.*”

The “resource availability” sub-theme had codes such as “*easy access to the internet and access to the books.*” It was created within the striking statements of ST6, who explained that he should stay away from plagiarism as he can easily access to the internet and the books: “*... as a matter of fact, I used both the internet and the books. I have many books. I also benefited from various sources while using the internet. I didn’t copy and paste from a single source. I gathered information from different sources.*”

### Reasons for Plagiarizing

Students who made high plagiarism stated reasons such as “not knowing how to do research, associating research with the internet, not knowing that they are plagiarizing, lack of access to the books, lack of access to the internet, living in the countryside, the outbreak process, lack of time, the difficult lessons, and retaking the failed course.” (please see Table 11).

**Table 11.** Themes, sub-themes and codes related to students’ reasons for plagiarizing

Theme	Sub-Theme	Code	Participants*
Reasons for Plagiarism	Lack of knowledge	Not knowing how to do research	ST1
		Associating research with the internet	ST1
		Not knowing that they are plagiarizing	ST3
	Lack of resources	Lack of access to the books	ST1, ST4
		Lack of access to the internet	ST15
		Living in the countryside	ST5
	Due to conditional challenges	Outbreak process	ST2, ST4, ST5
		Lack of time	ST2, ST5
		Difficult lessons	ST2
		Retaking the failed course	ST2

\*ST: Student teacher. Each student was codes as ST...

As is seen in Table 11, there are three sub-themes under the theme of “reasons for plagiarism”: lack of knowledge, lack of resources, and due to conditional challenges.

“Lack of knowledge” has three codes: not knowing how to do research, associating research with the internet, and not knowing that they are plagiarizing. Here are some excerpts.

ST1 stated, “*... actually, I could not learn how to research at school. It is necessary to know how to do research. However, we were not taught how to do it.*” Another reason uttered by ST1 was, “*Students usually apply internet for doing research. They search on the internet and look for useful sites for the assignment given. Then, they find the necessary information there.*”

ST3 said that he did not know that what he did is plagiarism: “*... sir, I did not know that I was plagiarizing. Now, after talking to you, I have just learned what plagiarism is. If you ask me to explain how I plagiarized, I cannot explain. I just used my smartphone and wrote down the assignments given to me. I copied what I saw and pasted it into Word. Then, I wrote my name and surname. Finally, I posted it.*”

The “lack of resources” sub-theme consisted of “lack of access to the books, lack of access to the internet, and living in the countryside.” Some representative statements were as follows:

ST1 said, “*... It’s not good to come up with excuses for wrong actions. That’s why I don’t want to cover up my fault. We need a lot of books; we should go to the library.*” ST5 stated, “*...as I said, I was busy with farming and lived in a village. I could not go to town. I had an internet problem in the village as well.*”

The sub-theme of “due to conditional challenges” had codes such as “outbreak process, lack of time, difficult lessons and retaking the failed course.” Some statements were as follows:

ST2 explained the reason for plagiarism as follows: "... I didn't have enough time. What would I have done if I hadn't made plagiarism? There is an outbreak." The same participant continued, "I retook many failed courses. I am still a third-year student. I have lessons of the first year. In fact, these shouldn't be counted as a reason for plagiarism, but as I said, it happened when a lot of lessons were accumulated. All of them are difficult lessons as well." ST5 said, "... when I learned the deadline, there were 2 days for the assignment. The process I went through, the deadline, and the outbreak were the reasons for plagiarism."

## DISCUSSIONS AND CONCLUSION

This study examined the plagiarism rates of student students during the distance education process and investigated the reasons for plagiarising. Qualitative and quantitative findings were combined, and they were discussed within the scope of similar studies.

It was found that the majority did not prepare homework in accordance with the acceptable lower limit of similarity. This finding shows that most of the participants did not consider the level of similarity that would lead to plagiarism, one of the scientific ethical values. Pupovac et al. (2008), who investigated the plagiarism rates of university students in Spain, found similar findings. Ozden et al. (2015) conducted a study with students to examine the rates of plagiarism. They argued that half of the participants had committed plagiarism and/or cheating at least once during their university life. On the other hand, Kenny (2007) observed that most of the students studying in the nursing department plagiarized by copying and pasting and/or not providing references. In addition, some of the participants only benefited from internet-based resources without citing references. Literature abounds in similar studies investigating the issue of plagiarism. Some of these studies indicated that students plagiarized and/or cheated in scientific studies (Josephson Institute of Ethics, 2008; Mastin et al., 2009; Preiss et al., 2013; Mojeiko & Rudkouski, 2019; Szabo & Underwood 2004; Wood, 2004). Studies indicate that plagiarism rates have increased compared to previous years. There may be different reasons causing this increase. Some studies associate this situation with the development and spread of internet technology (Eret & Gokmenoglu, 2010; Gullifer & Tyson, 2010; Laird, 2001; Park, 2003; Power, 2009; Selwyn, 2008; Schmelkin et al., 2008; Szabo & Underwood, 2004; Walker, 2010). According to the aforementioned studies, the internet enables students to easily copy and paste an assignment or alternatively download existing assignments and easily access most of the information they search (Chandrasoma et al., 2004; Dawson & Overfield, 2006; Sutherland-Smith, 2008). The habits of today's students (such as downloading free music and movies as well as reading publications) cause students not to cite articles (Young, 2001). This situation increases even more when the generation that grows up using the internet extensively starts university (Kellogg, 2002). Thus, higher education institutions should convince their students to avoid using the resources accessed from the internet as if these works belong to them (Colon, 2001; Whiteneck, 2002). On the other hand, while the internet allows students to easily access and copy the materials, it also helps academicians to determine the plagiarism rates by comparing the texts (Park, 2003). Some studies argue that the increase in the rate of plagiarism is not related to the development and spread of internet technology, but rather to individual preferences (Howard, 2007; Marsh, 2007). Suggestions can be made to avoid plagiarism that was underlined in the literature. Academicians play important role in solving this problem. Considering Rezanejad and Rezaei (2013), 87.6% of the university students stated that they learned the most concrete source about plagiarism from their instructors. On the other hand, most of the students (76.2%) stated that they heard about plagiarism at the university for the first time. The results of this study showed that academicians could be effective in helping students gain an attitude towards plagiarism (Šprajc et al., 2017).

In this study, the plagiarism rates of the second-year students were higher than those of the third-year students. Almost all of the second-year students and half of the third-year students prepared homework in accordance with the determined lower limit of similarity. Therefore, the higher the class level was, the lower the rate of plagiarism was. Thus, the awareness of scientific ethics rules is directly proportionate to the class level. Stubbings and Brine (2003) support this finding. In their study, one of the reasons why undergraduate

students plagiarized is that they did not know that plagiarism is wrong. In this context, they concluded that plagiarism was more common in first- and second-year classes compared to other classes. Similarly, Perry (2010) stated that 28% of the first-year students and 80% of the students studying in other classes believed that copy-paste was plagiarism. Hamilton (2003) found that while students' tendency to cheat and plagiarize is high in the first years of their university education, this rate decreases in the last year. Hrabak et al. (2004) reached similar results in their study. A study that supports this determination argued that upper-class university students were more knowledgeable and experienced about plagiarism awareness than lower-class students (Dawson & Overfield, 2006). Considering this study, the difference in plagiarism rate between the grade levels may be due to the students' knowledge and experience. On the other hand, this difference in plagiarism rate between grade levels may also be related to the ages of the students. Thus, as the students' grade levels rise, their average age also increases. Studies in this context show that older students are less likely to cheat than younger ones (Christensen-Hughes & McCabe, 2006; Finn & Frone, 2004; McCabe & Trevino, 1997; Newstead et al., 1996; Nonis & Swift, 2001; Rakovski & Levy, 2007; Vandehey et al., 2007). However, some studies (Ledesma, 2011; Seven & Engin, 2008) found that senior students had higher levels of plagiarism than lower grade students. Besides, some studies (Eret & Ok, 2014) stated that grade level was not significantly related to plagiarism.

According to the current study, male students plagiarize at a higher level than female students. This finding supports the literature. Bowers (1964) found that academic dishonesty in faculties was more common among men compared to women. Most of the studies support this finding (Jensen et al., 2002) reporting that women had lower copy rates than men (Aiken, 1991; Brown & Choong, 2005; Davis et al., 1992; Smyth & Davis, 2004; Ward, 1986; Whitley et al., 1999). Regarding gender, the aforementioned determination on cheating is in agreement with plagiarism. Selwyn (2008) found that male students plagiarized more than women. Various studies support this finding (Akbulut et al., 2008; Cetin, 2007; Eret & Ok, 2014; Davis et al., 1992; Jereb et al., 2018; Ozgungor, 2008; Szabo & Underwood, 2004). The reasons for this gender difference regarding plagiarism are that men take more risks than women, obey the rules less (Ersoy and Ozden 2011), perceive plagiarism as acceptable (Rawwas et al., 2004), have more problems referring to internet resources, believe that their academic studies will not benefit them (Šprajc et al., 2017), have a positive attitude towards plagiarism, believe that they will not be caught when they commit plagiarism, suppose that their gains are more than their losses, and think that their homework is not controlled (Jereb, et al., 2018). In addition, some studies did not support these results (indicating that women cheat more often than men) (Graham et al., 1994). On the other hand, some studies found no significant difference in cheating and plagiarism rates according to gender. As a matter of fact, in their experimental research on academic dishonesty, Crown and Spiller (1998) concluded that there was no significant difference in terms of gender in most of the studies published after 1982. Roig and Caso (2005) stated that there was no significant difference according to gender in terms of plagiarism rates. Studies argued that applying to academic dishonesty or plagiarism did not make a significant difference according to gender (Chapman et al., 2004; Hu & Lei, 2015; Jordan, 2001; Jurdi et al., 2011; Pino & Smith, 2003; Yardley et al., 2009).

Almost all of students of University X in the Eastern Anatolia Region and half of the students of University Y in the South-eastern Anatolia Region did not prepare their homework in accordance with the determined lower limit of similarity. Academicians who provided homework were not included in the study, but they were interviewed. While the academicians who were teaching at Y University in the Southeastern Anatolia Region frequently warned their students against plagiarism, the academics of X University in the Eastern Anatolia Region stated that they did not do anything. From this point of view, the difference between regions regarding the rate of plagiarism may be due to the attitudes of academicians towards plagiarism.

Considering the undergraduate departments, a few Pre-school Teaching undergraduate students prepared homework above the lower limit of similarity; Half of the Turkish Language Teaching students prepared homework above the lower limit of similarity; the majority of Primary School Teaching students prepared homework above the lower limit of similarity; Almost all of the Social Sciences Teaching, Mathematics Teaching, Music Teaching, and Art Teaching students prepared homework above the lower limit of

similarity. A similar study was carried out by Ersoy and Karaduman (2010). In their study, Ersoy and Karaduman (2010) investigated plagiarism at the department level and found that 13% of the reports prepared by Primary School Teaching students were plagiarized. Eraslan (2011) conducted a study with Mathematics Teaching students and observed that students had high plagiarism in the slides and reports they had prepared. According to Eret and Ok (2014), Mathematics Teaching students had a higher rate of internet-based plagiarism compared to Pre-School Teaching students. This finding is consistent with the results of this study. In their study carried out with of Social Sciences Teaching, Primary School Teaching, Pre-school Teaching, Turkish Language Teaching, and Science Teaching, Ozden et al., (2015) concluded that half of the participants applied for cheating and/or plagiarism at least once in their undergraduate life. The data obtained from the Social Studies and Primary Education Department students in the aforementioned study were compatible with the findings of the current study. However, the data of pre-school and Turkish Language Teaching students were not compatible with the findings of this study.

While defining the term, participants used “plagiarism, not indicating the sources, unethical behaviour.” The codes of plagiarism were theft and extorting one’s intellectual effort. The codes of not indicating the sources were unauthorized use, not giving references, and using others’ words as if they are his/her own. The codes of unethical behaviour were using others’ words as if they are his/her own, taking advantage of someone else’s effort, taking the easy way out, and misdeed. Like this study, Rezanejad and Rezaei (2013) found that most of the participants considered plagiarism as copying and pasting without specifying the original source. They associated the reason for this definition with the dominant and common definition of the concept of plagiarism. On the other hand, in Benzer and Kara (2020), MA candidates defined plagiarism as “*using someone else’s data in your own work as it is; using someone else’s idea or work as your own without acknowledging their work; and publishing without referring properly; scientific dishonesty and not following the rules when quoting a study.*” This confirms the findings of this study. Similar to the results of this study, in a study conducted with university students, Perry (2010) found that participants used metaphors to describe plagiarism. Perry (2010) stated that 24% of the participants thought that just copying word by word was plagiarism, while 23% of them thought that anything without quotations was plagiarism. In the present study, students were partially successful in identifying plagiarism. However, the quantitative data indicated that the students had made a high level of plagiarism. This determination shows that students do not act in accordance with the definitions of plagiarism. This coincides with the literature. Students can usually clearly state the definition of plagiarism. However, many of the students cannot act according to the definitions of plagiarism (Dawson & Overfield 2006; Power, 2009).

Regarding the way plagiarism affects the scientific process, participants stated that plagiarism prevents scientific development, creates a bad and a negative effect, causes inauthenticity, prevents production, causes regression and repetition, creates a vicious circle, and causes continuity regarding scientific errors. The present study shares similar findings with Ennam (2017) who conducted a study with Moroccan university students and Benzer and Kara (2020) who examined Turkish MA candidates.

Participants listed the reasons for avoiding plagiarism as making future plans, not associating it with their personality traits, respecting the teaching profession, and the availability of academic resources. Participants expressed the making future plans with concepts such as grade anxiety and considering an academic career. They explained the personality trait with concepts such as not suiting their personality, paying attention to preparing attentive homework, being in favour of development, equating plagiarism with theft, not making a contribution to people, and not considering himself/herself committing plagiarism. For respecting the teaching profession, they used Being a good teacher, not considering a teacher committing plagiarism, considering the teaching job to be supreme, and teacher is responsible. They utilized easy access to the internet and access to the books to explain resource availability. In Stoner’s (2004) study, reasons for avoiding plagiarism were grouped under two categories (stealing from someone else and harming the plagiarist). This finding overlaps with the results of this study.

The findings indicate that reasons for plagiarizing are as follows: not knowing what plagiarism is, lack of resources and time, taking many courses, and the outbreak process. Wood (2004), who investigated the

reasons for the high plagiarism rates of students, found that students do not know whether their products such as homework and projects are within the scope of plagiarism. Wood (2004) also concluded that this situation is related to the internet culture in the next generation. According to Pupovac et al. (2008), one of the main reasons for plagiarism is that the homework prepared by students is not subjected to plagiarism programs. Thus, most of the students continue to commit plagiarism. Ozden et al. (2015) advocate that most of students plagiarize because they know that they would not be subject to any sanctions. Ersoy (2014) warns that students plagiarize because of their inadequate research skills and their haste due to poor time management. According to the research conducted by Ersoy and Ozden (2011), while nearly half of the participants believed that they could prepare an assignment by copying and pasting the same information from the internet, almost half of them (48.1%) didn't agree with this idea. Researchers emphasized that this situation stems from ignorance about plagiarism. On the other hand, DeVoss and Rosati (2002) and Stubbings and Brine (2003) stated time pressure on students and financial insufficiency were among the reasons for plagiarizing. Various studies have revealed that plagiarism is due to a lack of knowledge (Gursoy and Yildiz 2016; Ma et al., 2007; Uzun et al., 2007; Nemati, 2016; Rezanejad & Rezaei, 2013). This finding coincides with the results of this study. Also, this study argued that one of the reasons for why students plagiarized was lack of time. Supporting this determination, Yardley et al. (2009) stated that students' most common reason to cheat was the limited time perception. This is also compatible with the reasons for plagiarism. As a matter of fact, the students in the study of Eret and Ok (2014) indicated time pressure (deadline) among the reasons for plagiarism. Various studies found similar results (Bamford & Sergiou, 2005; Devlin & Gray, 2007; Ennam, 2017; Eret & Franklyn-Stokes & Newstead, 1995; Foltynnek et al., 2014; Gokmenoglu, 2010; Park, 2003). In Rezanejad and Rezaei (2013), students listed the reasons for plagiarism in order of priority as follows: 1-easiness of plagiarism, 2- lack of training in universities on the issue of plagiarism, 3-lack of time, 4-more confidence and belief in the original text, 5- lack of attention from professors to term projects. Among these reasons, lack of training in universities on the issue of plagiarism and lack of time overlap with the findings of the present study to a great extent.

## SUGGESTIONS

Plagiarism is one of the main barriers to the development of science. Plagiarism is an obvious ethical problem, but it also causes extensive problems in terms of scientific practice. In this study, the dimensions of plagiarism are discussed. The current study advocates that plagiarism is an academic problem and should be prevented. In this context, some suggestions were made. These suggestions are as follows:

- It was determined that pre-service teachers' rates of plagiarism were generally high. Therefore, it should be emphasized effectively at every stage of higher education that plagiarism is a crime.
- It was determined that as the grade level of the students increased, the rate of plagiarism decreased. This is because the higher-grade students who take courses on scientific ethics issues become sensitive to plagiarism. For this reason, it is possible to reduce the rate of plagiarism through courses starting from the first semester of education.
- Male students were found to plagiarize more than female students. In this context, special practical courses on scientific ethics can be taught to male students.
- The rates of plagiarism differed by region. This is because while some academics have anti-plagiarism attitudes, others are more relaxed. Thus, academicians in all universities can be encouraged to take preventive measures against plagiarism.
- The rates of plagiarism differed from department to department. This result is due to the fact that scientific ethics courses are taught at different grade levels in each department. Thus, scientific research and scientific ethics courses can be taught in each department from the first semester.
- Students were generally aware of the concept of plagiarism, but some of them considered plagiarism as the only way due to their circumstances. Thus, conditions can be created to help students access scientific resources in the distance education. Also, necessary equipment can be provided to the students who need it to actively participate in the distance education processes.

- Courses for teaching scientific ethics should be taught comprehensively, and measurement-evaluation dimensions should be carefully designed.
- Academics should not tolerate plagiarism.
- If needed, technological tools should be used to prevent plagiarism.
- Academicians should carefully examine all products prepared by the student. If there is any plagiarism, students should be informed.

Studies have investigated plagiarism and provided suggestions in terms of preventing plagiarism. Uzbay (2016) emphasizes that those responsible for plagiarism are not only students but also those who allow this situation. According to Popyack et al. (2003), educators should focus on the definition of plagiarism and the sanctions for plagiarism in their courses. In addition, they should be closely interested in technology and benefit from various software. Many similar studies have provided recommendations for preventing plagiarism (Avarogullari, 2016; Council of Writing Program Administrators, 2008; Cetin, 2007; Dick et al., 2008; Ellery, 2008; James et al., 2002; Ma et al., 2008; Mojeiko and Rudkouski, 2019; Moon, 2005; Park, 2003; Power, 2009; TUBA Scientific Ethics Committee, 2002; Wilkinson, 2009).

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