

The Attitudes of Primary School Pre-Service Teachers towards Cursive Handwriting

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The aim of this study is to determine the primary school pre-service teachers' attitude toward cursive handwriting and to determine whether a significant difference exists among those pre-service teachers' attitude with respect to gender, class and their universities. In order to collect data "Scale for Attitude towards Cursive Handwriting" developed by the researcher was administered. In the study, descriptive statistics was used. The research sample included sophomore, junior and senior students who study primary school teaching at education faculties of four different universities and who took the handwriting techniques class (n=705). In the analysis of the study, one way ANOVA, Independent Samples t-test, and Kruskal Wallis H tests were conducted. The results of the study revealed that the attitudes of the pre-service teachers towards cursive handwriting did not significantly differ in relation to gender and the university they study; on the other hand, the results indicated that their attitudes were significantly correlated to their year of study at university.

Introduction

Writing which is defined as the act of transferring people's emotions, thoughts, plans, experiences to writing (Sever, 2004, s.24) is the last skill acquired among the other language skills. People use required symbols and signs in accordance with the rules to express their ideas, which makes their ideas legible to others (Akyol, 2000, s.115) and they also transfer all the knowledge structured in their brains to writing (Güneş, 2007, p.159). This results in writing - the outcome of coordinately working thinking process and skill. Throughout its historical process, the transformation of line from a visual value into a symbolic one has reached its peak by means of writing and writing has then been considered the aesthetic image of verbal utterances. Writing whose artistic value has changed into an instrument to teach and educate others and then to the most common means of self-expression has become an indispensable part of teaching and learning as a result of the spread of knowledge. If the act of writing develops in parallel with the speed of thought, it will make it easier to improve the efficiency of writing at the highest level. In the writing process, it is essential for the system of symbols to flow in a progressive and connected manner and also to avoid sharp turns in order not to sabotage the act of writing. In this process, while thoughts in the brain flow to the nerves in the fingertips, the pencil in the hand must be moving fast to orchestrate this flow well. Within this framework, the connections between letters in cursive handwriting provide incredible opportunities to people to turn ideas into symbols without interrupting the speed of thought. The cursive and connected nature of this type of handwriting enables people to write maximum number of words without lifting the pen. With the help of cursive handwriting, the

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ideas collected in the short-term memory but not yet registered in the long-term memory might be protected by the writing system before they are totally forgotten.

Cursive handwriting is a style of writing in which the letters of the language are written 70 degree leaning to the right in a conjoined manner to form words. These joints help learners to integrate and build the information in their brain. It is acknowledged that cursive writing provides various benefits for teaching and mental development. The national and international studies in the literature reveal the positive effects of cursive handwriting (Akyol, 2007; Güneş, 2007; Koç, 2007) such as making writing faster, recognising words easily and distinguishing numbers and markings easily, preventing syllabication, supporting kinesthetic intelligence as well as mental and physical development, improving attention span and in-depth thinking skills. In recent years, constructivist approach and brain research have also contributed to the importance given to teaching cursive handwriting (Güneş, 2007). Moreover, it is stated in the literature that cursive handwriting is the most appropriate style for artistic writing (Koç, 2007). Cursive handwriting also allows people to have their own individualistic style in a way similar to their fingerprints because handwriting of people differ greatly from one another just like their fingerprints which are unique to each individual. It is highly probable for people to reflect their personality in their cursive handwriting and as a result handwriting of people show differences in terms plastic arts just like the differences between the pictures of a building made by different artists. In other words, feelings and thoughts may be expressed in a variety of ways by different people, which enable people to make their expressions distinctive, eternal and unique to their owner. This exclusive situation which creates a temptation for cursive handwriting is one of the most rewarding and satisfying outcomes that can be reached when one enters the magical world of writing.

Rosenblum, Weiss and Parush (2003) state that handwriting affects academic performance. Having good handwriting is considered a prerequisite of academic success in a person's life (Graham, Berninger, Abbott, Abbott and Whitaker, 1997). The related research studies reveal that the problems that people have experienced in handwriting in the early years of their primary education are key determinants of difficulties they experience in the rest of their education life (Harvey and Henderson, 1997). The solution to these problems lie in raising awareness of teachers who will teach handwriting and prospective teachers receiving in-service training about the cognitive, affective and psychomotor dimension of writing. They should also have information about the methods and techniques of teaching handwriting and successfully put them into practice. The success of an education system basically depends on the qualifications of teachers who will implement the system (Kavcar, 1987). Phelps and Stempel (1989) state that many of the teachers fail to focus on teaching handwriting because they have not been trained sufficiently about the teaching techniques of handwriting during their teaching education. Graham et al (2008) also state that teachers receive insufficient training about teaching handwriting and they have misconceptions about the development of writing skills. The above-mentioned views reveal the lack of importance given to teaching handwriting in teacher education programs. Saraç (2002) underlines the significance of the pre-service teachers' attitudes before they start working because it is these attitudes that play an important role in forming their commitment to teaching profession and the teaching techniques they will employ in their teaching career. Hence, it is reasonable to argue that the attitudes that pre-service teachers develop towards cursive handwriting during their teaching education have a significant impact on the successful implementation of teaching cursive handwriting in primary schools. Exploring the nature of the attitudes (either positive, negative or neutral) of pre-service teachers towards cursive handwriting will contribute significantly to both pre-service teachers and the researchers studying this issue.

Chambless and Bass (1995) believe that great importance should be given to professional development of teachers in terms of teaching handwriting. The cognitive, affective and psychomotor behaviors of pre-service teachers that they will develop during their teaching training are of vital importance in determining their success in their teaching career. One of the most important affective behaviors about writing is the “attitudes” developed towards writing. Street (2003) state a strong correlation between pre-service teachers’ attitudes towards writing and their implementation of teaching handwriting practices in their future careers. Chambless and Bass (1995) and Street (2002) emphasize the fact that pre-service teachers with positive attitudes towards writing will teach writing effectively in their teaching career. The studies on the important connection between teachers’ attitudes towards writing and their performance in the classroom also support this correlation (Bratcher and Stroble, 1994; Florio-Ruane and Lensmire, 1990; Grossman et al., 2000; Kennedy, 1998; Schmidt and Kennedy, 1990; Shrofel, 1991). Primary school teachers should have positive attitudes towards cursive handwriting to teach it effectively. This is only possible if pre-service teachers’ attitudes towards cursive handwriting are explored during their teaching education (Arslan, Aşıkcan and Özarlan, 2010).

Investigating the pre-service teachers’ attitudes towards cursive handwriting at universities may enable teacher trainers to adopt new methods and concepts regarding teaching handwriting (Street, 2003). As a matter of fact, the literature review done for this study indicated that there has been no research on pre-service teachers’ attitudes towards teaching cursive handwriting. From the educational point of view, developing positive attitudes towards cursive handwriting will positively affect the success of pre-service teachers in teaching it. Exploring pre-service teachers’ attitudes towards cursive handwriting will make it possible to examine to what extent the expected changes in behaviors regarding teaching cursive handwriting occur in their teaching career. This would also help them to organize their practices in teaching cursive handwriting. This study is thought to contribute to the literature, teachers and academicians in relation to teacher education.

The Purpose of the Study

- What are the pre-service teachers’ attitudes towards cursive handwriting?
- Do the attitudes of pre-service teachers towards cursive handwriting differ in terms of gender and year of study at university?
- Is there a statistically significant relation between the attitudes of pre-service teachers towards teaching cursive handwriting and the university they are studying?

Method

Because the study aims at exploring the attitudes of pre-service teachers towards cursive handwriting, a descriptive survey model is preferred. Descriptive survey models are research methods which try to give an exact description of a situation from past or from the present time. In this model, the event, person or thing, i.e. the subject of the research, is described as they are and in their own terms (Karasar, 1994).

Participants

The participants of the study were determined via purposeful sampling method.

Sophomore, junior and senior students (2nd, 3rd and 4th year students) from four different Turkish universities studying primary school teaching and having taken handwriting techniques course were selected as the participants. All the pre-service teachers studying primary school teaching at the Education Faculty of Bulent Ecevit University, Eskisehir Osmangazi University, Mustafa Kemal University and Mersin University during the academic year 2012-2013 constituted the research population of the study. However, the survey was administered to a total of 728 primary school pre-service teachers who volunteered to take part in the study. Of all these participants, 23 participants were not taken into consideration in the data analysis because they failed to complete the survey so that the data collected from 705 participants was analyzed in the study. Table 1 illustrates the distribution of the participants with regard to their university, year of study and gender.

Table 1. The distribution of the participants with regard to their university, year of study and gender

Sampling Group		f	%
University	Bulent Ecevit University	213	30.2
	Eskisehir Osmangazi University	244	34.6
	Mustafa Kemal University	178	25.2
	Mersin University	70	9.9
Year of Study	2 nd year	264	37.4
	3 rd year	290	41.1
	4 th year	151	21.4
Gender	Female	504	71.5
	Male	201	28.5

As seen in Table 1, 244 (34.6%) of the participants in the sampling group study at Eskisehir Osmangazi University; 213 (30.2%) at Bulent Ecevit University; 178 (25.2%) at Mustafa Kemal University and 70 (9.9%) at Mersin University. 504 (71.5%) of the participants are females and 201 (28.5%) are males.

Data Collection Instrument

“Scale for Attitude towards Cursive Handwriting” developed by the researcher was administered to collect the data for the study. The scale is a 41-item-5-point Likert scale consisting of 22 negative and 19 positive items. In the scale development process, first of all a 57-item draft about cursive writing was written. Then the content validity of the scale was examined by the experts and 2 items were eliminated. With the 55 items remained, the scale was piloted with 379 students. After the pilot study, in order to do the item analysis and measure the validity and reliability of the scale, the following steps were taken respectively: item-total and item-remainder (or residual) correlation tests, item discrimination statistics, factor analysis and internal consistency reliability test. As for the construct validity, Exploratory and Confirmatory Factor Analysis were computed. Exploratory Factor Analysis (EFA) was conducted on 379 and Confirmatory Factor Analysis (CFA) was conducted on 254 pre-service teachers. Exploratory Factor Analysis was performed using the Statistical Package for Social Sciences (SPSS) and Confirmatory Factor Analysis via Linear Structural Relations (LISREL). Confirmatory Factor Analysis of the data produced two factors on the 41-item scale. The Cronbach’s alpha internal consistency reliability of these two factors was calculated .94 and .93. The Cronbach’s alpha coefficient of reliability of the whole scale was

.96. The internal consistency coefficients or reliability of the subfactors was 0.94 for negative attitudes and 0.93 for positive attitudes. The Cronbach’s alpha coefficient for reliability for the whole scale was 0.96. The findings regarding the reliability and validity of the scale indicated that this scale was valid and reliable to explore the attitudes of primary school pre-service teachers’ towards cursive handwriting. As mentioned earlier, the survey was a 5-point Likert scale consisting of five declarative statements numbered as follows: 5=completely agree, 4=agree, 3=undecided, 2=disagree and 1=completely disagree.. On entering the data, the negative items were reverse coded as follows: 1=completely agree, 2=agree, 3=undecided, 4=disagree and 5=completely disagree.

The attitude survey developed by the researchers was administered to 705 pre-service teachers (sophomores, juniors and seniors) studying primary school teaching at the education faculty of four different state universities in Turkey (Bulent Ecevit University, Eskisehir Osmangazi University, Mersin University and Mustafa Kemal University) to explore their attitudes towards cursive handwriting. Kaiser-Meyer Olkin (KMO) Measure of Sampling Adequacy for this scale was calculated .978, Barlett test was 2.045 and Cronbach’s Alpha Coefficient of reliability was .97.

The Analysis of the Data

The data collected from the pre-service teachers were entered into SPSS 15.0. The attitudes of the pre-service teachers were then analyzed regarding three different variables: “university”, “gender” and “year of study”. In the data analysis, as for the personal information, percentages, frequencies and means were calculated. Also, Independent Samples t-test and one way Anova were performed to find out whether there is a significant relation regarding the attitudes of pre-service teachers towards cursive handwriting in terms of the variables “university”, “gender” and “year of study”. In order to interpret the attitudes considering the variables, first of all Test for Homogeneity of Variances (Levene test) was performed to find out any significant relation among groups. Then, to identify in which particular groups there is a significant relation, Kruskal-Wallis test was performed. In order to explore any significant relation among independent variables, the α level was specified as .05 ($\alpha = .05$). As for the interpretation of the means, the following classification was taken into consideration: 1.00- 1.8 “completely disagree”; 1.81 -2.60 “disagree”, 2.61 -3.40 “partly agree”; 3.41-4.20 “agree” and 4.21-5.00 “completely agree”.

Findings

Table 2 illustrates the standard deviations and means of the scale for the attitudes of primary school pre-service teachers towards cursive handwriting.

Table 2. The attitudes of primary school pre-service teachers towards cursive handwriting

SACH attitude	total N	Minimum	Maximum	\bar{X}	Sd
	705	1.00	5.00	2,80	.856

As seen in Table 2, the mean score for the pre-service teachers’ attitudes towards cursive handwriting is 2.80 and the standard deviation is .856. The highest mean that could be taken on the scale is 5. The findings of the data revealed that the attitudes of primary school pre-service teachers were moderate.

Table 3 shows the frequency and percentages of the responses for each item on the Attitudes of Primary School Pre-Service Teachers towards Cursive Handwriting Scale.

Table 3. The mean scores of the attitudes of primary school pre-service teachers towards cursive handwriting

Items	I totally agree		I agree		I partially agree		I do not agree		I do not agree at all	
	f	%	f	%	f	%	f	%	f	%
1 I prefer to use cursive handwriting while I write.	63	8,9	100	14,2	163	23,1	185	26,2	194	27,5
2 I believe using handwriting is a futile act.	85	12,1	184	26,1	145	20,6	150	21,3	141	20,0
3 I do not like using cursive handwriting.	88	12,5	168	23,8	130	18,4	161	22,8	158	22,4
4 I feel bored while reading texts with cursive handwriting.	75	10,6	190	27,0	174	24,7	136	19,3	130	18,4
5 I feel happy when I think about the fact that I shall use cursive handwriting in my professional life.	41	5,8	93	13,2	174	24,7	220	31,2	177	25,1
6 I believe cursive handwriting practices should be spread to other stages of education.	42	6,0	100	14,2	153	21,7	240	34,0	170	24,1
7 I believe cursive handwriting boring.	84	11,9	177	25,1	141	20,0	169	24,0	134	19,0
8 If it were not compulsory I would not attend calligraphy techniques course.	112	15,9	202	28,7	142	20,1	112	15,9	137	19,4
9 Cursive handwriting is almost a torture for me.	118	16,7	195	27,7	158	22,4	115	16,3	119	16,9
10 In professional teaching I demand my students to use handwriting.	105	14,9	198	28,1	138	19,6	139	19,7	125	17,7
11 I feel myself comfortable while using cursive handwriting.	38	5,4	116	16,5	166	23,5	226	32,1	159	22,6
12 I would not schedule cursive handwriting courses in primary education if only I could.	104	14,8	187	26,5	124	17,6	130	18,4	160	22,7

13	I believe I shall use cursive handwriting a lot in my life.	44	6,2	105	14,9	164	23,3	215	30,5	177	25,1
14	I find cursive handwriting courses in primary education totally useless.	106	15,0	174	24,7	122	17,3	156	22,1	147	20,9
15	It is quite complicated to use cursive handwriting.	94	13,3	201	28,5	186	26,4	123	17,4	101	14,3
16	I believe all the efforts exerted to learn cursive handwriting are good for nothing.	95	13,5	215	30,5	156	22,1	132	18,7	107	15,2
17	I want to develop my cursive handwriting skills.	75	10,6	179	25,4	182	25,8	170	24,1	99	14,0
18	Cursive handwriting makes me passionate.	29	4,1	116	16,5	149	21,1	260	36,9	151	21,4
19	Cursive handwriting makes me more self-confident while writing.	36	5,1	117	16,6	162	23,0	235	33,3	155	22,0
20	Using cursive handwriting is a waste of time in my opinion.	95	13,5	215	30,5	147	20,9	136	19,3	112	15,9
21	Cursive handwriting makes me more passionate and eager to write.	44	6,2	105	14,9	174	24,7	236	33,5	146	20,7
22	Cursive handwriting practices are great fun for me.	44	6,2	114	16,2	186	26,4	209	29,6	152	21,6
23	I would have to spare half of the day to write in cursive handwriting the things I easily write in block writing.	54	7,7	123	17,4	159	22,6	179	25,4	190	27,0
24	I believe the motives to teach cursive handwriting in primary schools is meaningless.	80	11,3	193	27,4	147	20,9	135	19,1	150	21,3
25	I hate cursive handwriting.	147	20,9	184	26,1	161	22,8	101	14,3	112	15,9
26	I believe cursive handwriting improves my aesthetic taste.	94	13,3	184	26,1	195	27,7	142	20,1	90	12,8
27	Cursive handwriting has so many interesting aspects in my opinion.	66	9,4	144	20,4	173	24,5	202	28,7	120	17,0
28	I do not plan to use cursive handwriting outside school.	58	8,2	115	16,3	164	23,3	179	25,4	189	26,8

29	I get mad when I think about the fact that in my professional life I will be forced to use cursive handwriting.	92	13,0	192	27,2	150	21,3	135	19,1	136	19,3
30	The most meaningless and useless course I have ever taken in my academic life is cursive handwriting.	146	20,7	210	29,8	151	21,4	104	14,8	94	13,3
31	I feel anxious about teaching cursive handwriting.	87	12,3	184	26,1	198	28,1	136	19,3	100	14,2
32	Weekly cursive handwriting classes should be more in number.	44	6,2	92	13,0	182	25,8	231	32,8	156	22,1
33	I believe primary education cursive handwriting classes are quite effective.	65	9,2	133	18,9	167	23,7	216	30,6	124	17,6
34	Cursive handwriting will mean not much to me while I teach.	104	14,8	235	33,3	147	20,9	118	16,7	101	14,3
35	The attention I pay while using cursive handwriting is reflected in the same manner to different events in my daily life.	58	8,2	138	19,6	226	32,1	165	23,4	118	16,7
36	I believe I write more aesthetically and faster in cursive handwriting.	56	7,9	85	12,1	157	22,3	221	31,3	186	26,4
37	Compared to the former type of writing I believe I provide faster and more readable products in cursive handwriting.	42	6,0	75	10,6	147	20,9	229	32,5	212	30,1
38	I feel like I am performing a work of art while using cursive handwriting.	38	5,4	127	18,0	175	24,8	192	27,2	173	24,5
39	In my professional life I shall advise my students to use block writing.	95	13,5	168	23,8	184	26,1	127	18,0	131	18,6
40	Since I will not be using cursive handwriting while teaching professionally I do not pay much attention to this course	158	22,4	246	34,9	139	19,7	90	12,8	72	10,2
41	I become happy since I produce an appraisable piece of work with	64	9,1	147	20,9	194	27,5	159	22,6	141	20,0

cursive handwriting.

When the responses to all the items regarding cursive handwriting taken into consideration on the scale, the feelings of the participants are as follows: 27.5% of the pre-service teachers did not want to use cursive handwriting; 26.1% of them considered it futile; 23.8% did not like it; and 27.0% stated they got bored when reading materials in cursive writing. Moreover, 25.1% of the participants thought it was boring, 27.7% considered it a torture and 28.1% did not demand their students to use cursive handwriting in their teaching practices. In addition to this, 32.1% of pre-service teachers stated that they did not feel comfortable when using cursive handwriting; 24.7% expressed that they found cursive handwriting courses useless in the primary school education; 28.5% stated learning cursive handwriting was complicated and 30.5% said it was a waste of time to write in cursive. In the light of the findings mentioned above, it might be stated that the attitudes of primary school pre-service teachers were not positive.

As for the gender variable, whether the attitudes of pre-service teachers towards cursive handwriting differ was shown in Table 4.

Table 4. The attitudes of pre-service teachers towards cursive handwriting regarding gender

Gender	N	\bar{X}	Sd	t	P
Male	201	2.8150	.82986	.519	.604
Female	504	2.7779	.92040		

Df=sd= 703

According to Table 4, the average mean score for male participants' attitudes towards cursive handwriting is $\bar{X} = 2.815$ and it is $\bar{X} = 2.777$ for females. The analysis of the data revealed no statistically significant difference between male and female participants in terms of their attitudes towards cursive handwriting.

In addition to gender variable, One-Way ANOVA was computed to investigate whether the attitudes of the participants differed regarding their year of study at university was shown in Table 5.

Table 5. The results of ANOVA about the attitudes of pre-service teachers towards cursive handwriting in terms of their year of study at university

Source of Variance	Sum Squares	df	Mean Squares	F	p
Between groups	32,996	2	16.498		
Within groups	483,030	702	.688	23,977	,000
Total	516,026	704			

As it is seen in Table 5, the results indicated a statistically significant difference in the attitudes of pre-service teachers regarding the year of study at university. In order to compare the differences in the scores according to the year of study, the data was analyzed to see whether it followed a normal distribution. For the nonhomogeneous groups [(Levene $F=3,273$); ($p=,038$)], to find out where the differences were Kruskal-Wallis was computed.

The results of this analysis are illustrated in Table 6.

Table 6. The results of Kruskal-Wallis test of the attitudes of pre-service teachers towards cursive handwriting regarding the year of the study at university

Year of Study	N	\bar{X}	Sd	Mean Rank	SD	Kruskal-Wallis Chi ²	p
2nd year	264	2.5270	.87346	287,31	2	44,522	,000
3rd year	290	2.9949	.78573	397,81			
4th year	151	2.9239	.83250	381,79			

As seen in Table 6, the results of Kruskal-Wallis test indicated that year of study at university influenced the attitudes of primary school pre-service teachers towards cursive handwriting ($p < 0.05$). 3rd year (juniors) pre-service teachers had higher attitudes towards cursive handwriting than 2nd and 4th year (sophomores and seniors) pre-service teachers majoring primary school education.

As for the variable “university”, one-way ANOVA for independent samples was computed to investigate whether the attitudes of the participants differed significantly regarding the university they are studying (Table 7).

Table 7. The comparison of the attitudes of primary school pre-service teachers towards cursive handwriting regarding the university variable

The University Studied	N	\bar{X}	Sd	Source of Variance	Sum of Squares	df	Mean of Squares	F	p
MKU	178	2.6699	.89985	Between Groups	4.706	3	1.569	2.151	.09
BEU				511.320	701	.729			
ESOGU	244	2.8501	.81949	Within Groups					
MU	70	2.9150	.80086	Total	516.026	704			
Total	705	2.8045	.85615						

Note: MKU=Mustafa Kemal University; BEU=Bulent Ecevit University, ESOGU=Eskisehir Osmangazi University; MU=Mersin University

As illustrated in Table 7, the analysis of the data revealed no significant difference in the attitudes of primary school pre-service teachers towards cursive handwriting regarding the university they studied ($F(3,70)=2.15$, $p > .05$).

Conclusions and Discussion

This study has been carried out to detect the attitudes of pre-service teachers towards cursive handwriting with respect to different variables. The results of the study indicated that the attitude scores of pre-service teachers towards cursive handwriting is moderate ($\bar{X}=2,80$). In the literature, there are some studies that have explored the attitudes of different sampling groups towards cursive handwriting. The findings of this study do not correspond to the findings of the studies which revealed that the attitudes of primary school teachers' towards cursive handwriting was positive (Yıldırım and Ateş, 2010) and students were glad to have cursive handwriting skills (O'Neill, 2008).

Street (2003) underlines the fact that the attitudes of pre-service teachers towards writing are correlated to their practices of teaching writing. Besides, in the literature there exist other studies that demonstrate the important relationship between the attitudes of teachers towards writing and their performance in the classroom (Bratcher and Stroble, 1994; Grossman et al, 2000; Schmidt and Kennedy, 1990). Florio-Ruane and Lensmire (1990) state that preservice teachers possess background knowledge about writing and teaching and they reflect this knowledge in their teaching profession. In this sense, it is essential for pre-service teachers to have positive attitudes towards writing in order for them to teach cursive handwriting effectively in their teaching career because it is the teachers' primary responsibility to teach writing and promote motivation and interest in writing (Ceran, 2013). Therefore, it would contribute to stimulate motivation in their future students for cursive handwriting if future teachers have positive attitudes towards it. Research show that writing attitudes of students can be changed positively by effective university courses (Chambless and Bass, 1995; Franklin, 1992). In addition to this, Coşkun (2007) emphasizes the fact that if pre-service teachers have negative attitudes towards cursive writing, in the first place, precautions should be taken to reinforce positive attitudes and eliminate fears and negative feelings. Developing negative attitudes towards cursive handwriting will also lead to inefficiencies in teaching and using this type of writing. Some research (Bayraktar, 2006; Bektaş, 2007; Beyazıt, 2007; Coşkun and Coşkun, 2012; Turan 2007) revealed the fact that teachers consider themselves incompetent in using and teaching cursive handwriting. This incompetency might be related to the negative attitudes they have developed as pre-service teachers and the lack of training they have received about cursive handwriting. As a matter of fact, the study conducted by Coşkun and Coşkun (2012) revealed the fact "the success of teachers in teaching cursive handwriting is moderate", which supports the findings of the present study.

Another important purpose of the study is to investigate the relation between the attitudes of pre-service teachers towards cursive writing and gender. The analysis indicated no statistically significant relationship between these two, which demonstrates that gender is not a key determinant for the formation of attitudes towards cursive writing.

The results of the study indicated a statistically significant relationship between the attitudes of pre-service teachers towards cursive handwriting and year of study. Junior (3rd year) pre-service teachers were found to have higher positive attitudes than sophomores (2nd year) and seniors (4th year). This result corresponds to the research showing a decrease in the success of senior students (4th year) in teaching cursive writing (Coşkun and Coşkun, 2012). This result might lead to the conclusion that the year of study of the pre-service teachers had an important impact on the attitudes of pre-service teachers towards cursive handwriting. The fact that sophomore (2nd year) pre-service teachers had relatively lower attitudes towards cursive handwriting might be the result of the quality of the education they received in handwriting techniques classes; the quality of the teaching-learning processes; the promotion of motivation in pre-service teachers in the classroom; and the incomplete perceptions they had about the importance of cursive handwriting. Moreover, the reason why senior (4th year) pre-service teachers had lower attitudes towards cursive handwriting than juniors (3rd year) might arise from the fact that seniors had higher anxiety levels due to the Public Personnel Selection Examination (the Turkish acronym is KPSS) they were to take after graduation. It might be argued that Turkish Language and Primary Education courses given to junior (3rd year) students in Education Faculties and the content information provided on the qualities and importance of cursive handwriting in these courses might contribute to the formation of higher attitudes of junior pre-service teachers' towards cursive handwriting.

The results of the study also indicated no statistically significant relationship between the

attitudes of pre-service teachers towards cursive handwriting and the university they were studying. This might be associated with the quality of teaching-learning processes and the standard curricula implemented in teacher education programs.

Before making some generalizations and suggestions based on the research findings, the limitations of the study are to be pointed out. First of all, this study is limited to the research population and sample size. Thus, conducting this study with diverse samples of students at different grades and universities might indicate different implications and suggestions. Second, as one of the important criteria in designing the study, the participants were supposed to take handwriting techniques class to participate in the study. However, their success in the class was not taken into consideration; thus, the relationship between their success and their attitudes towards cursive handwriting could not be explored. This relationship might also be explored. In addition to this, based on the results of the study, suggestions for further studies might be presented as follows:

- The variables affecting the attitudes of primary school pre-service teachers towards cursive handwriting may require in-depth research. The future training activities may be designed and implemented by taking into consideration these variables.
- The attitudes of pre-service teachers and currently working primary school teachers towards cursive handwriting might be explored.
- The attitudes of primary school students towards cursive handwriting might be investigated.
- This study might be conducted to different research populations.
- The reasons why pre-service teachers have negative attitudes towards cursive handwriting and possible solutions might also be investigated.
- The data of this study was analyzed using quantitative data analysis procedures. The perceptions and opinions of pre-service teachers about cursive handwriting might be investigated thoroughly by employing qualitative data analysis procedures.

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