

A modeling study with 4th graders

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ABSTRACT

People need effective writing skills to successfully maintain their personal development and academic life. This research studies, the correlations among primary school 4th graders' writing anxiety, writing attitude, and writing self-efficacy. The research has been designed in the correlational survey model; and a total of 255 primary school 4th-grade students, 95 male and 160 female, participated voluntarily in the research. Three psychometric tools have been used for data collection. Due to small number of participants, the data have been analyzed using the partial least squares structural equation modeling. According to the results, primary school 4th-grade students' writing attitude does not significantly affect writing anxiety (H1). Moreover, writing self-efficacy does not have a significant effect on writing anxiety (H2) as well. However, writing self-efficacy significantly affects writing attitude (H3). The success of writing depends on the students' writing self-efficacy, attitude towards writing, and writing anxiety. In order for successful writing, the level of self-efficacy should be high, the attitude towards writing should be positive and there should be no anxiety about writing.

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1. INTRODUCTION

One of the fundamental needs of people, after physiological needs, is communication; and language is the most effective way of communicating. Writing, one of the four basic language skills, is a skill that people use to make their thoughts, experiences, and dreams permanent, to share them with others, and to pass them on to future generations [1]. Writing can be defined as putting feelings, thoughts, and dreams in one's mind about any subject into letters in a certain order [2]. Writing, which is the expression of feelings, thoughts, wishes, and dreams with the help of written signs, is a skill with lots of perceptual and psycho-motor aspects. People generally think that writing is more difficult than speaking, and in turn, they refrain from writing [3] due to poor readability, reluctance to write, difficulty in writing, slow writing, or feeling of discomfort [4]. Therefore, it is possible to conclude that many factors affect individuals while writing [5]. Any weakness that might come up regarding the physical, cognitive and affective dimensions during the writing process may negatively affect the quality of the text, as well [6]. Cognitive and emotional areas like attitude, motivation, anxiety, self-control, self-efficacy, and self-regulation are also some of the factors that directly affect writing [7].

Attitudes are effective in acquiring writing skills as in various activities of people [1]. Attitude, which means the way people think and feel about someone or something, is the tendency to react positively or negatively to an object, person, institution, and event [8]. On the other hand, writing attitude can be defined as

an emotional tendency that varies between happy and unhappy, including how writing activity makes the writer feel [9]. That is why, students' feelings towards writing affect their writing skills either positively or negatively. If the student develops a negative writing attitude, it is difficult for him/her to like writing and improve his/her writing skills; and one of the affective factors that directly affect students' writing success and writing attitude is writing anxiety [1], [5], [10], [11]. Bloom [12] describes writing anxiety as "a label for one or a combination feelings, beliefs, or behaviors that interfere with a person's ability to start, work on, or finish a given writing task that he or she is intellectually capable of doing."

Acquiring writing skills, which is considered more difficult to acquire, compared to other language skills, may cause individuals to develop a negative attitude towards writing, and in turn, to experience writing anxiety due to the difficulty and complexity it has [13]. Writing anxiety which is a major barrier to successful writing [11] refers to an innate state that shows itself up in the form of sadness, anger, or fear against writing when more writing is necessary, which is called "negative self-concept" in the literature, and it increases the tendency to stay away from "written expression", particularly for people with poor writing skills, who think that writing is a difficult task to overcome. One can come across this reaction, which has a negative impact on writing performance, at all levels of education [10]. The literature indicates that writing anxiety has a significant negative impact on students' writing performance [14]. In terms of written expression, the main purpose of primary school is to provide students with the basic writing skills that they need in daily life. That is why, developing writing skills should be handled in a flexible way [3].

Another affective feature affecting students' writing skills is self-efficacy. According to Bandura [15], there is a relation between writing skills and self-efficacy. Self-efficacy in writing can, therefore, be described as one's belief in his/her ability (or confidence) to write in a specific situation [16]. Students with a high perception of writing self-efficacy put more effort into writing and choose effective strategies and implement them in order to do the tasks they think are difficult. In numerous studies, it is stated that students with high self-efficacy have a higher level of writing performance than students with low self-efficacy [15], [17], [18]. Self-efficacy considerably affected fourth-grade students' writing quality and the length of their stories [19]. Moreover, students with high writing self-efficacy are more eager to practice strategic writing behaviors such as giving details and drawing outlines that can improve the quality of their writing [19].

So far, it is stated that there are several variables affecting writing skills. There are also lots of studies on the effects of affective characteristics such as attitude, anxiety, and self-efficacy that affect writing skills [10], [20]–[23]. Some studies reveal that in addition to affecting success in writing [9], [11], [24], positive attitudes also reduce writing anxiety [1]. According to Daly, problems related to writing skills and lack of continuity in writing can be among the causes of negative attitudes toward writing. The negative attitude, affecting writing success, may create writing anxiety, in turn [11]. Yaman's study [25] also states that when students' writing anxiety increases, they have a negative attitude not only towards writing but also towards Turkish courses. The results of studies done with individuals at different educational levels support the correlation between writing anxiety and self-efficacy. As the student's self-efficacy belief increases, his/her writing anxiety decreases, or as his/her writing anxiety increases, his/her self-efficacy belief decreases [10], [22], [23], [26]. Increasing writing self-efficacy also increases writing success by reducing writing anxiety at a certain level. To sum up, self-efficacy, which is decisive in the acquisition of writing skills, is effective in developing and reinforcing writing skills [7].

Studies also indicate that a student's perception of self-efficacy towards writing is associated with the writing attitude [9], which is defined as an effective regulation causing an individual to feel happy or unhappy while writing. This means that an individual with positive writing self-efficacy will probably have the strength to continue writing despite all the difficulties; s/he will persevere and will be willing to maximize his/her efforts to reach the goal [27]. Students with a high level of writing self-efficacy and attitude towards writing are more successful in writing activities. One who believes that s/he can be successful in writing effectively uses his/her capacity [20]. The affective qualities of writing (anxiety, motivation, attitude, and self-efficacy) must be kept under control in order to produce texts that are smooth in form and rich in cognitive content, well-structured, and creative because individuals with a desired level of affective readiness can focus on the cognitive and mechanical aspects of writing [6].

A number of studies have been done in the World and in Türkiye on affective characteristics such as writing self-efficacy, attitudes towards writing, and writing anxiety that affects writing skills. Taking those studies into account, it can be inferred that writing self-efficacy, attitudes towards writing, and writing anxiety are of great importance in the development of written expression skills [9]–[11], [21]–[23]. However, on the other hand, the literature review reveals that there is no holistic study on, whether writing self-efficacy, attitudes towards writing, and writing anxiety of primary school students are related to each other, and the level and direction of relationship, if any. Therefore, it is thought that studying the effects of writing self-efficacy, attitudes towards writing, and writing anxiety on written expression will contribute to the literature.

Accordingly, the primary purpose of this research is to reveal whether there are correlations among primary school 4th-grade students' affective characteristics such as anxiety, attitude, and self-efficacy towards writing and if there are any, determine their level and direction. Moreover, a model explaining and predicting the correlations among the determined variables has been put forward as well. Accordingly, the hypotheses of the research are: i) There is a negative correlation between the writing attitudes of primary school 4th graders and their writing anxiety (H1); ii) There is a negative correlation between primary school 4th graders' writing self-efficacy and writing anxiety (H2); and iii) There is a positive correlation between primary school 4th graders' writing attitudes and writing self-efficacy (H3).

2. RESEARCH METHOD

This study has been designed in the correlational survey model, a descriptive research method, which is also an attempt to examine the correlations among attitudes towards writing, writing self-efficacy, and writing anxiety. The correlational study is used to determine the degree of change between variables. To clarify, it tests whether a change in one of the research variables corresponds to a similar change in another variable [28]. The research steps in this research are determining the research problem and the sample, data collection, data analysis, and interpretation of the results. The researchers, first, did a thorough literature review, and then considered whether the correlations among writing attitudes, writing self-efficacy, and writing anxiety are worth studying.

As a result of the literature review, it has come out that there is no research studying the research variables in a holistic way. Accordingly, taking the purpose of the study into account, a convenient sample was thought to be useful in order to achieve the determined goal in the second stage of the research. In other words, the convenient sampling method, which is the selection of easily accessible participants, has been adopted in the research. Furthermore, the validity and reliability scores of the scales in previous studies were reviewed in order to make sure that the tools used in data collection are valid and reliable.

In the next stage, the participants filled out the data collection tools, and the research data were collected. In the fourth stage, the data have been analyzed using structural equation modelling and some descriptive statistics have also been done. Lastly, the findings have been interpreted and discussed taking the literature into account.

2.1. Participants

The purpose of this research is to test the correlations among writing anxiety, writing attitude, and writing self-efficacy; and in the research, the correlational survey model has been used. The participants are 255 fourth-grade students studying in primary schools affiliated to the Turkish Ministry of National Education. 37.42% of the participants are males and 62.58% of them are females.

2.2. Data collection tools

In this research, three different data collection tools have been used. The first data collection tool, the writing attitude scale for primary school students, developed by Susar-Kırmızı [24], consists of 34 items. The internal consistency of the scale was calculated 0.90. Sample items are available in Table 1. In the model tested in this research, since the writing attitude scale has a unidimensional structure, using the parceling method three parcels were assigned. In the parceling method, parcel scores are used instead of observed item scores in structural equation model analyses [29]. When parcels are carefully constructed, they can be used as effective, reliable, and valid indicators of latent variables [30]. In studies where the number of items is large but the sample is small, it is suggested that the use of parcels would be appropriate provided that the factor structure of the measured concept is taken into consideration [29]–[31].

Table 1 Sample items from data collection tools used in the study

Scale	Factor	Items
The writing attitude	TWA01	I like to write what I feel.
	TWA02	I think writing is interesting.
	TWA03	I don't like to read what I write to others.
Writing anxiety	The writing process	I have a headache when I write.
	Sharing	My voice trembles when I read something I wrote in class.
	Prejudice	I avoid writing because I can't write well.
Writing self-efficacy	Evaluation	The thought that my writing will be criticized makes me uneasy.
	Efficacy in writing	Writing is a difficult activity.
	Planned writing	I can determine the type of text.
	Independent writing	I can use the new lexical entries in my texts.

The second data collection tool, consisting of four factors and 20 items, is the writing anxiety scale for primary school students developed by Temel and Katranci [1]. The factors of the writing anxiety scale are the writing process, sharing, evaluation, and prejudice. Each factor has 7, 5, 3, and 5 items, respectively. The writing process factor explains 36.96%, the sharing factor explains 7.94%, the evaluation factor explains 7.44%, and the prejudice factor explains 6.01% of the total variance. The internal consistency of the scale was calculated 0.91. Sample items to the factors are available in Table 1.

The last data collection tool, the writing self-efficacy scale for primary school students, developed by Bulut *et al.* [32] consists of 10 items and three factors. The factors of the scale are efficacy in writing, planned writing, and independent writing. Each factor has 3, 3, and 4 items, respectively. The efficacy in writing factor explains 27.93%, the planned writing factor explains 12.58%, and the independent writing factor explains 11.12% of the total variance. The internal consistency of the scale was calculated 0.69.

2.3. Data collection and data analysis

After getting the necessary permissions, the research data have been collected by the researchers, face-to-face, in classroom environment. Before the data collection, the students were informed about the purpose of the research. In addition, in order for confidentiality, the researchers informed the participants about not writing their private information such as their names, and school numbers, on the data collection tools. In accordance with the research method, the data have been analyzed by means of partial least squares structural equation modeling (PLS-SEM). SmartPLS 3.0, which has a graphical user interface and free software, has also been used. PLS [33]–[35] and Linear Structural Relations [36] are the most widely used SEM techniques. PLS, a component-based SEM technique has also an estimation procedure. In this research, PLS has been used owing to some of its helpful features. One of them is that although PLS-SEM is a reliable analysis technique for small samples, covariance-based SEM is not convenient for small groups. Therefore, it might be a better idea to use PLS-SEM in inferential studies which do not have a normal distribution and have relatively small samples. The PLS-SEM simultaneously studies the psychometric properties of the model measured in terms of convergent validity, discriminant validity, internal consistency [37], and parameters such as the degree of correlation and the level of significance between the variables. Since the composite reliability and Cronbach's-alpha coefficients are above 0.7, it is assumed that internal consistency has been achieved [38]. Moreover, all the reliability coefficients are above the acceptable value of 0.70 and the average variance extracted (AVE) is above 0.50 [39]. Table 1 has sample items from the scales used in the research.

3. RESULTS AND DISCUSSION

This section deals with research findings. Additionally, in this part, the researchers discuss the findings taking previous research into account. For this purpose, descriptive statistics for the 4th-grade students' attitudes towards writing, writing anxiety, and writing self-efficacy factors are presented in Table 2.

Table 2. The descriptive statistics

Scales	Number of items (k)	Min score	Max score	Mean	Mean/k	Sd
TWA	34	35.0	170.0	104.50	3.07	34.72
TWA01	11	11.0	55.0	34.03	3.09	12.53
TWA02	11	12.0	55.0	33.86	3.07	10.19
TWA03	12	12.0	60.0	36.67	3.05	14.08
WA	20	23.0	60.0	45.50	2.27	6.09
WA_TWP	7	9.0	21.0	16.47	2.35	2.52
WA_S	5	5.0	15.0	10.76	2.15	2.11
WA_P	5	6.0	15.0	11.89	2.37	1.83
WA_E	3	3.0	9.0	6.29	2.09	1.54
WSE	10	10.0	30.0	20.04	2.00	6.05
WSE_EP	3	3.0	9.0	6.00	2.00	2.006
WSE_PW	3	3.0	9.0	5.98	1.99	2.04
WSE_IW	4	4.0	11.0	8.05	2.01	2.67

According to Table 2, 4th-grade students' mean score for writing attitude is 3.07. On the other hand, they have moderate writing anxiety (M/k WA=2.27). While the highest mean in the writing anxiety scale is in the prejudice factor, the lowest mean is in the evaluation factor. Table 2 shows that the mean for participants' writing self-efficacy scale is at a medium level (M/k WSE=2.00). For the same scale, mean/k scores for the factors are nearly similar, too.

3.1. The exploratory analysis

The factor analytic procedures have a couple of purposes [40]. One of them is to identify latent structures or develop hypotheses about possible structures [41]. With this aim in mind, the researchers did an exploratory analysis to reveal the correlations between the items in the factors of the data collection tools. The results of the principal component analysis are reported in Table 3.

Table 3. The principal component analysis results

Construct	Factors	Mean	Std.	Factor loading	Cronbach's alpha	Composite reliability	AVE
TWA	TWA01	104.50	34.72	.95	.93	.92	.80
	TWA02			.92			
	TWA03			.94			
WA	WA_TWP	45.50	6.09	.71	.76	.84	.57
	WA_S			.82			
	WA_P			.76			
	WA_E			.73			
WSE	WSE_EP	20.04	6.05	.85	.93	.95	.88
	WSE_PW			.91			
	WSE_IW			.91			

In order to test the suitability of the proposed model the researchers adopted convergent validity. The prerequisites of convergent reality are: i) item reliability of each measure by using factor loadings should be (>0.7); ii) composite reliability of each construct should be (>0.7); and iii) the AVE should be (>0.5). Taking Table 3 into account, it is clear that: i) the factor loads of all items are higher than 0.7; ii) the composite reliability of each item is higher than 0.7; and iii) the AVE is higher than 0.5.

3.2. Hypothesis testing

All path coefficients in the internal model have been analyzed using the “5000 sample bootstrapping procedure” and the “two-tailed t-test”. Accordingly, the findings are presented in Figure 1 and Table 4. Figure 1 shows the findings regarding the path coefficients of the model. Considering the path coefficients, it is clear that the variables, in which primary school 4th-grade students' attitudes towards writing, their writing anxiety, and writing self-efficacy levels are studied, have been listed, and the correlations are presented in Table 4.

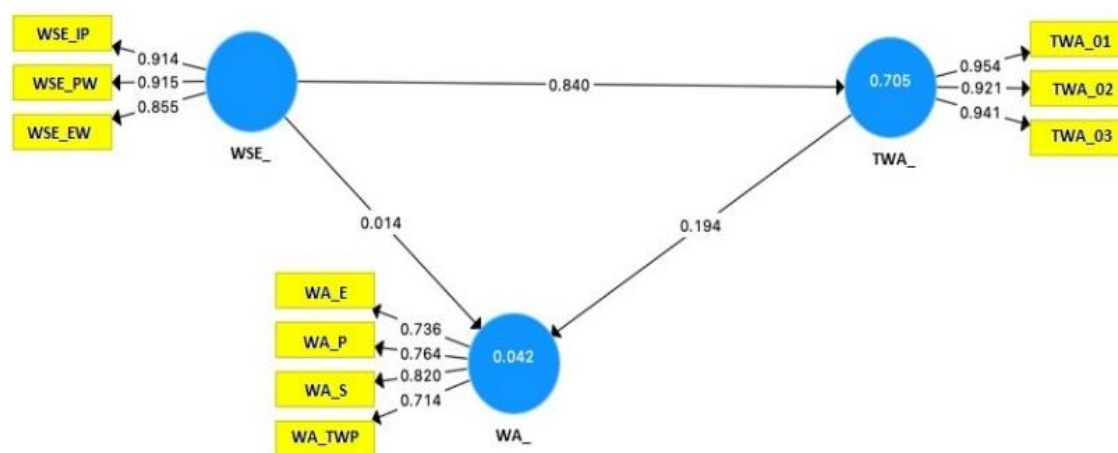


Figure 1. Path coefficients for the model

Table 4. The correlations

Construct	TWA	WA	WSE
TWA	1		
WA	.207	1	
WSE	.841	.179	1

In this research, three hypotheses have been formulated regarding primary school 4th-grade students' writing attitudes, writing anxiety, and writing self-efficacy. It is obvious in Table 5 that H1 and H2 have been rejected and H3 has been accepted. Taking the results into account, it can be concluded that writing attitude and writing anxiety, and writing self-efficacy and writing anxiety do not affect each other while writing self-efficacy and attitude affect each other.

Considering the teaching process of writing to primary school students, it is obvious that those who have a positive attitude towards writing have a low level of writing anxiety, and those who have a negative attitude have a high level of writing anxiety [1]. It has come out that the hypothesis (H1), in this research, contradicts the literature. In other words, depending on the research data, there is no correlation between the writing attitudes of primary school students and their writing anxiety. However, the literature indicates that there is a positive correlation between writing self-efficacy and writing attitude [42].

Table 5. The hypothesis testing

Hypothesis	Path	Direct Effect	Indirect Effect	Total Effect	Path-Coefficient	T value	Accept/Reject
H1	TWA-WA	.194	.000	0.194	.194	1.636	Reject
H2	WSE-WA	.013	.163	0.176	.014	.103	Reject
H3	WSE-TWA	.840	.000	0.840	.840	44.43	Accept

According to the literature, there is a negative correlation between writing self-efficacy and writing anxiety of primary school students, that is, those with high writing self-efficacy have low writing anxiety or vice versa [22], [26], [43], [44]. Once more, it has come out that the hypothesis (H2), in this research, contradicts the literature. In other words, depending on the research data, there is no correlation between writing self-efficacy and writing anxiety.

The fact that there is no correlation between hypotheses, H1, and H2, is thought to be related to the period during which the research was done. This research corresponds to the time when the COVID-19 pandemic decreased and formal education started face-to-face again. As we know it, primary school students got all their courses through distance education during the pandemic. However, instead of learning on their own, primary school students often learn by socially interacting with their peers and using the learning materials under the leadership and control of their teachers [45]. On the other hand, research indicates that the teaching activities carried out during the pandemic affected the students negatively both internally and externally. Some of the internal factors that negatively affected students during distance education are low motivation, inactivity, distraction, and low productivity. On the other side, the external problems affecting them negatively are minimum teacher supervision, the limited interaction between the teacher and the student, the decrease in family support, the decrease in student participation, and the decrease in competition and social acceptance [46]–[48].

It is especially important for primary school students to learn and develop their Turkish (the native language), to be successful in all courses. Concerning writing skills, it is also important for the student to have enough knowledge and experience during the preparation for courses [2]. Having the students do reading activities, giving the required preparation time for writing, evaluating sample writing activities, and giving feedback will play an important role in the formation of the necessary cognitive infrastructure [49]. In the Turkish course, which was taught through distance education during the pandemic, problems related to online systems, insufficient technological infrastructure, short course hours, inadequate teacher and family supervision, the idea that writing is time-consuming, the fact that teachers could not control writing assignments [46], [47] are thought to neutralize the interaction that may exist between the variables by greatly influencing the affective features that are necessary to improve writing skills [46].

Regarding the limitations of this research, one of them is that formal education was offered by means of distance education due to the COVID-19 pandemic, and distance education negatively affected primary school students in many ways, just as the case was at all levels of education. The research data were collected during the adaptation process to face-to-face education, which started after the distance education period. Another limitation of the study is that the research data on students' writing attitudes, writing anxiety, and writing self-efficacy were collected using psychometric data collection tools. This may cause students not to reflect their thoughts about writing thoroughly. Therefore, studies taking student opinions that will cover the COVID-19 pandemic period and beyond into consideration can be done. The researchers also think that the major limitation of this research is the relatively low number of participants. With a larger number of participants, the correlations between the affective characteristics of writing skills can be studied using either mixed or quantitative research methods with students from different socio-economic backgrounds and living in different settlements.

Additionally, it is not easy to determine the effects of distance education activities carried out during the COVID-19 pandemic on the skill areas of the Turkish course in a short period. In this research, done after the pandemic, the researchers studied which practices were done during the pandemic in the Turkish course, and some suggestions have been made about what should be done following the pandemic period. To illustrate, revealing the positive and negative outcomes experienced in the Turkish course and studying them from a scientific perspective may be important in terms of understanding the experiences of teachers and students, and the results of the studies may also be a guide in planning distance education activities in the Turkish course, in primary schools.

To sum up, in this study, it was found that contrary to previous studies [22], [26], [43], [44], there is no relationship between primary school students' attitudes towards writing and writing anxiety, and between their writing self-efficacy and writing anxiety. The fact that the study was done during the period when the effects of the COVID-19 pandemic continued to be prevalent may have an effect on the results. Therefore, it can be inferred that the pandemic also affected students' affective characteristics towards writing.

4. CONCLUSION




This research reveals the correlation between primary school 4th-grade students' writing attitudes, writing anxiety, and writing self-efficacy. The research findings led the researchers to two main inferences about writing skills. The first one of them is that 4th grade primary school students' writing self-efficacy significantly affects their writing attitudes. Thus, it can be concluded that the writing self-efficacy levels of primary school 4th grade students positively affect their writing attitudes and contribute to the development of their writing skills. Therefore, it can be concluded that primary school students with high writing self-efficacy also have high writing attitudes. In addition, it is thought that, during the COVID-19 pandemic the effective use of technology may have contributed to the students' ability to work independently, progress at their own learning pace, and to the effective use of communication tools. This in turn, helped to improve students' self-efficacy and have contributed to the correlation between writing self-efficacy and writing attitude. The second inference is that even though this research was not done to reveal the effects of the COVID-19 pandemic on the writing skills of primary school students, some affective characteristics of students related to writing skills have been negatively affected due to distance education during that period. Finally, structural equation modeling studies generally aim to determine a situation, and this research aims to reveal the relationship between affective characteristics that are known to have an effect on students' writing performance. As in this study, it is thought to be important for taking measures to reduce the effect of characteristics that negatively affect students' writing skills (such as writing anxiety) and to increase the effect of characteristics that positively affect students' writing skills (such as writing attitude, writing self-efficacy).

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