

A Validity and Reliability Study of Story Writing Anxiety Scale*

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Abstract. Stories have become one of the ways to provide information more effectively in so-called age of technology, the 21st century. Moreover, it is seen that advertising industry storifies what they desire to commercialize. Teaching students in a storified way enables persistence of learning. The effect of storytelling and writing, which already exists in many aspects of life, on secondary students' anxiety has been a key concern. It has been planned to search this current topic which is not encountered in the literature and to develop a scale. It is thought that secondary school students need an instrument evaluating their story writing anxiety. In this sense, the aim of this study is to develop a scale that will evaluate secondary 7th graders' story writing anxiety. 439 students (212 female and 227 male students) participated in the study. As a result of exploratory and confirmatory factor analyses, a valid and reliable evaluation instrument for secondary school students' story writing anxiety was developed. As a result of the research, 5 tier scale with 26 items was formed to evaluate story writing anxiety. Cronbach Alpha value was found to be .853 and total variance explained was 57.827.

Keywords: Story, story writing anxiety, scale, secondary school students.

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1. INTRODUCTION

Stories play a great role in influencing and persuading human-beings. It is no different in education world. Stories are one of the best ways to teach children. Children are influenced by well-structured stories and persuaded to learn the aimed topic. Stories should not be formed with events listed randomly. Since stories need a certain order and discipline, it is primarily required to analyse each part of this story and then acquire a meaningful, consistent and reasonable whole from these parts (Temizkan, 2014). Thus, stories help improve children's imagination and help them comprehend reason-result relationship and produce more practical solutions to problems. Storifying a topic improves students' creativity, provides persistent learning and helps summarize the lesson (Taşkaya, 2017, Ed. A. Akkaya). Stories told by family elders contribute to children's listening skills while asking questions about the stories told contributes to speaking skills and interfamily communication positively. Also, it is likely that this can become a tradition when children tell these stories of their own memories to their own kids or other kids when they grow up. Today, this happens mostly in digital platforms and it is recognized that digital story telling has come into prominence. TED speakers such as Brene Brown and Barış Özcan introduce themselves as story-tellers (WEB1; WEB2). Frequency of search for story-teller concept in recent years is illustrated in Figure 1 below.

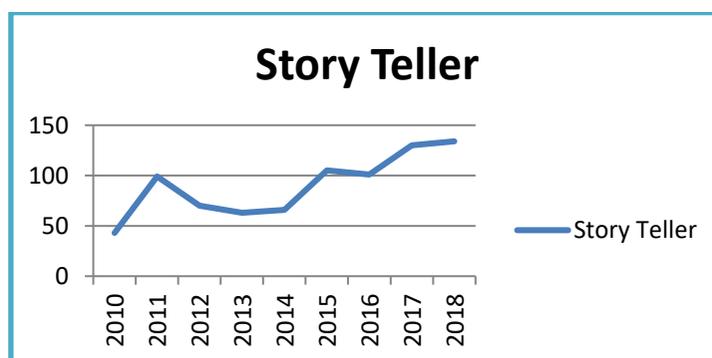


Figure 1. Frequency of search for story teller concept (WEB3)

Figure 1 shows frequency of search for story teller concept between 2010 and 2018 in Turkey. It is seen that search ratio which was below 50 in 2010 went up to 100 in 2011 while it dropped the following year; however, it increased regularly after 2014. Activation in digital platforms have gone up thanks to the presence of television, computer and smart phones in nearly every house today, so-called age of technology. Concept of story-telling stands out as access to the videos in which TED talks and many similar success stories are told have increased in video websites such as Youtube. It is thought that the curiosity about this concept may have enhanced since these people telling their success stories introduce themselves as storyteller.

Traditional stories underlie commercial stories on TVs and digital stories. Digital story is combination of art of traditional story telling and multimedia elements such as pictures, audios and videos (Robin 2006; Alexandar, 2011; Frazel 2010). Traditional story telling is narrating an incident verbally or in writing, which is an article telling real or fictious incidents (TDK, 2011; Doğan, 2005; Akbayır, 2007; Babacan, 2008). Since digital story telling based on traditional story telling impact children's development, motivation and academic success (Kurudayıoğlu and Bal, 2014; Baki 2015; Göçen, 2014; Çıralı, 2014; Demirer, 2013; Kahraman, 2013; Yüksel, 2011), students' anxiety of story writing is a matter of curiosity. Anxiety is a feeling of worry that is manifested due to a worrying thought or generally an intrusive thought, the reason of which is unknown (TDK, 2011). According to Aydın and Zengin (2008), it is an emotional state in which someone feels herself/himself weak in case of a foreseen danger. The reason why anxiety is examined in this study is the relationship between anxiety and learning. If anxiety levels are or high for a person, learning is not efficient. However, healthy and efficient learning occurs in case of existence of mild anxiety (Cüceloğlu, 2003). This study can help determine story writing anxiety levels of students.

In review of the literature, it is found that there are such studies as writing anxiety scale for secondary school students (Karakuş Tayşi and Taşkın, 2018), writing anxiety scale for those who learn Turkish as a foreign language (Şen and Boylu, 2017; Aytan and Tunçel, 2015; İşcan, 2015), attitude scale (Can and Topçuoğlu Ünal, 2017; Akaydın and Kurnaz, 2015), the adaptation to Turkish of the writing attitude scale (Göçer, 2014), writing disposition scale (İşeri and Ünal, 2010), writing self-efficacy scale (Güneş, Kuşdemir and Bulut, 2017; Şengül, 2013), Turkish adaptation of writing self-efficacy scale (Yılmaz Soylu and Akkoyunlu, 2019). No story writing anxiety scale for secondary school students was encountered in the literature.

Digital story telling is based on traditional storytelling, information is presented by being storified in order to make information more attractive because it is easier and faster to access to information thanks to web technologies in the 21st century. Given that, the reason why story writing anxiety is examined in this study is that the effect of all these opportunities on children's story writing anxiety is a matter of curiosity.

Furthermore, growing importance of story today has caused storytelling to be considered as a job of the future (WEB4). Also, the fact that there are three main titles such as expository, narrative, poetic features in the New Turkish Curriculum (2019) shows that story is so significant that it also influences the education world. The reason why secondary 7th graders were focused in this study is the fact that the gains which are "Students are helped to determine a story plot and its elements based on their own daily observation and experience" and "Students are helped to determine time, place, characters and events in the story, and draft what they will tell in the exposition, climax and resolution parts of the story" mentioned under the gain "The student can write a narrative text" are discussed for the students in 5th and 6th grades even though story exists in all grades as a genre and also anxiety for High School Entrance Exam (LGS) is less

in this grade. Moreover, researchers and teachers can evaluate why their students get anxious in both traditional story writing and digital story writing thanks to this study. Thus, teachers can keep anxiety of their students at a certain level, and contribute to development of their story writing skills.

2. METHOD

It is aimed in this study to develop a scale that will evaluate secondary 7th graders' story writing anxiety. To this end, "Story Writing Anxiety Scale" was developed. In this study, the ethics of publication related to scientific article writing was followed and necessary permissions were obtained. Ethics committee permission for this study was obtained from the Ethics Committee of the Rectorate of Sakarya University with the number of E.273 dated 07/01/2019.

Study Group

439 students who are in 7th grade in two state secondary schools in Central District of Kars Province participated in the research for Story Writing Anxiety Scale. 212 participants were female while 227 were male. 300 and above would be appropriate for the sample size (Comrey and Lee, 2009). If the study group is large enough, it is said that the same study group can be randomly divided into two for EFA and CFA (Brown, 2006; DeVellis, 2017). Accordingly, the study group was divided into two for EFA and CFA. Data from 220 students were used for EFA and data from 219 students were used for CFA.

Story Writing Anxiety Scale

Literature review was performed in scope of this study and it was seen that there is writing anxiety scale but no study for story writing anxiety scale exists. Thus, studies on writing anxiety and story writing in the literature were examined. 32 students in the secondary 7th grade in these two schools in Central District of Kars Province were asked the following question: "Does story writing make you anxious? If yes, can you write the reason?". They were asked to write how they feel and think about this in a paragraph. An item pool was formed by combining the literature review and data obtained from students' answers. It was noted that content of each item reflects the relevant construct during the formation of item pool and dual-purpose item constructs were avoided (DeVellis, 2017). A 37-item-pool was formed. Scale was formed in 5-Likert-type and answers were designed as "Totally Disagree: 1, 'Disagree: 2', 'Neither Agree nor Disagree: 3', 'Agree: 4' and 'Totally Agree: 5'".

Procedures

Evaluation of item conformity was obtained by presenting the introduction of the construct studied in general to the experts (DeVellis, 2017). Accordingly, the item pool was reviewed by field experts. The scale was submitted to two field experts of Turkish Education and one Assessment and Evaluation field expert. The experts made the evaluations for each item as appropriate, partly appropriate and inappropriate. In

addition, the experts were requested to write missing parts or their suggestions if any. In the light of the experts' views, 3 items were omitted from the item pool and 10 items were amended. A pilot study with final 34 items was performed after the relevant amendments and elimination.

After the expert view was obtained, studies for construct validity and reliability were initiated. The construct was examined through exploratory factor analysis (EFA) for construct validity and then confirmatory factor analysis (CFA) was implemented in order to confirm this construct. The scale was distributed to 445 students in total; however, 6 students were excluded from the study because they marked just one agreement option. Data from 439 students in total were used. SPSS 20.0 package was used for EFA while SPSS AMOS 23.0 was used for CFA. The study group was divided into two because there was sufficient sample size for EFA and CFA. Data from 220 students were used for EFA and data from 219 students were used for CFA.

3. FINDINGS

Findings regarding exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) are explained below.

Findings on EFA

Exploratory factor analysis was employed for construct validity of Story Writing Anxiety Scale. Exploratory factor analysis discloses whether factors discovered as a result of analysis are similar to constructs of the concept (unobservable implicit variables) that help behaviour to be understood in addition to reducing variables and naming factors (Çokluk, Şekercioğlu & Büyüköztürk, 2012). Therefore, it is examined if indicators collected in sub-factors reflect indicator of conceptual construct thanks to exploratory factor analysis.

In factor analysis, a sample as large as possible was used for adequate sampling size since how much common variance there is shall not be known till data is analysed (Henson & Roberts, 2006; Erkuş, 2016). As many voluntary participants as possible were aimed to be reached in this study. Also, another way to test conformity of data construct for factor analysis is to examine Kaiser-Mayer-Olkin test results. For that reason, KMO test values were considered in this study and the results are illustrated in Table 1.

Table 1.

KMO and Bartlett Test Results of Story Writing Anxiety Scale

| | | |
|-------------------------------------------------|----------------|----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy | | .869 |
| Bartlett Globality Test | X ² | 4662.491 |
| | sd | 325 |
| | p | 0.000 |

KMO returns values between 0 and 1, and KMO values greater than 0.5 are acceptable (Field, 2009). KMO values between 0.5 and 0.7 are mediocre, values between 0.7 and 0.8 are good, values between 0.8 and 0.9 are very good and values greater than 0.9 are great (Field, 2009; Tavşancıl, 2018; Şencan 2005). According to Table 1, the result of KMO test of this scale is .869. It is likely to say that KMO value of this scale is good with regards to the values mentioned above.

Bartlett test results of this scale are also displayed in Table 1. Significance value is evaluated in this test as in other χ^2 tests and if significance value is below 0.05, it is concluded that it is different than R correlation or unit matrix in covariance matrix (Çokluk, Şekercioğlu & Büyüköztürk, 2012). Based on this, it is possible to say that the value found in this study ($\chi^2=4662.491$; $p<.01$) is meaningful. It is seen that these values and data obtained from pilot study are appropriate for factor analysis.

Findings on Scree Plot

Scree plot is an auxiliary graph suggested by Cattell in order to determine the number of factors (Çokluk, Şekercioğlu & Büyüköztürk, 2012). In accordance with scree plot table, explicit factors can be seen and it is decided if it is necessary to decrease factor or not. Scree plot of this scale is presented in Figure 1.

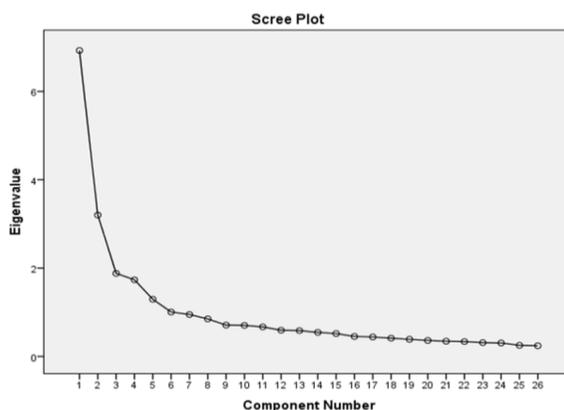


Figure 1. Scree Plot of Story Writing Anxiety Scale

Scree plot of Story Writing Anxiety Scale can be seen in Figure 1. Slopes which are accelerated and rapid decreases are observed in the graph illustrate number of factors. It is recognized the slope sustained after the fifth factor. Therefore, this graph helped to determine the number of factors and number of factors was decreased to five.

Findings on Total Variance Percentage and Number of Factors

Table 2 shows how much percentage of total variance this scale explains and how many factors this construct is composed of through exploratory factor analysis.

Table 2.

Total Variance Percentage and Number of Factors Obtained as a Result of Factor Analysis of Story Writing Anxiety Scale

| Number of Factors | Eigen Value | Percentage | Cumulative Percentage |
|-------------------|-------------|------------|-----------------------|
| Factor 1 | 6.925 | 26.636 | 26.636 |
| Factor 2 | 3.201 | 12.311 | 38.946 |
| Factor 3 | 1.881 | 7.235 | 46.181 |
| Factor 4 | 1.734 | 6.669 | 52.849 |
| Factor 5 | 1.294 | 4.978 | 57.827 |

It is seen that this scale has a five-factor construct explaining 57.827 of total variance as a result of exploratory factor analysis using varimax rotation (Yaşlıoğlu, 2017), which is a vertical rotation technique, in obtaining best possible number of independent factors, and of principal component analysis in Table 2. Eigen values of the factors and variance rate they explain is 6.925 and 26.636% for factor one, 3.201 and 12.311% for factor two, 1.881 and 7.235% for factor three, 1.734 and 6.669% for factor four, 1.294 and 4.978% for factor five, respectively. In factor analysis, factors whose eigen values are one and over one are accepted, and variance the factor explains increase as eigen values go up (Çokluk, Şekercioğlu & Büyüköztürk, 2012). Accordingly, the fact that each factor in this scale has eigen value over one proves that it has acceptable values. For Scherer, Wiebe, Luther and Adams (1988), in multi-factor patterns, it is adequate if the variance explained in social sciences is between 40% and 60% (cited in Tavşancıl, 2018; cited in. Çokluk, Şekercioğlu & Büyüköztürk, 2012). It is clear that total variance value of this scale, which is 57.827, is at an acceptable level.

Factor Loads of Story Writing Anxiety Scale

For Çokluk, Şekercioğlu & Büyüköztürk (2012) if a factor load value of an item is low, this item does not show a powerful relationship with that factor; therefore, factor load values

of Story Writing Anxiety Scale were examined. Factor load values of Story Writing Anxiety Scale are displayed in Table 3.

Table 3.

Factor Load Values of Story Writing Anxiety Scale

| Items | Prejudice | Sharing | Spelling Error | Humiliation | Avoidance of Knowledge |
|-------|-----------|---------|----------------|-------------|------------------------|
| M23 | .771 | | | | |
| M22 | .727 | | | | |
| M18 | .704 | | | | |
| M19 | .690 | | | | |
| M24 | .667 | | | | |
| M20 | .641 | | | | |
| M17 | .627 | | | | |
| M11 | | .817 | | | |
| M10 | | .791 | | | |
| M12 | | .751 | | | |
| M9 | | .728 | | | |
| M8 | | .719 | | | |
| M27 | | | .798 | | |
| M26 | | | .774 | | |
| M25 | | | .715 | | |
| M28 | | | .660 | | |
| M29 | | | .534 | | |
| M4 | | | | .718 | |
| M7 | | | | .707 | |
| M5 | | | | .672 | |
| M3 | | | | .658 | |
| M6 | | | | .638 | |
| M32 | | | | | .822 |

| | |
|-----|------|
| M33 | .804 |
| M31 | .767 |
| M34 | .566 |

In accordance with Table 3, it is seen that load values of items in the first factor are between .771 and .627, load values of items in the second factor are between .817 and .719, load values of items in the third factor are between .798 and .534, load values of items in the fourth factor are between .718 and .638, load values of items in the fifth factor are between .822 and .566. It is found that factor load values are between .534 and .822, and factor load values obtained by cut off value 0.5 are better (Tabachnick and Fidell, 2013; Büyüköztürk, 2014). In accordance with Table 3, items in the first factor (M23, M22, M18, M19, M24, M20 and M17) are named as “prejudice”, items in the second factor (M11, M10, M12, M9 and M8) are named as “sharing”, items in the third factor (M27, M26, M25, M28 and M29) are named as “spelling error”, items in the fourth factor (M4, M7, M5, M3 and M6) are named as “humiliation”, items in the fifth factor (M32, M33, M31 and M34) are named as “avoidance of knowledge”. Two Turkish Education field experts were asked for their opinion during naming the factors. When extracting cyclical items and 8 items which do not have sufficient acceptable factor load values in Story Writing Anxiety Scale, the scale was finally formed with 26 items and five factors.

Findings on CFA

Findings on confirmatory factor analysis (CFA) of the study are shown in Table 4 and Figure 2.

Table 4.

Confirmatory Factor Analysis Results of Story Writing Anxiety Scale

| | Values | Fix Index |
|-------------------|---------|-----------|
| χ^2 | 622.526 | - |
| Degree of Freedom | 286 | - |
| p | 0.000 | - |
| χ^2/df | 2.177 | <5 |
| NNFI/TLI | 0.914 | >.90 |
| CFI | 0.924 | >.90 |
| RMSEA | 0.052 | <.08 |
| SRMR | 0.052 | <.10 |

In accordance with Table 4, fit indexes obtained from CFA performed for construct validity of the scale were examined and chi-square value ($\chi^2=622.526$ $sd=286$, $p=0.00$) was found to be statistically meaningful. When NNFI/TLI and CFI values are over .95, it means excellent fit, when they are over .90, it means good fit (İlhan and Çetin, 2014). The scale has TLI=.914 and CFI=.924, which means fit indexes are good. When RMSEA is below .05, it means excellent fit, when it is below .08, it means good fit (İlhan and Çetin, 2014; Jöreskog and Sörbom,1993 cited in Çokluk, Şekercioglu and Büyüköztürk, 2012). This scale has RMSEA=.052, which means good fit index. For SRMR value, .05 means excellent fit, and .10 value means acceptable fit (İlhan and Çetin, 2014; Schermelleh-Engel and Moosbrugger, 2003). This scale has SRMR=.052, which means good fit index.

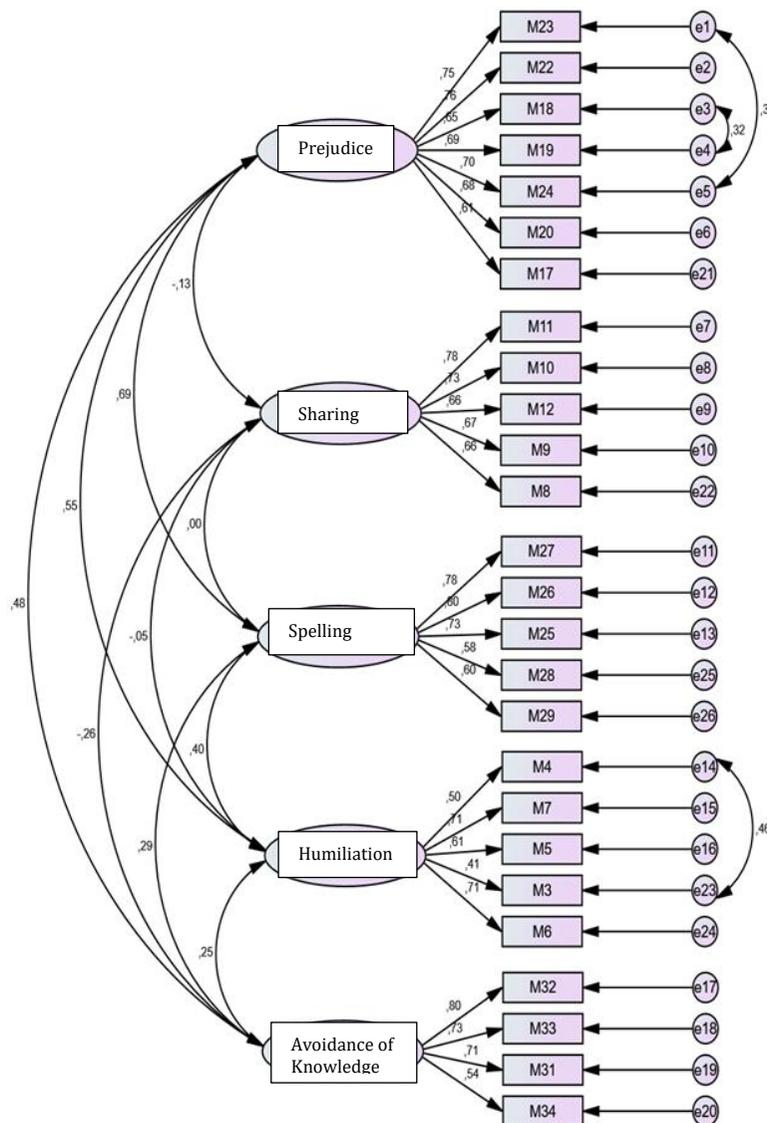


Figure 2. Findings on Confirmatory Factor Analysis

Findings on Reliability of Story Writing Anxiety Scale

Reliability value points out the degree of an evaluation instrument yields the same result in repeated measurements (Baş, 2010). Cronbach Alpha value was considered in order to prove reliability of Story Writing Anxiety Scale. For Tavakol and Dennick (2011), when Cronbach Alfa values are between .70 and .95, these values are considered to be acceptable. For DeVellis (2017), if the value is below .60, it is unacceptable; if it is between .60 and .65, it is undesirable; if it is between .65 and .70, it is minimally acceptable, if it is between .70 and .80, it is respectable, if it is between .80 and .90, it is very good and if it is over .90, the researcher should consider shortening the scale. Table 5 displays Cronbach Alpha values of the scale in general and its subfactors.

Table 5.

Cronbach Alpha Values of Story Writing Anxiety Scale and its Subfactors

| Subfactors | Cronbach alpha value |
|------------------------|----------------------|
| Prejudice | .870 |
| Sharing | .826 |
| Spelling error | .825 |
| Humiliation | .750 |
| Avoidance of Knowledge | .783 |
| General | .853 |

In accordance with Table 5, it is possible to say that Cronbach Alpha value of the final scale is .853, which means very good, after the exploratory factor analysis. As for Cronbach Alpha values of subfactors, prejudice factor is .870, sharing factor is .826, spelling error factor is .825, respectively, which are very good while humiliation factor is .750 and avoidance of knowledge is .783, which are good and acceptable.

4. RESULTS AND SUGGESTIONS

As a result of the research, a 5-Likert-type scale was formed with 5 dimensions measuring story writing anxiety and including 26 items. Each subfactor is named in accordance with the characteristics of the items they are covered in (Karasar, 2015). After taking the view of two Turkish Education field experts, subfactors of this scale was named as follows: Prejudice, sharing, spelling error, humiliation and avoidance of knowledge. Total variance explained with 26 items and 5-subfactor-construct of "Story Writing Anxiety Scale" is 57.827. The variance explained by construct of the scale was found sufficient to explicate the characteristics measured (Tavşancıl, 2018; Büyüköztürk, 2014)). It is a significant

criterion that variance explained exceeds 50% of the total variance since if factor construct formed explains less than the half of the variance, it is not likely to say it is representative (Yaşlıoğlu, 2017).

In this study, factor load cut-off value is 0.5 and factor load values of the study are between .534 and .822. It is found that the values obtained are good and correspond with the literature (Tabachnick and Fidell, 2013; Büyüköztürk, 2014; Yaşlıoğlu, 2017; Şencan, 2005). Upon examination of fit indexes of scale construct, it is found to have fit indexes in these values: $\chi^2/df= 2.177$, TLI= 0.914, CFI= 0.924, RMSEA= 0.052 and SRMR= 0.052. Fit indexes found correspond with the literature (Byrne, 1998; İlhan and Çetin, 2014; Schermelleh-Engel and Moosbrugger, 2003). For reliability of the scale, Cronbach Alpha value of the whole 26 items was found .853 for internal consistency. This value is acceptable for Tavakol and Dennick (2011), which proves internal consistency of the scale is sufficient.

It is also possible to make further research on what kind of a construct this story writing anxiety scale to be obtained as a result of this study will put forward in primary school, other sections of the secondary school, high school and university. Reasons of regional anxiety can be measured with a country-wide comparison. Relationship between the data obtained from the scale developed and authentic variables can be examined. Since this study is limited to secondary 7th graders, further studies can be performed with different study groups and in private schools. Since it is considered the scale in this study may be beneficial to especially Turkish teachers, some methods and techniques that will keep students' story writing anxiety at a certain level can be determined in accordance with the lesson methodology and techniques.

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