

**THE STUDY OF THE VALIDITY AND  
RELIABILITY OF THE SCALE FOR SECONDARY  
EDUCATION STUDENTS' ATTITUDE TOWARDS  
READING\***

**Ortaöğretim Öğrencilerinin Okumaya Yönelik Tutumlarını**

**Belirleme Ölçeği Geçerlik ve Güvenirlik Çalışması**

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**Abstract**

There are numerous scales in foreign literature designed to measure attitude towards reading, however, as these scales pertain to those cultures, it is difficult to directly apply them in Turkish cultural and educational surroundings. On the other hand, there are attitude scales in Turkish literature, developed to determine preschool education students' attitude towards reading, primary education students' attitude towards reading, higher education students' attitude towards reading, but there are no such scales developed to determine secondary education students' attitude towards reading. However, "as attitudes shape in adolescence, between ages 12 – 20, and they settle between ages 20 – 30" (Tavşancıl, 2006, p.80), there is a need for a valid and reliable attitude scale for individuals aged between 14 – 18. The current study is a product of an effort given to develop a scale enabling to define the secondary education students' attitude towards reading. In conclusion, "The Scale for Secondary Education Students'Attitude Towards Reading" can be used as a valid and reliable attitude scale on secondary education students' attitude towards reading. Data collected through this scale will reveal the secondary education students' attitude towards reading and will help determine the reliability of any step taken towards developing secondary education students' reading skills.

**Keywords:** Secondary education, reading attitude, reading attitude scale, validity, reliability.

**Özet**

Yabancı alanyazında okumaya yönelik tutumu ölçmeye yönelik pek çok ölçek bulunmasına rağmen farklı kültürlerle ait ölçme araçları olduğu için bunların Türk kültürüne ve eğitim sistemine doğrudan doğruya uyarlanması güçtür. Bununla birlikte Türkçe kaynaklarda okulöncesi, ilköğretim ve üniversite çağındaki öğrencilerin okumaya yönelik tutumlarını ölçmeye yönelik ölçekler geliştirildiği gözlenmiştir. Ancak alanyazında ortaöğretim düzeyindeki öğrencilerin okuma tutumlarını ölçmek amacıyla geliştirilmiş bir ölçek bulunmamaktadır. Bununla birlikte bireylerin tutumlarının 12-20 yaşlarında şekillendiği, 20-30 yaşları arasında kemikleştiği belirlenmiştir(Tavşancıl, 2006, s.80). Bu yüzden 14-18 yaşlarındaki ortaöğretim öğrencilerinin okuma tutumları geçerli ve güvenilir bir ölçekle ölçülmelidir. Bu çalışma, ortaöğretim öğrencilerinin okumaya yönelik tutumlarını geçerli ve güvenilir bir araçla ölçmek için kullanılacak bir ölçek geliştirmek amacıyla yapılmıştır. Sonuç olarak Ortaöğretim Öğrencilerinin Okumaya Yönelik Tutumunu Belirleme Ölçeği geçerli ve güvenilir bir ölçek olarak okumaya yönelik tutumların belirlenmesinde kullanılabilir. Bu ölçeğin kullanımıyla elde edilecek veriler, ortaöğretimde kullanılan okuma materyal ve yöntemlerinin etkiliği hususunda eğitimcilere bilgi sağlayacaktır. Bu sayede öğrencilerin okuma becerileri, okuma zevk ve alışkanlıkları da geliştirilebilecektir.

**Anahtar Sözcükler:** Ortaöğretim, okuma tutumu, okuma tutumu ölçeği, geçerlik, güvenirlilik.

\*In developing this scale, some of the data from Assistant Professor Dr. Mustafa Türkyılmaz's doctoral dissertation "The Effects of Juvenile Fictions on Reading Skill and the Analysis of These Novels In Terms Of Value Transmission" have been used. The above mentioned dissertation has been written under Prof. Dr. Yaşar Aydemir's consultancy.

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## 1. Introduction

Reading is a means of communication. It is a realm of freedom that develops the human society. Human beings elaborate on existing knowledge and produce new knowledge using this realm. Moreover, as human beings gain new information through reading, they transfer this information, the experience and observations to others via writing. Reading, and understanding the message that is trying to be conveyed, is of great importance. So that Manguel (2007), says he has first tasted the dessert jelly, in a book. He says he was disappointed when he has tasted the dessert for real. "Until then, jelly was a mysterious food that I have never seen but I have been introduced to in Enid Blyton's books. When I eventually got to taste the dessert for real, the taste was nowhere close to the taste I would feel when I would read about it" (p. 23). This is the power of reading. Just like Yıldız Kenter's answer to the question "What is reading"? "Reading is, to travel to a world; it is creating a new world. It is being with whoever is in this world, and doing this with one's freewill. Reading is, freedom" (2004, p. 26). Reading is important. It is important to understand the message trying to be conveyed by that particular text. The reading act is important not only for gaining information; it is also important to ensure one's active participation in the process of a democratic society, as well as to ensure that an individual fulfills his duties and responsibilities. Reading, in addition for helping the individual gain information, helps keep the brain cells active through efficient cognitive processes (Karaçay, 2011).

In this regard, it is necessary to have the individuals develop a positive attitude towards reading in order for reading to be a habit. The selection of reading materials, as well as determining the positive and negative reactions the reader develops towards these reading materials, is important. Today, the list "100 Essential Books to Read", classics, and whether or not these so called books develop a positive attitude towards reading is widely discussed amongst people who are in the education field. It is necessary to develop attitude scales towards reading for different education levels, in order to be able to provide valid and reliable data to answer any possible questions regarding these discussions.

The word "attitude" is a Latin origin word. Its Latin origin is "animus". It means "ready to act". The scientific study of the word dates back in 19th century (Arkonac, 2001). Allport (1967) is among the first who has emphasized the concept "attitude" and the need for it to be measured. When one looks at his definition for the word, it is possible to see the effects of the word's definition in the Latin language, which is "ready to act". Attitude; "is gained as a result of living and experience. It is an affective and cognitive state of readiness that has a directing or dynamic effect on the individual's behavior towards all objects and situations (Allport, 1967, p. 3). In another definition of attitude by Crano and Prislin (2006, p. 347) the way an attitude leads to a behavior also takes place. "Attitudes reflect the knowledge one gains after interaction with an object or a fact. Attitudes are value judgments which are a summary of a combination of cognitive and affective reactions of an individual. These value judgments differ in strength according to consistency, resistance and according to the fact whether or not the attitude turns into behavior". Fishbein and Ajzen (1975, p. 6) define attitude as a learned, consistent positive or negative reaction towards an object.

Attitudes are formed by three components (Oskamp&Schultz, 2005, p. 9; Tavşancıl, 2006, p. 72; McKenna, Kear & Ellsworth, 1995, p. 937; Bohner&Wanke, 2002, p. 5; Brown, 2006, p. 49; İncelioğlu, 2004, p. 26-31). They are affective, behavioral and cognitive components. Reading is entertaining, and it is an example for an affective

component. I read whenever I can, is an example for behavioral component. Reading develops vocabulary, is an example for cognitive component. On the other hand, the definition for the concept “attitude towards reading” is defined as “one’s beliefs and objectives on reading” (Guthrie & Wigfield, 1999, p. 199); “the sensory system of the student that leads the student to be a reader or to react to reading” (Alexander & Filler, 1976, p.1). It is possible to observe the correlation between attitude towards reading and reading success, between gender and attitude towards reading, between grade level, age and attitude towards reading, in the research held on this area (Wallbrown, Levine & Engin, 1981; McKenna, Kear & Ellsworth, 1995; Shannon, 1980; Russ, 1989). Now that the correlation between students’ attitude towards reading and reading success has been proved, educators find it necessary to measure students’ attitude towards reading with appropriate techniques.

To this respect, it is necessary to measure attitude towards reading with an appropriate scale and it is necessary to plan educational activities around the level of attitude measured. On the other hand, there are specific attitude scales in Turkish body of literature, developed to measure preschool education students’ attitude towards reading, primary education school students’ attitude towards reading, higher education students’ attitude towards reading, but there are no such scales developed to measure secondary education students’ attitude towards reading.

In his study “The Validity and Reliability of an Attitude Scale Pertaining the Reading Habit”, Gömleksiz (2004), has aimed to develop a valid and reliable scale that measures college students’ opinions and attitudes towards reading. In achieving his goal, he has first developed “An Attitude Scale Pertaining the Reading Habit”, a five point Likert scale that comprises 67 items. The data has been collected from 197 college students who study in Firat University, and has been evaluated through exploratory factor analysis, which has led to a 21 positive, 6 negative six dimensional scales.

In Yücel’s (2005) research “The Validity and Reliability of the Scale for Preschool Children’s Attitude towards Reading”, the sample comprises 323 preschool students aged 4 and 5, who are registered in eight ministerial preschools registered to the Ministry of National Education. Thus, the scale’s Cronbach’s Alpha Reliability Coefficient is  $r = .8471$ , two Yan Test Reliability is  $r = .8291$ . A Principal Components Analysis has been run, pertaining the validity aspect. The scale has been observed as a one dimension scale.

Ünal, on the other hand, in order to measure fifth grade students’ attitude, forms a 60 items pool based on scales designed to determine their attitude towards Turkish Language and Science lessons. The numbers of items diminish to 43 with expert opinion. The draft form is applied on a group of 76 students, twice. Taking correlation values into consideration, the numbers of items are diminished through retesting method. Eventually a scale of 25 items is created with a reliability coefficient of .900.

Sallabaş (2008), in his research titled “The Relevance between Primary Education 8<sup>th</sup> Grade Students ‘Attitude towards Reading and Comprehending What They Read” has used 20 items “A Reading Attitude Scale” that he has developed himself. He has defined the scale’s reliability coefficient as  $\alpha = 0,86$ . The validity of the scale has been confirmed by exploratory factor analysis. Factor analysis results are: 20 items’ factor load value is between 0.77 and 0.40, and each factor’s explained common factor variance quantity is between 0.71 and 0.31. A one dimensional reading attitude scale has been developed.

Özbay and Uyar (2009) have developed a scale to measure 5<sup>th</sup>, 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> Grade students’ attitude towards reading. A data received from 367 students have been used in order to determine the factors of the scale and to support the reliability of the scale. The

study, in general, comprises 816 students. The conclusion is a scale with a ,930 reliability coefficient.

Susar Kırmızı (2012), in his research titled "An Attitude Scale Pertaining the Reading Habits of Teacher Candidates" has collected data from 784 Pamukkale University, Education Faculty Students. While developing the data collection tool, an items pool has been formed with essay questions and field scanning; the items have been presented for expert opinion; a trial study has been realized on the sample; and the scale has been finalized following reliability and validity analysis.

As is seen, although there are scales developed to measure preschool education students' attitude towards reading, primary education students' attitude towards reading and college students' attitude towards reading, there are no such scales to measure secondary education students' attitude towards reading. On the other hand, "as attitudes shape in adolescence, between ages 12 – 20, and they settle between ages 20 – 30" (Tavşancıl, 2006, p.80), there is a need for a valid and reliable attitude scale for individuals aged between 14 – 18.

Although there are many scales in order to measure students' attitude towards reading in most education levels, there is no scale to measure secondary education students' attitude towards reading, and because the secondary education students' age is critical in the development of attitude, there is a need to produce such a scale, to measure secondary education students' attitude towards reading. Taking this need into consideration, this paper is a product of an effort given to develop a scale enabling to define the secondary education students' attitudes toward reading. Our aim is to develop a valid and reliable scale that measures secondary education students' attitude towards reading.

## **2. Method**

### **2. 1. Research Design**

This study aims to produce a valuable and reliable reading attitude scale for secondary education students. It was designed with general descriptive models.

### **2. 2. Population and Sample**

The research findings are a result of various stages applied on 683 secondary education students in total. At first, 189 students were asked to write about their feelings on reading. An items pool has been gathered according to these essays. Afterwards, as a pilot study, taking this items pool as the resource, a questionnaire has been designed and this questionnaire has been applied on 128 students. Following this, the questionnaire has been mainly applied on 376 secondary education students. There are 8201 secondary education students in Kirsehir area. In regards to sampling model, it can be said that the research has been realized on an appropriate sample (See, Balcı, 2009, p.102).

### **2. 3. Instrument and Procedure**

When developing a "Reading Attitude Scale" (RAS), it is necessary to include a great number of items and these items need to be items that express sincere opinions. Keeping this in mind, a group is asked to express their thoughts and feelings towards reading (Oskamp & Schultz, 2005). In this context, we have asked 189 secondary education students, 109 boys and 80 girls, to write an essay elaborating on their thoughts and

feelings towards reading. And, 81 of these students were 10<sup>th</sup> grade students, 118 of them were 11<sup>th</sup> grade students.

After the writing assignment given to these 189 students, we have decided on 79 attitude items. These items have been presented to three assessment and evaluation specialists, and four Teaching Turkish Language specialists for their opinion. Following these specialists' guidance, 14 items were removed from the scale. 3 of these removed items were items that were found to be indirectly related to reading attitude, and 11 of these items were removed from the scale as they were items revealing a general attitude towards reading rather than expressing the individual's personal opinion. In addition, 4 items were redefined. Following these changes, the scale has been ready for the pilot scheme once the instructions were written.

The pilot sample has been applied on 128 students educating in Mehmet Âkif Ersoy High School in Kırşehir city center. Out of these 128 students, 66 of them were 9<sup>th</sup> grade students, 46 of them were 10<sup>th</sup> grade students, 16 of them were 11<sup>th</sup> grade students. Gender breakdown was: 74 girls, 54 boys. The students have worked on the attitude reading scale during a sixty minute lesson.

Data achieved from this scale has been processed with SPSS 15. An exploratory factor analysis have been made on the data, and following this analysis, the factor load was analyzed with KMO (0,720) and Barlett (5952,355) test values, items with a factor load of below 0,30, a scale of 35 items have been determined to be used on the final application. Out of these 35 items, 12 of them convey negative, 23 of them convey positive attitude expressions.

#### 2. 4. Data Analyses

Validity and reliability analysis of the reading attitude scale was done by considering the data gathered at the last application. SPSS 15 and Lisrel 8.80 were used for the analysis.

The validity and reliability analysis of the scale are as follows:

- A. Exploratory factor analysis
- B. T- test which is formed by the total test points and applied by considering the significance of the difference between the %27 of low group and % 27 high groups item average points
- C. Determining the reliability of the test items using items' total correlations
- D. Determining on the test's reliability with Cronbach's Alpha analysis
- E. Testing the neutrality level
- F. First level and second level confirmatory factor analysis

This is a five point Likert scale. In order to define the students' attitude towards reading, there are five different options per item.

In the analysis and the interpretation of the data acquired via reading attitude scale, average range for each item and factor should be calculated with the following formula:

$$\text{Aritmethiemean} = \frac{\text{Numberofspace}}{\text{Numberofoption}} \frac{4}{5}$$

### 3. Findings

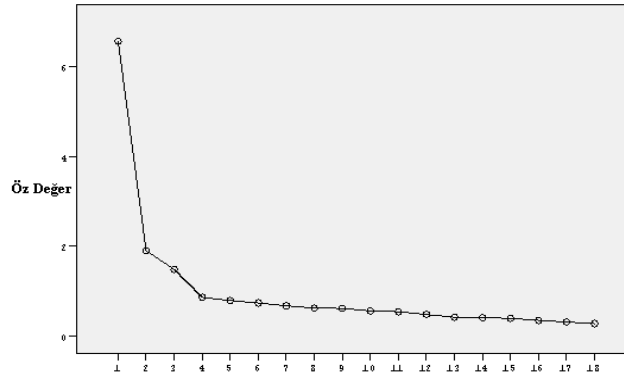
The findings related to the validity and reliability of the scale to measure secondary education students' attitude towards reading is as follows:

#### 3. 1. Reading Attitude Scale Validity Findings

In order to determine whether or not it is possible to carry out a factor analysis on data acquired from 376 students using a 35 Items Reading Attitude Scale, first KMO and Bartlett Test Analysis have been made. The achieved results are: KMO test value is 0,943 and Bartlett test chi square value is 9465, 441 (sd= 1326, p= .000). A value above 0,90 is accepted as a perfect level data to carry out a factor analysis (Eroğlu, 2009, p.322).

In addition, as the result of the Bartlett test, "Correlation matrix is unit matrix". Zero hypotheses is rejected at .05 significance level (Eroğlu, 2006, p.322). These outcomes testify the appropriateness of the data acquired for a factor analysis, so a factor analysis has been carried out using Principal Component method. It has been observed that, the 35 items (variables) which have been included in the analysis are grouped under 10 factors whose eigenvalue is greater than 1. The first factor variance is %31,563. In social sciences, it is necessary that factors in scales need to correspond to at least the %40 of the total variance (Büyüköztürk: 2008, p. 125), therefore it is necessary to analyze the following eigenvalue graphic.

**Figure 1.**Eigenvalue graph of items (scree plot)



In Scree Plot, after the first three accelerated falls, it is seen that there is a rectification in the acceleration. This can be interpreted as the scale being 3 dimensional.

To be able to get significant factors, the factor weight in 350 and above numbers of observations need to be 0.30 and above. A weight of 0.50 and above is considered a pretty good level of weight (Eroğlu, 2009, p.330; Büyüköztürk, 2008:, p.124). In addition to this, there needs to be at least a 0.100 difference between an item's factor weight and another item's load value (Büyüköztürk, 2008, p.125).

Taking what is necessary to select an item into consideration; rotating process is realized through varimax technique. Here the ones that are closer to the items' value 1 have been collected together.

Singled out items with an above 0.45 factor load have been removed from the scale. Moreover, it has been observed that, items excluding the initial three factors are

theoretically not grouped together meaningfully; therefore it has been decided to remove these items as well.

After the removal of these items following the rotation, again a factor analysis has been made. After this factor analysis, a three factor structure has been acquired with an eigenvalue above 1 and a structure that explains the %55.259 of the total variance. It has been determined that 8 items are under the first factor, 5 items are under the second factor, 5 items are under the third factor. Table 1 demonstrates the pattern matrix.

**Table 1.** Factor load values belonging to items in attitudes toward reading scale

	LOVE	HATRED	BENEFIT
15. Reading is my hobby.	,735		
2. Reading is something that I can't do without.	,729		
13. Whenever I feel bad, I read.	,726		
11. I certainly read before going to bed.	,697		
5. I create time to read.	,684		
18. I finish the book I read at a short period of time.	,651		
10. Reading for me, is a necessity.	,638		
8. I like reading.	,566		
9. I cannot comprehend what I read.*		,720	
7. I read only as a homework assignment.		,716	
4. When I read, I get depressed.*		,694	
16. I have nothing to do with books.*		,643	
12. I do not like extracurricular reading.*		,636	
14. Reading makes it easier for me to do essay tests.			,732
1. Reading helps me get a different perspective.			,684
3. Reading makes it easier for me to understand others.			,684
17. Reading helps me easily understand the content of the school subjects.			,682
6. Reading teaches me about the social responsibilities.			,671
	<b>1<sup>st</sup> Factor</b>	<b>2<sup>nd</sup> Factor</b>	<b>3<sup>rd</sup> Factor</b>

\*Negative Items

Items' factor load values range between 0.566 and 0.735. The relation between the items (model) has been confirmed through the application of confirmatory factor analysis in addition to the exploratory factor analysis.

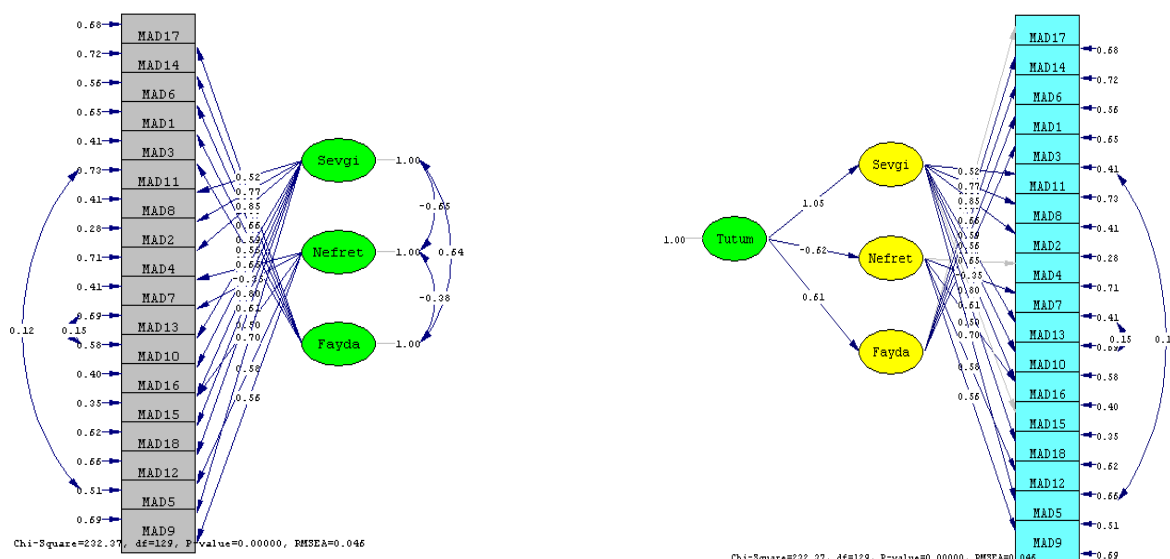
### 3. 2. Reading Attitude Scale Confirmatory Factor Analysis Findings

"Confirmatory Factor Analysis is an extension of Exploratory Factor Analysis. Confirmatory factor analysis is a structural equity model which deals with the relationship between measure models of latent variables and observed measurements" (Yılmaz&Çelik, 2009, p. 53; Raykov&Marcoulides, 2006, p. 4). Each factor is explained

with its correlational relevancy with the observed variables (items). Therefore, each factor is explained with its possible connection with the items.

In the first level confirmatory factor analysis of Reading Attitude Scale, a sample, which shows that three latent variables can reveal 18 variables, has been tested. These factors were revealed through exploratory factor analysis: 1) Love of reading, 2) Negative attitude towards reading (hatred), 3) Benefits of reading. With the second level confirmatory factor analysis, it has been tested whether or not "attitude" can be revealed through these three factors.

**Figure 2.** Standardized Solution Results of the First and Second Level Confirmatory Factor Analysis of Reading Attitude Scale.



In the diagram, the variables' t values have been scanned and we have not come across any red color value. This proves that the relation between variables and latent variables are at a 0.05 significance level (Şimşek, 2007, p.86).

In the confirmatory factor analysis in order to have an appropriate structure, we have taken into account the RMSEA (Root Mean Square Error of Approximation), SRMR (Standardized Root Mean Square Residual), GFI (Goodness of Fit Index), AGFI (Adjusted Goodness of Fit Index), CFI (Comparative Fit Index), NFI (Normed Fit Index) values. The  $\chi^2$  value which changes according to the size of the sample is defined as **232,37** and degree of freedom (**df**) is determined as **129**. As for  $\chi^2 / df$ , it is found **1,80**. **RMSEA** is **0,046** and **SRMR** is **0,053**. Moreover, in the case of the appropriateness of the model, **GFI** is determined as **0,92**; **AGFI** value is defined as **0,90**. **NFI** value is defined as **0,96**; CFI value is found as **0,98**. The corrective index have been examined, it has been found necessary to relate the 16<sup>th</sup> item that takes place in the indifference towards reading (hatred) factor in the exploratory factor analysis, with the love of reading. Also, following



the corrective index, some of the items that take place in the love of reading factor, the 13. – 10. items' and 11. – 5. items' error variance have been correlated.

### 3. 3. Reading Attitude Scale Item Analysis Findings

Once the scale items have been prepared, an item analysis have been made based on "internal consistency criterion", which is an item analysis method used for attitude scales. Using this method, we have analyzed each item, whether or not each item have a classificatory characteristic for bottom and top groups (%27) (Tezbaşaran, 1997, pp. 31-36; Erkuş, 2003, pp. 135-138). A bidirectional t-test have been run for each item in independent groups, their t-statistics values have been calculated. Item analysis results are shown in Table 2.

**Table 2.** Independent t- test results between top 27% group and bottom 27% group

Item	t	Item	t
1	7,744	10	14,572
2	22,498	11	10,173
3	11,420	12	11,283
4	9,233	13	11,855
5	15,390	14	6,339
6	10,857	15	19,946
7	14,374	16	20,753
8	17,908	17	6,731
9	9,908	18	11,630

df: 202; \*:p<0,001

Conducted t- test results show that all of the items taking place in the scale are significant (p< ,001), meaning, all items, regarding the attitudes towards reading, can separate the ones having positive attitude towards reading from the ones not having the positive attitude towards reading at an acceptable level.

**Table 3.** Reading attitude scale item analysis results

Item Number	Item Correlation	Item Number	Item Correlation
17	502**	7	711**
14	466**	13	715**
6	648**	10	790**
1	548**	16	836**
3	708**	15	857**
11	655**	18	706**
8	833**	12	639**
2	881**	5	803**
4	510**	9	540**

N=204, n<sub>low</sub>=n<sub>high</sub>=102. \*\*=p< ,001

Item total correlation coefficients are classified as follows: For the coefficient  $r \geq 0.40$ , it is a really good item; for the item having  $0.30 \leq r \leq 0.39$  coefficient, it is a good one; the item having  $0.20 \leq r \leq 0.29$  coefficient should be used if it is considered necessary or after it is rearranged and the item having  $r \leq 0.19$  coefficient shouldn't be used in the test. In this regard, it can be said that the correlation between the items and the sum is at a pretty good level.

**3. 4. Reading Attitude Scale Reliability Findings**

In order to define the reliability value of the Reading Attitude Scale, reliability test has been made. The Cronbach's Alpha value of the scale is defined as 0,892. "If the scale has  $0,80 \leq \alpha < 1,00$  value, it is a highly reliable scale" (Kayış, 2009, p. 405). Based on this, it can be said that the 18 items Reading Attitude Scale is highly reliable. As for the reliability value of each factor; love dimension is defined as 0,890, hatred dimension as 0,773 and benefit factor as 0,767.

**3. 5. Reading Attitude Scale Objectivity Level**

Objectivity is one of the evidences of assessment instrument's reliability. The assessment instrument's objectivity is determined through the calculation of the reliability coefficient of measurements of the bottom groups chosen from the study group (Tekin, 1996; Kayış, 2009). In this respect, whether or not the Reading Attitude Scale is objective in term of measurements has been determined by calculating the Cronbach's Alpha reliability coefficients, independent from the grade level and gender variables of the students in the study group. The findings are summarized in Table 4.

**Table 4.** The level of the objectivity of reading attitude scale according to grade level and gender

Factors	Grade Level				Gender	
	9	10	11	12	Girl	Boy
Love	,905	,889	,911	,861	,890	,871
Hatred	,752	,674	,710	,760	,728	,652
Benefit	,659	,814	,623	,751	,732	,792
General	,895	,900	,889	,874	,890	,876

As seen in Table 4, the Cronbach's Alpha reliability coefficients of the Reading Attitude Scale independent from the grade level of the students in the study group are between 0.623 and 0.911. And Cronbach's Alpha reliability coefficients of the Reading Attitude Scale independent from the gender of the students in the study group are between 0.652 and 0.890. Cronbach's Alpha reliability values above 0.60 are considered to be highly reliable (Kayış, 2009, p. 405). Kline (1999) notes that although the generally accepted value of .8 is appropriate for cognitive tests such as intelligence tests, for ability tests a cut-off point of .7 is more suitable. He goes on saying, when dealing with psychological constructs, values below even .7 can, realistically, be expected because of the diversity of the constructs being measured. However, Cortina (1993) notes that such general guidelines need to be used with caution because the value of  $\alpha$  depends on the number of items on the scale. You'll notice that the top half of the equation for  $\alpha$  includes the number of items squared. Therefore, as the number of items on the scale increases,  $\alpha$  will increase. According to Cortina(1993) it can be said the scale's some of  $\alpha$  values are low, because there are just 18 items in Reading Attitude Scale.

According to these figures, we can say that we can carry out objective measurements with the Reading Attitude Scale in various bottom groups of the study group, both with the scale's factors and with the scale in general; therefore the scale is a reliable scale.

**4. Conclusion and Discussion**

In this study, a scale is developed in order to determine the secondary education students' attitudes towards reading. The achieved results are as follows: Validity of the scale is analyzed by calculating (1) exploratory factor analysis, (2) confirmatory factor analysis, (3) item-test correlation, and (4) item distinctiveness power. Following the exploratory factor analysis, KMO test result is 0.943, Bartlett test chi square value is 9465.441 (sd=1326, p=.000). KMO value is above 0.90, which can be interpreted as the data being at a great level for factor analysis (Eroğlu, 2009, p. 322). Items' factor loads range between 0.566 and 0.735. Variance quantity explanation is %36 for love factor, %10 for hatred factor, %8 for benefit factor and %55 for the general RAS.

Items' factor loads are above 0.30 (which should preferably be bigger than 0.45), and stated variance quantity is %40. Therefore, the scale has construct validity (Büyüköztürk, 2008; Eroğlu, 2009; Balcı, 2009; Çokluk, Şekercioğlu & Büyüköztürk, 2010).

When scanned through the literature, one cannot come across with confirmatory factor analysis carried out by Gömleksiz (2004), Yücel (2005), Ünal (2006), Sallabaş (2008) and Susar Kırmızı (2012). However, we have carried out the confirmatory factor analysis and it is seen that the model convenience indicators have the stated values. Moreover, *t* values of the variables are examined in the diagram and we have not come across any value that is presented in red.

This case shows that there is a significant relationship, at a level of 0,05, between the variables and implicit variables (Şimşek, 2007, p. 86). The  $\chi^2$  value which changes according to the size of the sample is defined as 232,37 and degree of freedom (df) is determined as 129. As for  $\chi^2 / df$ , it is found 1,80. For this value, it can be said that it means a reasonable fit (Kline, 2005, p. 137 cited from Bollen, 1989). If it is below 0,05, it means good fit index RMSEA (Browne & Cudeck, 1993, p. 144) is 0,046 and if it is below 0,10, it means favourable (Kline, 2005, p. 141) SRMR is 0,053. If the RMSEA and SRMR values are zero or closer to zero, it means that the model is great (Brown, 2006, p. 84, Byrne, 2010, p. 80). Moreover, in the case of the appropriateness of the model, GFI (Kline, 2005, p. 145) value which is required to be above 0,90 is determined as 0,92; AGFI value is defined as 0,90. In the model's fit case, GFI and AGFI values can have a value between 0 and 1; they should be closer to 1 and they can't have negative values (Jöreskog&Sörbom, 1993, p. 123; Raykov&Marcoulides, 2006, p. 43). According to Raykov and Marcoulides (2006, p. 44), as AGFI and GFI values, NFI value which should be between 0 and 1 but closer to 1 (Kline, 2005: 144) is defined as 0,96; CFI value which should be between 0 and 1 but closer to 1 (Raykov&Marcoulides, 2006, p. 44; Brown, 2006, p. 85; Byrne, 2010, p. 78) is found as 0,98. With the obtained indicators, it can be said that it is an acceptable model. Those values indicate that the model which is put forth with exploratory factor analysis relating to RAS(OTÖ) is confirmed with first and second level corrective factor analysis (Yılmaz&Çelik, 2009; Kline, 2005; Çokluk, Şekercioğlu&Büyüköztürk, 2010).

On the other hand; at the end of the examination of the calculated item total correlations and distinctiveness feature, it is defined that RAS has validity feature in terms of both its item and factors, and the general (Balcı, 2009; Tekin, 1996; Büyüköztürk, 2008). Conducted *t*- test results show that all of the items taking place in the scale are significant ( $p < ,001$ ). Namely, all items can differentiate the ones having positive attitude towards reading from the ones not having the positive attitude at an acceptable level (Tezbaşaran, 1997, pp. 31-36; Erkuş, 2003, pp. 135-138). Item total correlation coefficients are classified. For the coefficient  $r \geq 0.40$ , it is a really good item; for the item having  $0.30 \leq r \leq 0.39$  coefficient, it is a good one; the item having  $0.20 \leq r \leq 0.29$  coefficient should be used if it is considered necessary or after it is rearranged and the item having  $r \leq 0.19$  coefficient shouldn't be used in the test (Sungur, 2009, p. 116). In

this regard, it can be said that the correlation between the items and the sum is at a pretty good level.

At the end of the reliability analysis of RAS(OTÖ), as internal consistency coefficient of factors, Cronbach's Alpha value is 0,890 for love factor; 0,773 for hatred factor, 0,767 for benefit factor and for the general of the scale, it is 0,892. Those values mean the dimensions of the scale are quite reliable (Kayış, 2009, p. 405).

As for objectivity coefficients, it is defined that Cronbach's Alpha reliability coefficients which are calculated on low groups have values between 0,623 and 0,911. Those values show that the RAS can perform reliable, consistent, resolute and objective measurements for both its items and factor, and for the scale in general (Tekin, 1996; Balcı, 2009; Büyüköztürk, 2008).

In conclusion, it can be said that "Reading Attitude Scale" is a reliable and valid scale which can be used in order to define the secondary education students' attitudes towards reading.

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