

Grammar Attitude Scale: A Study of Validity and Reliability

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Abstract

It is believed that there is a positive relationship between the attitudes of the teachers towards the lesson they teach and the attitudes of the students towards this lesson. Within this context, it is considered important to determine the attitudes of teachers who develop an attitude in a way to be able to make the subject achieve the goal effectively. Together with this, it is more significant to determine the attitudes of teachers during their undergraduate education since attitude is a phenomenon that cannot be altered easily. In this study, a scale was developed to measure the attitudes of teacher candidates towards grammar. The validity and reliability analyses of the research designed according to screening model were conducted on 252 undergraduate students. According to the results of Exploratory Factor Analysis (EFA) of the data collected from the 25-item trial form prepared, it was found that the scale had a 15-item, 4-factor structure and explained 67.84% of the total variance. As a result of the Confirmatory Factor Analysis (CFA) performed, the fit index values were examined, and it was seen that the 4-factor structure of the 15-item scale was confirmed as a model. The results of EFA and CFA exhibited that the scale had a valid structure. Cronbach-Alpha internal consistency and test-retest reliability coefficients were calculated to determine the reliability of the scale and according to the values obtained, it was concluded that the scale was reliable.

Keywords: Grammar, attitude, scale development, validity, reliability.

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Introduction

Language is the most effective tool used for conveying the cultural accumulation that creates a nation as well as being a communication tool that allows people to communicate with each other. In the dictionary, the word 'language' is defined as the agreement that people make with words to convey what they think (Turkish Language Society, 1998). According to Aksan (1998), language is a multifaceted, highly developed system that allows the feelings, thoughts and desires to be transmitted to others in a society by using common elements in terms of voice and meaning. Karatay (2014) defines language as the verbal and written communication tool which mankind has created at the end of his experiences for generations. Toklu (2003) indicates that language should not be viewed only as a communication tool but is a mirror reflecting the culture of that society and the most important element effecting the way that culture perceives the world.

Together with accepting the importance of language, the importance of language education has been a concept that is often expressed. First of all, the development of communication skills, and also the improvement of mental skills and learning abilities is closely related to teaching mother tongue. This significance has brought about the debate on the quality of language education (Balçı, 2014). Within this context, one of the areas the teaching of which is discussed has become grammar.

Grammar is the study field that examines the sounds, word structures, word meanings, word etymologies, sentence structures of the language and the rules related to all these. In short, grammar teaches the scientific method of speaking and writing correctly (Er & Ünal, 2016). Teaching grammar includes, together with the comprehension and narration language skills of Turkish, supporting, explaining and organizing activities in these areas where information about language is given. The aim of teaching grammar is not to teach or memorize the rules of the language but to provide the development of the language skills in order. Taking into account the developmental characteristics of the students in the Turkish Lesson Teaching Program (Ministry of National Education, 2017), the learning outcomes related to grammar and writing rules have gradually been structured in an increasingly intense manner and it is aimed to ensure that the students use Turkish language consciously, accurately and carefully in accordance with the rules of speaking and writing.

According to Barın and Demir (2008), when teaching grammar is accomplished, it will have a positive impact on the acquisition of four basic language skills. At the same time, it will contribute to the decrease in the mistakes made about language, mental development, effective communication, using language safely, and learning a foreign language. In this sense, it is important that teachers who will teach grammar to their students in schools have the necessary equipment in this regard. As known, there is a positive relationship between the attitudes of the teachers towards the lesson they will teach and the achievements of the students in this lesson.

Attitude, which is one of the most important concepts in social psychology, can be defined as the path, behavior taken. Attitude, which is one of the significant dimensions of affective field in education, is the emotional and mental preparation state that has a directive or dynamic power of influence on the behaviors of the individual against all the related objects and situations encountered as a result of experiences (Tavşancıl, 2010). Attitude is an affective feature that directs the individuals' behaviors acquired by learning and that causes bias in the decision-making process. If an object or an attitude developed against an object or event is positive, the decisions taken against that object and event are likely to be positive, and if the attitude is negative, the decisions are likely to be negative (Ülgen, 1995). Accordingly, it can be considered that teachers who may have an impact on the achievements of the students should have a positive attitude towards their lessons. For this, by determining the attitudes of teacher candidates regarding the course or topic they will teach, interventions can be made in order to change the behaviors of the teacher candidates who have negative attitudes.

It is observed that the teacher candidates having undergraduate education in the field of Classroom Education, and especially Turkish Language Education, do not give the necessary

importance to teaching grammar and that some teacher candidates exhibit negative attitudes in this respect. They face this situation as a barrier to use Turkish consciously, accurately and carefully in line with the rules of speaking and writing. Therefore, it is difficult to expect the students who will be taught by the teachers at this level to use Turkish accurately. In this respect, increasing the interest levels of teacher candidates towards Turkish grammar and leading them to develop positive attitudes will directly affect the achievements of their future students.

As explained above, it is observed that teacher candidates resist against grammar. It is seen that they develop negative attitude with such expressions as boring, memorization based, pile of rules. It is considered that identifying these attitudes at first and then investigating the reasons for these attitudes will be useful for the literature. For this reason, in this study, it was aimed to develop a measurement tool that can measure the attitudes of teacher candidates towards grammar.

Method

Research Model

This research was designed according to screening model as it was aimed to develop grammar attitude scale for teacher candidates. In screening models, the individual or object being the subject of the research is aimed to be defined within its own conditions just as it is (Karasar, 2013).

Study Group

The study group of the research is composed of 252 undergraduate students studying in the Departments of Turkish Education and Classroom Education in Adnan Menderes University, Faculty of Education. Comrey and Lee (1992) indicate that a sample size of 300 and above is appropriate for data analysis in scale development studies. Furthermore, Child (2006) states that the sample size in scale development studies should be at least five times more than the number of items that will be subjected to factor analysis. In this sense, it is thought that the sample size is enough for this research. Besides, test-retest reliability studies were conducted on 42 teacher candidates.

The Development Phase of the Scale

While developing the Grammar Attitude Scale, relevant literature was searched by the researchers and the academic staff studying on the topic was contacted both within the country and abroad. In accordance with the views obtained, an item pool of 35 items was provided. In line with the views of language and assessment experts and those of the experts in the field, 10 items that were unclear, ambiguous and that included multiple judgements were removed from the item pool, and a 25-item trial form was created. The items in the scale were rated in 5-point-Likert type.

Data Analysis

In order to determine the validity of Grammar Attitude Scale, content and construct validities were examined. For content validity, the views of the academic staff who were the experts on the topic were taken. For construct validity, Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were performed. By performing EFA, a meaningful structure of the scale was established, and it was determined under how many factors the items in the scale were collected. In order to test the appropriateness of the model presented in EFA, CFA was performed. The adequacy of the model was evaluated by examining the fit and error indexes obtained with CFA. In order to determine the reliability of the scale, internal consistency and test-retest methods were applied. For internal consistency, Cronbach's Alpha values of the overall scale and the factors forming it were calculated and for the test-retest reliability applied to determine the stability of the scale, Pearson

correlation coefficient was calculated. For the validity and reliability analyses of Grammar Attitude Scale, SPSS 23.0 and LISREL 8.80 package programs were used.

Findings

In this section, the findings and evaluations related to the validity and reliability analyses of Grammar Attitude Scale are presented.

Exploratory Factor Analysis

In order to prove the construct validity of the scale developed, Exploratory Factor Analysis (EFA) was performed first. For this, the data was tested for the appropriateness to factor analysis first, and the results of Kaiser-Meyer-Olkin (KMO) test and Barlett's Test of Sphericity were examined. KMO aims to test whether the structure of the data is appropriate for factor analysis in terms of sample size. The fact that KMO value is .80 and above means the sample size is excellent and that the Chi-Square test statistics obtained by Barlett's Test of Sphericity is significant is interpreted as the fact that the data shows multivariate normal distribution (Tavşancıl, 2010). As a result of the analyses performed, KMO value of the scale developed was calculated as .827, and the Chi-Square test statistics obtained as a result of Barlett's Test of Sphericity was found significant ($\chi^2 = 1910.481$, sd: 136, $p < .001$). In accordance with these findings, it could be said that the data of the research was appropriate for factor analysis.

As a result of the first EFA performed on the research data, it was revealed that the scale was collected under 6 factors. Because of the fact that some of these factors obtained after Varimax axis rotation technique had less than 3 items (Comrey & Lee, 1992), that the factor loadings of some items were lower than .40, that some items had more than one factor loadings above .40, and that the difference in the factor loadings of these items were lower than .20, these items were removed from the scale and EFA was repeated. As a result of the analyses performed, it was seen that the remaining 15 items in the scale were collected under 4 factors. The factor loadings of the items found in these factors are presented in Table 1.

Table 1. EFA results of Grammar Attitude Scale

Items	Factor 1	Factor 2	Factor 3	Factor 4
8. I like finding the derivational suffixes put to words.	.820			
9. I like learning the verbals (verbal nouns-verbal adjectives-verbal adverbs).	.695			
10. I like finding the inflectional suffixes put to words.	.793			
18. I like finding the constructions (possessive-adjective constructions) in a sentence.	.716			
12. I like learning the topic of meaning in words (real meaning-figurative meaning etc.).		.522		
21. I like classifying the sentences according to meaning (affirmative-negative-question).		.856		
22. I like classifying the sentences according to structure (simple-compound-correlated-coordinate).		.660		
23. I like classifying the sentences according to the order of elements (inverted-regular).		.767		
1. I like classifying the vowels according to characteristics (back-front vowels, narrow-wide vowels etc.).			.892	
2. I like classifying the consonants according to characteristics (strong-soft consonants, steady-tenuis consonants etc.).			.818	
3. I like learning the topic of vowel harmony (palatal harmony-labial harmony).			.747	
7. I have difficulty in accurately finding the stems of the words				.587

in a sentence (e.g. evir-en→evren, çevir-e→çevre)	
15. I have difficulty in finding the complementary verb within a sentence.	.739
17. I have difficulty in determining the types of compound verbs in the sentences. (compound verb with auxiliary verb, regular compound verb, etc.)	.724
20. I have difficulty in finding the elements of the sentence while analyzing it syntactically.	.635

According to the results of EFA, it was found that the 15-item scale developed was collected under 4 factors and that it explained 67.84% of the total variance. It is suggested that the variance explained by the factors should be 50% and above in exploratory factor analysis (Erkuş, 2012). The items forming the factors were examined and the first factor was named as “Attitude towards the Knowledge of Structure”, the second factor was named as “Attitude towards the Knowledge of Sentence”, the third factor was named as “Attitude towards the Knowledge of Phonetics”, and the fourth factor was named as “Negative Attitudes towards Grammar”. CFA was performed to test the appropriateness of the values and the structure obtained as a result of EFA.

Confirmatory Factor Analysis

CFA was performed to confirm the 4-factor-structure obtained as a result of EFA for Grammar Attitude Scale developed. Factor distributions and t values obtained as a result of CFA performed are given in Figure 1.

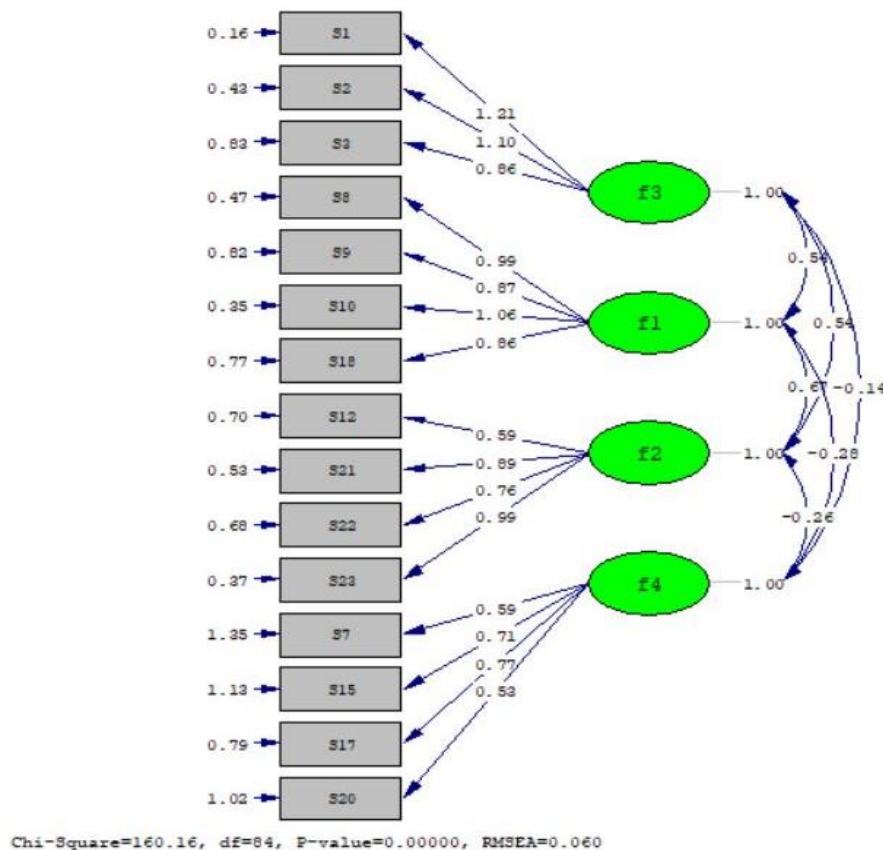


Figure 1. Path Diagram Related to Grammar Attitude Scale

One of the values that should be examined at this phase is p value. This value gives information about the significance of the difference between the expected covariance matrix and the observed covariance matrix (χ^2 value). Naturally, it is desirable that p value is significant (Raykov & Marcoulides, 2008). As shown in Figure 1, p value was significant at .01 level. Besides, the fit and error indexes obtained as a result of CFA are presented in the table below.

Table 2. CFA Results of Grammar Attitude Scale

χ^2	sd	p	χ^2 /sd	RMSEA	GFI	AGFI	RMR	SRMR	NFI	NNFI	CFI	IFI
160.16	84	.00	1.90	.060	.92	.90	.078	.055	.95	.96	.97	.97

One of the important values that should be examined in CFA is the fit statistics. This value is evaluated by comparing with the degree of freedom. If χ^2 /sd \leq 2, it means that there is a perfect fit (Tabachnick & Fidell, 2007). When the table was examined, it could be seen that this value was 1.90 in the scale developed. This value is the evidence that the model exhibits perfect fit.

The fact that RMSEA value, which is less sensitive to sample size and more sensitive to the relationship between the errors, is between .05 and .08 point out that the model is acceptable (Jöreskog & Sörbom, 1993). When RMSEA value obtained from the scale as a result of the analyses (.060) was analyzed, it could be seen that the an acceptable fit index was obtained.

When the other fit indexes in Table 2 were examined, it could be seen that GFI was calculated as .92 and AGFI was calculated as .90. The fact that GFI and AGFI indexes are .95 and above means there is a perfect fit, and that they are .90 and above means there is good fit (Sumer, 2000). Accordingly, it could be said that GFI and AGFI had good fit.

The fact that standardized RMR and RMR values are between 05 and .08 indicates that there is good fit (Brown, 2006). When Table 2 was analyzed, RMR was found as .078 and SRMR was found as .055. Within this framework, it could be seen that RMR and SRMR had good fit.

Finally, when NFI, NNFI, CFI and IFI fit indexes were examined, it could be seen that the values were .95, .96, .97, and .97, respectively. The fact that NFI, NNFI, CFI and IFI fit indexes are above .95 means there is perfect fit (Sümer, 2000). Accordingly, it could be said that NFI, NNFI, CFI and IFI fit indexes had perfect fit. Within this framework, it could be said that the 15-item, 4-factor-structure of Grammar Attitude Scale was confirmed as a model.

Reliability Analysis

Cronbach's -Alpha internal consistency and test-retest reliability coefficients were calculated in the reliability analyses of Grammar Attitude Scale. Cronbach's Alpha coefficients calculated for each factor are given in Table 3.

Table 3. Reliability Analysis Results Related to the Factors of Grammar Attitude Scale

Factors	Cronbach's Alpha Internal Consistency Coefficient (α)
Attitude towards the Knowledge of Structure	.851
Attitude towards the Knowledge of Sentence	.807
Attitude towards the Knowledge of Phonetics	.862
Negative Attitudes towards Grammar	.711

When the table was examined, it could be seen that the reliability coefficient of each factor was higher than the critical value of .70 (DeVellis, 2003; Kline, 1986). As a result of the reliability analyses performed, it was determined that the Cronbach's Alpha internal consistency coefficient of the scale in general was .854. These results indicated that the scale was reliable in terms of internal consistency.

In order to calculate the test-retest reliability coefficient of the scale, the scale was reapplied to 42 teacher candidates 4 weeks after the first application. The Pearson correlation coefficient between the scores obtained from both applications of the scale was calculated as .812. This is proof that the scale provides consistent results from practice to practice.

Conclusion and Suggestions

A 15-item attitude scale was developed in this study to determine the attitudes of teacher candidates towards grammar. In the development phase of Grammar Attitude Scale, validity and reliability analyses were performed on a 25-item test form as a result of expert evaluations. Content and construct validities were examined for the validity analyses. For the content validity, the views of the academic staff who were experts on the subject were obtained. EFA and CFA were performed for construct validity. As a result of EFA, it was found that the scale had a 4-factor-structure and it explained 67.84% of the total variance. As a result of CFA performed, fit index values were examined and it was seen that the 4-factor-structure of the 15-item scale was confirmed as a model. EFA and CFA results indicated that the scale had a valid structure. In order to determine the reliability of the scale, Cronbach's Alpha internal consistency and test-retest reliability coefficients were calculated. According to the values found, it was concluded that the scale was reliable.

From the explanations given above, it can be said after the validity and reliability analyses performed during the research that the scale is able to measure the attitude towards grammar. It is believed that this scale will be a guide to measure the attitudes of teacher candidates towards grammar. As a result of the scale developed, the attitudes of teacher candidates towards grammar can be determined and the suggestions below can be made for the solutions to the problems encountered.

1. By determining the attitudes of teacher candidates towards grammar, trainings can be provided for the teacher candidates with negative attitudes towards grammar by applying different instructional methods.
2. Empirical studies can be carried out in order to increase the attitudes of teacher candidates towards grammar.
3. Studies can be carried out to reveal whether there is a relationship between the attitudes of teachers and the attitudes of students towards grammar.

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