

**DEVELOPING THE SCALE FOR ATTITUDE TOWARDS GRADUATE STUDIES:
A VALIDITY AND RELIABILITY STUDY¹**

**LİSANSÜSTÜ EĞİTİME YÖNELİK TUTUM ÖLÇEĞİNİN GELİŞTİRİLMESİ:
GEÇERLİK VE GÜVENİRLİK ÇALIŞMASI**

Sevim BEZEN*² Işıl AYKUTLU³ Nilgün SEÇKEN⁴ Celal BAYRAK⁵

ABSTRACT

In this study, the aim was to develop the scale called “Scale for Attitude Towards Graduate Studies” which will determine undergraduate students’ attitude towards graduate studies. The scale was applied to 200 pre-service secondary school teachers who are enrolled at the Department of Secondary School Science and Mathematics Education at a state university in Ankara during the Spring semester at 2014-2015 academic year. In the analysis of the scale, which consists of 27 items of 5 likert-type, exploratory factor analysis (EFA) was used. As a result of the analyses, KMO value of the scale, which has four factors as “Interest and Importance, Fear and Anxiety, Lack of Need, Desire and Want,” was found to be 0,934. Reliability coefficient of the scale is 0,950 and total variance explained by the final scale is 60,315%. The result of the analyses show that the designed scale is a reliable and valid data gathering tool in determining secondary education pre-service teachers’ attitude towards graduate studies.

Key words: Attitude scale, graduate studies, pre-service teachers.

ÖZET

Bu araştırmada, ortaöğretim alan öğretmenliği lisans öğrencilerinin lisansüstü eğitime yönelik tutumlarını belirleyecek “Lisansüstü Eğitime Yönelik Tutum Ölçeği” adlı ölçeğin geliştirilmesi amaçlanmıştır. Ölçeğin uygulaması 2014-2015 eğitim-öğretim yılının bahar döneminde Ankara’da bulunan bir devlet üniversitesinin Ortaöğretim Fen ve Matematik Alanlar Eğitimi bölümünde öğretim gören 200 öğretmen adayı ile gerçekleştirilmiştir. 27 maddelik 5’li likert tipi olan ölçeğin analizinde açımlayıcı faktör analizinden (AFA) yararlanılmıştır. Analizler sonucunda KMO değeri 0,934 olarak bulunmuştur. “İlgi ve Önem, Korku ve Kaygı, İhtiyaç Duymama, Arzu ve İstek” şeklinde dört faktörlü olarak belirlenen ölçeğin güvenirlik katsayısı 0,950 ve nihai ölçeğin açıkladığı toplam varyans % 60,315’dir. Yapılan analizlerin sonucu, geliştirilen ölçeğin ortaöğretim alan öğretmenliği lisans öğrencilerinin lisansüstü eğitime yönelik tutumlarının belirlenmesinde geçerli ve güvenilir bir veri toplama aracı olduğunu göstermektedir.

Anahtar Kelimeler: Lisansüstü eğitim, öğretmen adayları, tutum ölçeği.

¹ This research was supported by Hacettepe University Scientific Research Projects Coordination Unit.

*² Res Assist., Hacettepe University, Faculty of Education, Ankara-TURKEY, corresponding author e-mail: sevimbezen@hacettepe.edu.tr

³ Assist. Prof. Dr., Hacettepe University, Faculty of Education, Ankara-TURKEY, e-mail: aykutlu@hacettepe.edu.tr

⁴ Prof. Dr., Hacettepe University, Faculty of Education, Ankara-TURKEY, e-mail: nsecken@gmail.com

⁵ Prof. Dr., Hacettepe University, Faculty of Education, Ankara-TURKEY, e-mail: cbayrak@hacettepe.edu.tr

1. INTRODUCTION

In line with the requirements of our age, the importance given to educating individuals who are open to scientific knowledge and can think critically has increased (Hand & Prain, 2002; Kenar & Balcı, 2012). Education contributes to the training of qualified people and the development of a country. Today, development in education changes in correlation with the quality of education. Ensuring success by increasing the quality of education depends on the quality of teachers. Without a doubt, teachers are one of the pillars of education. Teachers make it possible to reach the determined targets and expected results (Thomson, 1993). Quality of teachers plays a highly significant role in education system (Üstüner, 2006; Woods, 1990). Thus, it is thought that special importance should be given to the education of pre-service teachers who will become the teachers of the future. Faculties of education, which function as the locomotive in training the education staff, have a huge responsibility to achieve this end. Universities contribute to the development of students' capabilities to do research and of their skills while at the same time educating individuals appropriate for the needs of society. However, it's been underlined that undergraduate studies cannot be enough in an age where knowledge constantly changes and evolves. In this case, the need for graduate studies increases (Güven & Tunç, 2007). Graduate education is a system that enables individuals to become experts in a given field through various scientific studies conducted in many fields (Schafer & Lamm, 1995). Additionally, considering insufficient number of instructors, graduate education also plays an important role in the education of these instructors. Taking these into consideration, it is thought that teachers of the future should be steered towards graduate education in order to increase the quality of education and to be able to keep up with the demands of the age (İlhan, Sünkür & Yılmaz, 2012). For this very reason, pre-service teachers attitudes towards a graduate education that they can pursue at their own will play a significant role (Petty & Cacioppo, 1996). Attitude can be defined as an internal state which is determined either as a positive or a negative one by the individuals through their actions depending on situations (Allport, 1967). It can be said that although attitude is not an observable behavior, it is an inclination related to the individual's behavior and it develops within the learning process (Thurstone, 1967). Moreover, it is known that cognitive qualities of which attitude is part are effective in determining pre-service teachers' interests and preferences. Cognitive qualities also determine human behavior (Bloom, 1976). When literature on this matter is examined, it is revealed that pre-service teachers' attitude towards graduate education have been examined in certain disciplines. It was determined that in these studies, which are limited to certain disciplines, pre-service teachers' attitudes were examined comparatively with other variables such as gender, success, and class level. Highly different results were obtained in these researches (Köksalan, İlter & Görmez, 2010; Ünal & İlter, 2010). In İlhan, Sünkür and Yılmaz's (2010) study, for example, pre-service primary school teachers' attitudes towards graduate studies were examined comparatively with such variables as class, gender, and discipline, and it was determined that their attitudes change significantly depending on these variables. In a study by Köksalar, İlter and Görmez (2010), it was concluded that based on their socio-cultural background, pre-service teachers are enthusiastic about graduate studies. Erkilic (2007) determined that education, socio-economic, research-development, and

psycho-social dimensions are effective on pre-service teachers' willingness for graduate studies. Lastly, according to Turkey National Report of "Teaching and Learning International Survey," (TALIS) a study commissioned by OECD, very few teachers have a graduate degree, and this is in line with the fact that there are not many studies in literature on this issue (Dönmez, Aydoğdu, Sever & Aypay, 2012). When all these results are taken into consideration, it is believed that this study will shed light on literature as it contributes to determining pre-service secondary school teachers' attitudes towards graduate education, to determining their current situation, and to predicting their future behavior. There is a great need for this study since there are no studies in literature in relation to determining pre-service biology, physics, chemistry, and mathematics teachers' attitudes. In this study, which takes all these concerns into consideration, the aim is to design a scale that can be used to determine pre-service secondary school teachers' attitudes towards graduate studies.

2. METHODOLOGY OF RESEARCH

This study was done to design a scale that would determine pre-service secondary school teachers' attitudes towards graduate studies. To this end, a "Scale for Attitude Towards Graduate Studies" was developed.

2.1. Sample of Research

Study group of the research consists of pre-service teachers enrolled at the department of Secondary School Science and Mathematics Education at a state university in Ankara during the Spring semester of 2014-2015 academic year. While developing the scale, it was taken into consideration that the sample should be at least five times the number of items in the scale, and therefore the study was realized with the participation of 200 pre-service teachers (Child, 2006).

2.2. Developing the Scale

In the study, a 5 likert-type "Scale for Attitudes Towards Graduate Studies" was developed in order to determine pre-service secondary school teachers' attitudes towards graduate studies. The following stages were followed in developing the scale:

- a) Creating the attitude items,
- b) Consulting the experts,
- c) Realizing the pre-trial,
- d) Conducting context, structure validity and reliability studies.

Detailed explanation about these items are as follows:

a. Creating the Attitude Items

While creating the attitude items, a thorough literature review was conducted on attitude, and other designed or adapted scales were examined (Büyüköztürk, 2002, Kan & Akbaş, 2005; Çetin, 2006; Güven & Uzman, 2006; İlhan & Çetin, 2014; Küçük, Yılmaz, Baydaş & Göktaş,

2014; Nuhoğlu, 2004). In order to form the attitude items for graduate studies, first of all, 24 pre-service teachers were asked to write a text that describes their feelings and thoughts about graduate studies. These texts were then analyzed context-wise, and 40 positive and negative attitude items were formed. While forming these items, items were expressed as positive and negative, bearing in mind that there should not be any factual expressions, that items are written in a simple and clear language, that an item does not contain such words as “much” or “very.” Half of the items were designed as negative ones, and the other half as positive.

For the positive items, “Strongly agree,” and “agree” were used. For negative items, “Strongly disagree” and “disagree” were used. For neutral items, “uncertain” was used.

b. Consulting the Experts

Experts were consulted in order to determine whether the items of the designed scale represent the behavior they set out to measure. To this end, the scale was examined by two assessment and evaluation experts, one Turkish expert, one chemistry education and two physics education experts. Experts checked whether the scale’s items measure attitudes towards graduate studies. Items of the scale were also examined in terms of its grammar and comprehensibility, and they were revised accordingly. In accordance with experts’ views, necessary changes were made and eight items which the experts recommended to leave out of the scale were excluded.

c. Pre-Trial

At this stage, an evaluation was done with the participation of 20 pre-service teachers in order to determine the comprehensibility of the scale and the time required to answer the items. At the end of this application, it was determined that 32 attitude items could be answered in approximately 15-20 minutes.

d. Content, Structure Validity and Reliability Studies

Data obtained at the end of the application related to designing a “Scale for Attitude towards Graduate Studies” were digitalized and content and structure validity as well as reliability studies were done. For content validity, literature was reviewed and items in the measuring tool were designed with the help of experts. In addition to all these, positive sentences in the scale were graded from “Strongly agree” to “Strongly disagree” as 5, 4, 3, 2, 1. Then, the scale was applied to 200 pre-service teachers. In order to test the meaningfulness of the difference between the averages of the upper and lower groups of the scale points, items’ distinctiveness was checked. To this end, independent variable t test was done. Three items from the scale were excluded because their t values were not meaningful. As a result of the analyses, KMO value was found to be 0,934, and reliability coefficient of the scale, which is determined to be a four-factor one, was calculated to be 0,950.

2.3. Procedures and Data Analysis

Participants of the research were determined randomly from biology, physics, chemistry, and mathematics education departments in such a way so as to have an equal number of participants from each department. Moreover, participation was on a voluntary basis. Application was done during the class hours of professors who accepted to be part of the research. After declaring that participants' personal info will be confidential, measuring tool was distributed to the pre-service teachers. Explanatory factor analysis was used to determine the pre-service secondary school teachers' attitudes towards graduate studies.

3. RESULTS OF RESEARCH

Data of 200 pre-service teachers were analyzed via explanatory factor analysis (EFA), and these findings were given below as content and structure validity, and reliability.

3.1. Content and Structure Validity – Reliability

While scale items were formed through expert views in literature for the content validity of the scale, scale's structure validity was done via EFA. When the items accord with experts' views 90% or more, these items were put into the scale as they are; when they accord with experts' views 70-90%, these items were revised according to suggestions and then were put into the scale (Büyüköztürk, 2002). The final version of the scale was sent to three academics that were not among the experts of the research, and it was seen that concordance between experts' views is 90% and more. Then, 32-item scale was applied to 20 pre-service teachers as a pre-trial, and no correction was necessary for the items. Lastly, pre-application was done to 200 pre-service teachers during the class hour in 15-20 minutes.

EFA, which was done for the structure validity of the scale, is a statistics technique frequently-used in education and psychology researches. This technique is an analysis that aims to put forth the connection between unknown implicit variables and observed variables. This analysis sets out to explain how observable variables (items) are connected to related factors, and by doing so it aims to gather these items under few factors with high factor load values. For the researchers who have no idea under which factor they do the measurement, this analysis method is defined to be explanatory or exploratory (Byrne, 1994; Şekercioğlu, 2009). In other words, EFA makes an inquiry as to whether the signifiers that are gathered under a specific factor ensure the signifiers of a theoretical structure (Green, Salkind & Akey, 1997).

In order to test the appropriateness of the scale's data set, Kaiser-Meyer-Olkin test was performed. Kaiser-Meyer-Olkin is a test that compares the magnitude of partial correlation coefficients and the magnitude of observed correlation coefficients. At the end of the test done for the scale for attitude towards graduate studies, KMO value was found to be 0,934. For this value, 0,7 and over is at acceptable levels (Leech, Barrett & Morgan, 2005). Moreover, for the normalcy premise of the scale was determined according to Bartlett globosity test in which data comes from a multi-variable normal distribution. As a result of the analysis, Bartlett globosity test was found to be meaningful ($\chi^2=3261,27$; $df:351$; $p=.00<.05$). For the linearity premise,

dispersion diagrams were examined and it as concluded that linearity was achieved due to the presence of elliptic dispersions.

Varimax technique was used in factor analysis. According to this, items were examined as to whether they meet the acceptable levels in terms of their factor load values, and those which do not meet the criteria were excluded from the scale. Moreover, factor structure of the analysis turned out to have four factors, namely, Interest and Importance, Fear and Anxiety, Lack of Need, and Desire and Want; and it explains 60,315% of the total variance. At the end of all these procedures, number of remaining items are 27. Factor load values of the four-factor structure related to the scale are given in Table 1.

Table 1.

Items and Factor Load Values of the Scale for Attitude towards Graduate Studies

Item #	Item	Factor			
		1	2	3	4
31	I like talking to people with a graduate degree.	,728			
29	I sympathize with people who are graduate students.	,704			
25	People who completed their undergraduate studies should continue with graduate studies for self-growth.	,700			
7	Graduate studies are important in life.	,662			
33	I believe graduate studies are a necessity for the professional life.	,624			
18	I like informing people about graduate studies.	,569			
35	I am interested in graduate studies.	,567			
42	The idea of graduate studies urges me to do research.	,565			
27	Even the idea of graduate studies is appealing to me.	,561			
21	I'd like to share the knowledge I got during my graduate studies with my students.	,510			
46	Graduate studies are an indispensable part of education.	,463			
39	*Even the idea of having to do research bothers me.		,681		
43	*I would not want to continue with graduate studies because graduate		,642		

their load values are between 0,473 and 0,680. Lastly, it was seen that there are four items under the factor titled “Desire and Want” with the load values between 0,554 and 0,777. In literature, it is said that there should be at least three items under each factor, and it is seen that this research fits into this (Raubenheimer, 2004). Variance value that these four items explain is 60,315%. In accordance with the views of Scherer, Wiebe, Luther & Adams (1988), it can be claimed that this value is statistically meaningful.

In order to determine reliability, Cronbach Alpha internal consistency coefficient of the scale was calculated; reliability coefficient for the totality of the four-factor scale was found to be 0,950, reliability for the first factor was 0,911; for the second it was 0,826; for the third 0,855, and for the fourth it was found to be 0,829. Thus, it was determined that all factors are reliable at an acceptable level. In this field, it was seen that the reliability coefficient of Ünal and İlter’s study (2010) was also 0,95.

4. DISCUSSION

Within the scope of the study, the aim was to design a scale that would determine pre-service secondary school teachers’ attitudes towards graduate studies. With the advancement of technology, graduate studies becomes important in their efforts to constantly improve themselves. Thus, the need for graduate studies to reach information through scientific research, to be able to interpret situations by thoroughly examining them, and to put forth a scientific and authentic work (Mcmillar & Schumacher, 2006). When literature was examined, it was seen that although there have been some studies conducted with the participation of pre-service teachers from various fields in order to determine their attitude towards graduate studies, there are no studies in literature in relation to determining pre-service biology, physics, chemistry, and mathematics teachers’ attitudes; and this fact increases the importance of this study. It is believed that this study will contribute to the field because it will reveal pre-service biology, physics, chemistry, and mathematics teachers’ attitudes towards graduate studies.

During the designing process of the scale, first of all 40 items of 5-likert type were prepared through qualitative methods. Then, the scale – 32 items after expert opinions – was applied to 200 pre-service teachers, and reliability and validity studies were done with the obtained data. At the end of EFA, a 27-item scale with four factors was obtained. Factors of the scale are Interest and Importance, Fear and Anxiety, Lack of Need, and Desire and Want. This 27-item scale with four factors is a reliable and valid measuring tool for determining pre-service secondary school teachers’ attitudes towards graduate studies.

5. CONCLUSIONS

When the answers given by the pre-service teachers were taken into consideration, it was determined that pre-service teachers like chatting with graduate students, that they sympathize with them, that they could endure hardship to get into graduate school, that they would like to continue with graduate studies even when they become teachers, that they think graduate studies

are important for self-growth, for their professional lives, in short for life. It was also seen that pre-service teachers are interested in graduate studies, that they like informing people about graduate studies, and that they plan to share their knowledge acquired at graduate school with their students. In addition to these, it was also revealed that graduate studies increase pre-service teachers' willingness to do research. While there are positive views, there are also concerns: pre-service teachers indicated that doing research distresses them, that researching scientific knowledge is nerve-wrecking, and that application process as well as entrance exams are difficult. It was also seen that pre-service teachers think of graduate studies as a nerve-wrecking phenomenon and that they do not think it contributes to their professional lives. Findings put forth pre-service secondary school teachers' attitudes towards graduate studies. It is believed that pre-service teachers should be informed about graduate studies before they enter professional life because they should be better equipped both professionally and academically, as the results of the study shows. Pre-service teachers should be directed towards scientific studies and research, and they should be encouraged to want to further their studies at graduate schools.

In conclusion, this scale can be used in determining pre-service secondary school teachers' attitudes towards graduate studies. It can be applied to different study groups and reliability and validity studies can be re-done. As the inscribing, application, and validity of the scale were done in Turkish, its application in different countries should be done after language adaptation of the scale. This research would serve as an example to similar scale designing studies.

REFERENCES

- Allport, G. W. (1967). *Attitudes. Readings In Attitude Theory and Mesurement*. (Ed.) Martin Fishbein. New York: John Wiley&Sons, 1-14.
- Bloom, B. S. (1976). *Human characteristics and school learning*. New York, NY: McGraw-Hill.
- Büyüköztürk, Ş. (2002). Factor analysis: Basic concepts and using to development scale. *Educational Administration In Theory & Practice*, 32, 470-483.
- Byrne, B. M. (1994). *Structural equation modeling with EQS and EQS/Windows: Basic Concepts, Applications and Programming*. California: Sage Publications, Inc.
- Child, D. (2006). *The essentials of factor analysis (Third Ed.)*. London: Continuum.
- Çetin Ş. (2006). Establishment of the profession of teaching attitude scale- The study for validity and confidence. *The Journal of The Industrial Arts Education Faculty of Gazi University*, 18, 28-37.

- Dönmez, A., Aydoğdu, E., Sever, M. ve Aypay, A. (2012). Attitudes of teacher candidates towards graduate education. *The Journal of Education Faculty of Trakya University*, 2(1), 9-27.
- Erkılıç, T. A. (2007). Factors affecting students' willingness to pursue postgraduate education. *GAUJ. Soc. & Appl. Sci.*, 3(5), 46-72.
- Field, A. P. (2009). *Discovering statistics using SPSS*. London, England: SAGE.
- Green, S. B., Salkind N. J., & Akey, T. M. (1997). *Using SPSS for windows: Analyzing and Understanding Data*. New York: Printice Hall.
- Güven, B. ve Uzman, E. (2006). A study to develop a scale for measuring attitudes towards high school geography course. *Kastamonu Educational Journal*, 14(2), 527-536.
- Güven, İ. ve Tunç, B. (2007). Postgraduate students' academic problems (The example of ankara university institute of educational sciences). *Milli Eğitim Journal*, 173, 157-172.
- Hand, B., Prain, V., & Wallace, C. (2002). Influences of writing tasks on students' answers to recall and higher-level test questions. *Research in Science Education*, 32(1), 19-34.
- İlhan, M., Sünkür, M. Ö. ve Yılmaz, F. (2012). Analysis of primary teacher candidates' attitudes towards postgraduate education (Dicle University Sample). *Mehmet Akif Ersoy University Journal of Education Faculty*, 12(23), 22-42.
- İlhan, M. ve Çetin, B. (2014). Development of classroom assessment environment scale (CAES): Validity and reliability study. *Education and Science*, 39(176), 31-50.
- Kan A. ve Akbaş A. (2005). A study of developing an attitude scale towards chemistry. *Mersin University Journal of Education Faculty*, 1(2), 227-237.
- Kenar, İ. ve Balcı, M. (2012). The development of attitudes towards science and technology lesson scale: The case of 4th and 5th grade primary school students. *Dumlupınar University Journal of Social Science*, 34, 201-210.
- Köksalan, B., İlter, H. ve Görmez, E. (2010). A study on socia-cultural characteristics and postgraduate education willingness of the classroom teachers. *Ahi Evran University Journal of Education Faculty*, 11(3), 277-299.
- Küçük, S., Yılmaz, M. R., Baydaş, Ö. ve Göktaş, Y. (2014). Augmented reality applications attitude scale in secondary schools: Validity and reliability study. *Education and Science*, 39(176), 383-392.

- Leech, N. L., Barrett, K. C., & Morgan, G. A. (2005). *SPSS for intermediate statistics; Use and interpretation. (2th edition)*. Mahwah, NJ: Lawrence Erlbaum Associates.
- McMillan, J. H., & Schumacher, S. (2006). *Research in education: Evidencebased inquiry (Sixth Ed.)*. Boston: Pearson.
- Nuhođlu H. (2004). The development of a attitude scale for physics laboratory and the assessment of pre-service teachers' attitudes towards physics laboratory. *Journal of Kırşehir Education Faculty*, 5(2), 317-327.
- Petty, R. E., & Cacioppo, J. T. (1996). *Attitudes and persuasion: Classic and contemporary approaches*. Colorado: Westview Press.
- Raubenheimer, J. E. (2004). An item selection procedure to maximise scale reliability and validity. *Journal of Industrial Psychology*, 30(4), 59-64.
- Schaefer, R. T., & Lamm, R. P. (1995). *Sociology*. USA: McGraw-Hill.
- Scherer, R. F., Wiebe, F. A., Luther, D. C., & Adams J. S. (1988). Dimensionality of coping: Factor stability using the ways of coping questionnaire. *Psychological Reports*, 62(3), 763-770.
- Şekerciođlu, G. (2009). *Adaptation of self-perception profile for children and testing factor structure equation according to different variables*. Unpublished doctoral dissertation, Ankara University, Institute of Educational Sciences, Ankara.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics (5th Ed.)*. Boston: Pearson Education.
- Thompson, R. C. (1993). A comparison of the effects of two classroom behavior management models upon the attitudes of fourth and fifth-grade children toward school. *Dissertation Abstracts International*, 52(12), 4203.
- Thurstone, L. L. (1967). *Attitudes can be measured. Reading An Attitude Theory and Measurement*. (Ed.) Martin Fishben. New York: John Wiley&Sons, 208-219.
- Ünal, Ç. ve İlter, İ. (2010). Attitudes of classroom teacher candidates towards graduate education. *Atatürk University Journal of Graduate School of Social Sciences*, 14(2), 1-18.
- Üstüner, M. (2006). Reliability and validity study of an attitude scale of teaching profession. *Educational Administration: Theory and Practice*, 45, 109-127.

Woods, P. (1990). *Teacher skills and strategies*. London: The Falmer Press.

GENİŞLETİLMİŞ ÖZET

Çağımızın gereksinimleri doğrultusunda, günümüzde düşünebilen, eleştirebilen, sorgulayabilen ve bilimsel bilgiye açık bireylerin yetiştirilmesinde eğitime verilen önem gün geçtikçe artmaktadır. Eğitim, bir ülkenin gelişmesine ve nitelikli insan yetiştirilmesine katkı sağlamaktadır. Günümüzde eğitimin gelişimi, eğitimin kalitesi ile doğru orantılı olarak değişmektedir. Eğitimin kalitesini artırarak başarının sağlanması ise, öğretmen niteliğine bağlı olarak değişim göstermektedir. Kuşkusuz ki eğitimin temel unsurlardan biri öğretmenlerdir. Öğretmenler, eğitim ve öğretimde belirlenen hedeflere ve beklenen sonuçlara ulaşılmasını sağlamaktadırlar. Öğretmenlerin niteliği eğitim sisteminde çok önemli bir rol oynamaktadır. Bu nedenle geleceğin öğretmeni olacak olan öğretmen adaylarının da eğitimine önem verilmesi gerektiği düşünülmektedir. Bu konuda toplumun eğitim kadrolarının oluşturulmasında lokomotif rolü üstlenmiş olan eğitim fakültelerine önemli görevler düşmektedir. Üniversiteler, toplum ihtiyacına uygun bireyleri yetiştirmekle beraber onların alanları ile ilgili bilgilerinin, becerilerinin ve araştırma yapabilme yeterliklerinin gelişmesine katkı sağlamaktadır. Ancak bilginin sürekli değiştiği çağımızda adayların lisans süresi içerisinde aldıkları eğitimin yeterli olamayacağı vurgulanmaktadır. Bu durumda ise, lisansüstü eğitime duyulan ihtiyaç artmaktadır. Lisansüstü eğitim, birçok alanda gerçekleştirilen bilimsel çalışmalarla bireylerin ilgili alanda uzmanlaşmasını sağlayan bir sistem olarak ele alınmaktadır. Lisansüstü eğitim, bilimsel araştırma yaparak bilgiye ulaşma, durumları derinlemesine irdeleyerek yorumlayabilme, özgün ve bilimsel bir eser ortaya koyabilme şeklinde imkânlar sağlamaktadır. Aynı zamanda ülkemizde öğretim elemanı eksikliği olduğu düşünüldüğünde, öğretim elemanlarının yetiştirilmesinde de rol almaktadır. Bu gibi durumlar ele alındığında, eğitimin kalitesinin artırılması ve çağımızdaki gelişmelerin takip edilebilmesi amacıyla geleceğin öğretmenlerinin lisansüstü eğitime yönlendirilmesi gerektiği düşünülmektedir. Tam bu noktada da, öğretmen adaylarının kendi tercihleri doğrultusunda devam edebilecekleri lisansüstü eğitime yönelik tutumları önemli bir rol oynamaktadır. Bu nedenle araştırmanın, öğretmen adaylarının eğitim ve öğretim sürecinde lisansüstü eğitime yönelik tutumlarının ölçülmesinin ilerideki davranışlarının tahmin edilmesine ve içinde buldukları durumun saptanmasına ve ortaöğretim alan öğretmenlerinin lisansüstü eğitime yönelik tutumlarının belirlenmesine katkı sağlayacağından alana ışık tutacağına inanılmaktadır. Özellikle eğitim fakültesi içerisinde önemli bir yeri olan biyoloji, fizik, kimya ve matematik öğretmenliklerinin lisans öğrencilerinin tutumlarının belirlenmesine yönelik alanyazında çalışmaya rastlanılmaması, bu araştırmanın yapılması ihtiyacını doğurmuştur. Tüm bu noktalar göz önüne alınarak gerçekleştirilen çalışmada, ortaöğretim alan öğretmenliği lisans öğrencilerinin lisansüstü eğitime yönelik tutumlarının belirlenmesinde kullanılabilecek “Lisansüstü Eğitime Yönelik Tutum Ölçeği”nin geliştirilmesi amaçlanmıştır.

Araştırmanın çalışma grubunu, 2014-2015 eğitim-öğretim yılının bahar döneminde Ankara'da bulunan bir devlet üniversitesinin Ortaöğretim Fen ve Matematik Alanlar Eğitimi bölümünde öğretim gören öğretmen adayları oluşturmaktadır. Ölçek geliştirme çalışmasında örneklemin ölçekte yer alan madde sayısının en az beş katı olması gerektiği dikkate alındığından, araştırma 200 öğretmen adayının katılımı ile gerçekleştirilmiştir. Araştırmada “Lisansüstü Eğitime Yönelik Tutum Ölçeği” geliştirilerek ortaöğretim alan öğretmenliği lisans öğrencilerinin, lisansüstü eğitime yönelik tutumlarını belirlemek amacıyla 5’li likert tipi ölçek kullanılmıştır. “Lisansüstü Eğitime Yönelik Tutum Ölçeği” hazırlanırken tutum maddelerinin oluşturulması, uzman görüşüne başvurulması, ön denemenin gerçekleştirilmesi, kapsam, yapı geçerliği ve güvenilirlik çalışmalarının yapılması şeklinde aşamalar izlenmiştir.

Araştırmanın katılımcıları, biyoloji, fizik, kimya ve matematik öğretmenliği anabilim dallarının her bir sınıfından eşit sayıda olacak şekilde seçkisiz olarak belirlenmiştir. Ayrıca araştırmaya katılan öğretmen adaylarının gönüllü olmalarına dikkat edilerek seçilmiş ve uygulamaya başlanılmıştır. Uygulama, araştırmaya katılımı kabul eden öğretim üyelerinin ders saatleri içerisinde gerçekleştirilmiştir. Öğretmen adaylarının kişisel bilgilerinin araştırma süresi boyunca gizli tutulacağı ifade edildikten sonra ölçme aracı öğretmen adaylarına dağıtılmıştır. Ortaöğretim alan öğretmenliği lisans öğrencilerinin lisansüstü eğitime yönelik tutumlarının belirlenmesi ise, açımlayıcı faktör analizi ile gerçekleştirilmiştir.

Ölçeğin veri setinin uygunluğunu test etmek amacıyla Kaiser-Meyer-Olkin testi yapılmıştır. Kaiser-Meyer-Olkin, gözlenen korelasyon katsayılarının büyüklüğü ile kısmi korelasyon katsayılarının büyüklüğünü karşılaştıran bir testtir. Lisansüstü eğitime yönelik tutum ölçeği için yapılan test sonucunda KMO değeri 0,934 çıkmıştır. Ayrıca ölçeğin normallik sayıltısı için verilerin çok değişkenli normal dağılımdan geldiği Bartlett küresellik testine bakılarak tespit edilmiştir. Yapılan analiz sonucunda Bartlett küresellik testi anlamlı bulunmuştur ($\chi^2=3261,27$; df:351; $p=.00<.05$). Doğrusallık sayıltısı için saçılma diyagramlarına bakılmış ve elips şeklinde dağılımların elde edildiği görülerek doğrusallığın sağlandığı sonucuna varılmıştır. Faktör analizinde varimax tekniği kullanılmıştır. Buna göre maddelerin binişiklik ve faktör yük değerlerinin kabul düzeyini karşılayıp karşılamaması açısından maddeler değerlendirilmiş ve buna uygun olmayan maddeler ölçekten çıkarılmıştır. Sonuç olarak ölçeğin geliştirme süreci içerisinde ilk olarak nitel yöntemlerle 5’li likert tipi 40 maddelik ölçek hazırlanmıştır. Daha sonra uzman görüşleri ile 32 maddeyi içeren ölçek 200 öğretmen adayına uygulanmış ve elde edilen verilerle geçerlik güvenilirlik çalışmaları yapılmıştır. AFA sonucunda dört faktörlü 27 maddelik bir ölçek elde edilmiştir. Ölçeğin faktörlerinin açıkladığı toplam varyans % 60,315’dir. Faktörler ise, ilgi ve önem, korku ve kaygı, ihtiyaç duymama, arzu ve istek olarak belirlenmiştir. Araştırmada elde edilen bulgular sonucunda geliştirilen 27 maddelik dört faktörlü ölçek, ortaöğretim alan öğretmenliği lisans öğrencilerinin lisansüstü eğitime yönelik tutumlarını belirlemede geçerli ve güvenilir bir ölçme aracıdır.

Araştırmada geliştirilen ölçeğin farklı çalışma grupları üzerinde uygulaması gerçekleştirilebilir ve geçerlik güvenilirlik çalışmaları tekrarlanabilir. Maddelerin yazımı, uygulaması ve geçerliği Türkçe olarak gerçekleştirilen ölçeğin, farklı ülkelerde yararlanılacak araştırmacılar tarafından ölçeğe dil adaptasyonu yapılarak uygulanması önerilebilir. Araştırma benzer ölçek geliştirme çalışmalarına örnek teşkil edecektir