

WCES 2014

How Are The Pre-Service Teachers' Attitude Levels Towards Educational Measurement And Evaluation Course And Does It Differ According To The Demographic Characteristics?

Nuri Doğan^{a*}, Yusuf Kara^b

^a*Hacettepe Üniversitesi, Eğitim Fakültesi, Beytepe, Ankara, 06800, TURKEY*

^b*Hacettepe Üniversitesi, Eğitim Fakültesi, Beytepe, Ankara, 06800, TURKEY*

Abstract

In this study, the claims that the attitudes toward the course are low and that they are affected by demographic characteristics are examined. This study was conducted with the data obtained from 214 pre-service teachers who voluntarily participated to this study. On the contrary to the claims, it is found that the pre-service teachers' attitudes were at medium level. The gender and type of graduated universities do not make a difference on the attitudes points. But being graduated from a department which is making admissions with a quantitative score, makes a difference on the attitude points in contrary to qualitative departments.

© 2015 The Authors. Published by Elsevier Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Selection and peer-review under responsibility of the Organizing Committee of WCES 2014

Keywords: Measurement And Evaluation, Attitude, Demographic Properties, T Test, ANOVA

1. Introduction

In Turkey, some common courses called “certificate courses” are taught the students who study in departments which are in the faculty of education and additionally those who graduated from other faculties but also want to be a teacher. These courses are determined by The Ministry of National Education (MEB), universities and Council of

* Nuri Doğan. Tel.: +9-234-234-234.

E-mail address: nuridogan2004@gmail.com

Higher Education (YÖK) according to their associated decisions. Educational Measurement and Evaluation is one of this certificate courses. Although its name and content can change depended on the semester it is taught, it has been the most basic course among certificate courses. Because, regardless of his/her branch a teacher has to benefit from and use measurement and evaluation processes in order to determine student's educational needs, observe their achievement process and evaluate their success level. On this basis it can be said that some proficiencies and skills which a teacher must have are taught in the educational measurement and evaluation course. Thus because of this property, 15% of the skills tested in KPSS which is the exam that pre-service teachers must attend, consist of the skills that are aimed to acquire within the context of the educational measurement and evaluation course (ÖSYM, 2012). MEB required to make differences in curriculums taking into consideration the results of some national examinations (MEB 2005, 2007) and the unsuccessful results in some international assessment projects like PISA TIMSS and PIRLS compared to other participant countries. Since 2005, new curriculums which were developed according to constructive approach have begun to be carried out in primary schools and gradually in secondary schools. The uses of new curriculums brought about new measurement and evaluation applications. In some universities, some authentic measurement techniques are added to the content of the educational measurement and evaluation course. Curriculums of teacher education programs had to renew themselves and take into consideration the teachers' profiles that they need. In conjunction with the renewed primary, elementary and high school curriculums, It can be seen that the pre-service teachers' needs of the skills which are included in educational measurement and evaluation courses increased, by revising the content and the frequency levels of in-service trainings. So, the need of taking effective precautions for making the pre-service teachers to acquire the knowledge, abilities and proficiencies that involved in measurement and evaluation course emerges. As it is stated before, the departments from which the pre-service teachers graduated varies both for faculty of education and other faculties. Besides the variation of departments from which the pre-service teachers graduated, there is a variation in the admission score types of this departments which can be categorized as quantitative, qualitative and equally-weighted score types. Regardless of this various conditions, all the pre-service teachers have to take same certificate courses. When the general structure of the courses in the certificate program is reviewed, it can be seen that they are mostly qualitative in content. And it can be said that most of the pre-service teachers graduated from departments which make admissions according to qualitative and equally-weighted scores. When the content of the educational measurement and evaluation course was revised, it can be observed that it requires not only qualitative and equally-weighted skills but also the skills of making quantitative calculations. The educational measurement and evaluation course requires not only assessing validity and reliability but also calculating the item and test statistics. Because educational measurement and evaluation course requires quantitative calculation skills, this can affect the attitudes of the pre-service teachers who graduated from qualitative or equally-weighted departments negatively. Because of the required mathematical prior knowledge for Mathematics and Statistic courses, the anxiety rises and the attitude decreases towards these courses (Köklü 1994, 1996; Köklü ve Büyükoztürk 2000). In educational measurement and evaluation course, the same prior knowledge is a prerequisite, hence it is expected to affect anxiety and attitudes in the same manner. Strictly speaking, requiring quantitative calculations makes the attitudes of most pre-service teachers towards educational measurement and evaluation course negative. Additionally, they feel themselves inefficient or their self-efficiency decreases. Kılınç, (2011) according to findings in his study, he got the result that the lack of the mathematical knowledge and skills cause pre-service teachers to think themselves inefficient in terms of knowledge and application. And there are other study results that teachers who have to use measurement and evaluation processes along their vocational life have low proficiency levels in this processes. (Gelbal and Kelecioğlu). Some studies mentioned about results that the attitude level varies according to demographic characteristics rather than reporting low attitudes. According to these studies, while the distribution of the attitude scores towards educational measurement and evaluation course shows centered characteristics, it differs when it is considered according to demographical characteristics. For example, as demographic characteristics such as gender, vocational experience and graduation from faculty of education vary, it is stated that teachers' or pre-service teachers' attitudes differ significantly. But while in some studies the differences related to pre-service teachers' demographic characteristics is found significant, in some studies it isn't found significant or the significance that is found for characteristics differs (Akçadağ, 2010; Erdoğan, 2010; Pektaş, 2010; Ören, Ormancı and Evrekli, 2011; Kart and Gülleroğlu, 2010). The inconsistent results got from literature review and the claims that both pre-service teachers' attitude level towards educational measurement and evaluation course can change according to demographic characteristics and also the

level is low, led us to think that conducting the similar studies can be beneficial. So in the light of these explanations, this study seeks to answer the following questions:

- 1) How are the pre-service teachers' attitudes towards educational measurement and evaluation course?
- 2) Does the pre-service teachers' attitudes towards educational measurement and evaluation course differ according to their demographic characteristics?

2. Method

The research is planned as a descriptive study as it aims to determine whether the scores got from the attitude scale according to demographic characteristics differ significantly or not.

2.1. Population –Sample

It can be said that the universe of the study consists of students who get a certificate to be a teacher as they want to be. In this sense, it is not possible to determine the exact number of individuals. Because, there are faculty of education students and there are students who are from another faculties taking the certificate courses and also there are already graduated students who wants to have a certificate. Despite all, it can be said that the size of the population can be expressed by one hundred thousand's. Convenient sampling technique is used in the study. The sample of the study is consisting of 214 willing pre-service teachers who registered to some KPSS private training centers in Ankara. When the demographic characteristics of the pre-service teachers are viewed, it is seen that the range of the number of brothers /sisters is 11 (minimum 0 maximum 11); the range of the graduating year is 13 years (minimum 2001, maximum 2014). On the other hand it is determined that the participants graduated from 35 private or public universities and 33 different departments. 3% of the participants have children. And it is found that during their undergraduate education period, 40% of the participants have high; 54% medium and 6% low success level. The 76% of participants said that they go to KPSS private training centers only once while 20% twice and 4% three times. Among the participants 3% of them are married, 97% are not married. While the 85% of the participants have positive attitudes, 15% of them have negative attitudes towards their jobs. The average of the participants' ages is 23,61, the average of their GPA is 3,02 and the average of their monthly salary is 1096 TL. Finally 11% of the participants work while 89% of them do not work.

2.2 Data Collecting Instruments

The data collecting instrument that's been used in the study was developed by the researchers. The data collecting instrument consists of two parts. The first part is the personal information part that contains questions about demographic characteristics. The second part is the attitude scale that used in education for measurement and evaluation. The scale is an attitude scale towards measurement and evaluation. The attitude scale is "attitude scale towards educational measurement and evaluation course" which was developed before the data of the main study collected and also the reliability and the validity are assured. While the attitude scale being developed, the literature was viewed and 176 attitude scale studies whose items published were revised. 98 of scales were developed with the aim of measuring the attitude to 36 different courses from primary school to university. 2128 explanations in these scales' items were searched and the frequency of the explanations was tabulated. 22 items which has the highest frequency were chosen and transformed into attitude explanations for educational measurement and evaluation course. The preliminary scale form consist of 22 items were applied on 350 candidate teachers who have taken educational measurement and evaluation course. An exploratory factor analysis was conducted on the preliminary data. According to exploratory factor analysis findings, the KMO rate was found as 0, 93. That rate shows that sample size is fairly sufficient for factor analysis. The Bartlett test results that are found in factor analysis process (Chi-square = 3334,38; $p < 0,001$) informs that we can extract at least a meaningful dimension from these items. The average of these items changes between 2,35 and 3,57 and the standard deviation changes between 1,15 and 1,44. From the three factors which have an eigenvalue greater than 1 the first factors' value is calculated as 10,41(47,31%), the second as 2,50(11,38%) and the third as 1,44(6,56%) respectively. According to the large

difference between the first and second factors' eigenvalue, it can be said that the scale is unidimensional. To support the unidimensionality claim, the loadings of the items to the first factor were revised and it was observed that the 2nd items' loading to the first factor was 0,36; the 20th items' was 0,56 and other items' loadings change between 0,61 and 0,81. Because the 2nd items' loading to the 3rd factor was 0,59 and the 20th item's loading to the 2nd factor was 0,56 these items were discarded from the scale and the final scale was constituted with the 20 remaining items as a unidimensional scale. The Cronbach-alpha value for 22 and 20 items found 0,94 and 0,95 respectively. This reliability values interpreted as evidence that the scale will give unidimensional, homogeneity and reliable results.

2.3. Data Analysis

In the data analysis process, firstly the descriptive statistics were used for determining the attitude level of pre-service teachers towards educational measurement and evaluation course. Secondly, from the parametric tests the t test and ANOVA techniques were used to find out whether the students' attitude changes according to demographic characteristics. Kolmogorov-Smirnov normality and Levene's equality of variance tests results that were run to find out whether the distribution of the data is appropriate or not for the parametric tests showed that it is convenient to use parametric tests.

3. Findings

To give an answer to the first question of the study which was determining at which level is the pre-service teachers' attitude level towards educational measurement and evaluation course, descriptive statistics were used. The descriptive statistics related to students' attitude scores is given in Table 1. When table 1 is examined, it can be seen that the average and median of the pre-service teachers' attitude levels is close to the expected value. Because that the minimum and maximum scores can be 20 and 100 respectively, it is expected that depending on a normal and symmetrical distribution the expected average and median must be close to 60. So indeed, it can be seen that the average and median calculated for students scores is close to 60. The coefficient of skewness that calculated for attitude scores is close to 0 and average and median is close to each other. This shows that the distribution nearly has a symmetrical characteristic. These results give the idea that the scores aggregated around the center of the distribution. On the other hand the findings that the coefficient of kurtosis is negative and nearly 0.50, shows that the distribution of attitude scores is unimportantly kurtic. But when all of the statistics interpreted together it can be said that the distribution of attitude scores is close to normal; the students' attitude towards educational measurement and evaluation course is at medium level and the group is unimportantly heterogeneous.

Table 1. Descriptive statistics of attitude scores

Statistics	Value
N	214
Mean	59,05
Median	60
Std. Deviation	18,06
Skewness	-0,02
kurtosis	-0,43

For the second question of the study, t test and one way ANOVA was run based on the category number of the independent variables in order to find out whether the students' attitude towards educational measurement and evaluation course differs according to demographic characteristics. Independent samples t test was used to determine if the pre-service teachers' attitude scores towards educational measurement and evaluation course differs according to their gender. According to results of the t test conducted for gender ($t=-1,58$; $p=0,12$), it can be said that the mean of the women ($n=165$; $\bar{X}=57,98$; $s=18,75$) equals to men's mean ($n=49$; $\bar{X}=62,61$; $s=15,16$). According to results of the t test that is conducted based on the location of the graduated university ($t=2,02$; $p=0,05$), it is found that the

mean of the pre-service teachers' who are graduated from metropolis universities ($n= 157$; $\bar{X}=60,54$; $s=18,48$) equals to the mean of the ones who are graduated from small city/town universities ($n= 57$; $\bar{X}=54,95$; $s=16,34$). One way ANOVA is conducted for determining the possible differences of the attitudes of pre-service teachers based on their graduated departments' admissions score types, that are, qualitative, quantitative or equally-weighted. According to results of the one way ANOVA ($F_{2;206} = 7,76$; $p < 0,001$), it is found that the mean of the pre-service teachers attitudes who graduated from departments which make admissions based on quantitative score ($n= 71$; $\bar{X}=64,62$; $s=16,63$) is significantly different from the mean for qualitative ones ($n= 78$; $\bar{X}=53,32$; $s=18,37$). On the other hand, it is found that the mean attitude score of the pre-service teachers who graduated from departments which make admissions based on quantitative and qualitative scores is equal to the mean of the attitude scores of ones who graduated from departments that make admissions based on equally-weighted scores ($n= 60$; $\bar{X}=60,12$; $s=17,80$).

4. Results and suggestions

According to findings of the study it is found that the distribution of attitude scores towards educational measurement and evaluation course is symmetric and normal. And it also shows that the pre-service teachers have a suitable attitude score distribution compatible with theoretical expectations. At the same time, the mean value of the attitude scores of them is close to the average score which is expected. In other words, the attitude levels of the pre-service teachers towards educational measurement and evaluation course is neither low nor high, but it is at a medium level. On the other hand, there is no significant difference of attitude scores according to gender. Similarly, there is no significant difference in the attitude scores according to location of the university that is graduated from. But the average attitude score of the quantitative departments are higher than the qualitative ones. There is not a difference between the attitude scores of quantitative/equally-weighted and qualitative/equally-weighted groups. So according to these findings, the load of the quantitative calculation processes in educational measurement and evaluation courses should be reduced and subjects (content) of the course should be arranged according to individuals who attend this course to help them be able to use measurement and evaluation in their vocational lives. The studies which will be carried out on attitudes toward measurement and evaluation should be planned in order to find out some psychological characteristics such as anxiety, academic self-esteem and quantitative-qualitative abilities not according demographical properties.

References

- Akçadağ, T. (2010). Öğretmenlerin ilköğretim programındaki yöntem teknik, ölçme ve değerlendirme konularına ilişkin eğitim ihtiyaçları. *Bilgi*, 53: 29-50
- Erdoğan, M. Y. (2010). Öğretmenlerin ölçme ve değerlendirmeye yönelik tutumlarının bazı değişkenler açısından incelenmesi. *International Conference on New Trends in Education and Their Implications*, 11-13 Kasım. Antalya, Türkiye.
- Kart, A. ve Gülleroğlu, H. D. (2013). Demografik ve duyuşsal değişkenlerin ölçme ve değerlendirme dersi başarısını yordama gücü. *YYÜ Eğitim Fakültesi Dergisi*, 10, 1: 11-30.
- Kılınç, M. (2011). Öğretmen adaylarının eğitimde ölçme ve değerlendirmeye yönelik özyeterlik algı ölçeği. *Ahi Evran Üniversitesi, Kırşehir Eğitim Fakültesi Dergisi*, 12, 4:81-93.
- Köklü N. (1994). İstatistiksel sınav kaygısının kestirilmesi. *Eğitim ve Bilim*, 18, 91: 45-49.
- Köklü N. (1996). İstatistik kaygı ölçeği: Psikometrik veriler. *Eğitim ve Bilim*, 20, 102: 45-49.
- Köklü, N. ve Büyüköztürk, Ş. (2000). *Sosyal bilimler için istatistiğe giriş*. Pegem, Ankara.
- MEB (2005a). EARGED PISA projesi 2003 ulusal raporu. MEB basımevi, Ankara.
- MEB (2005b). EARGED ÖBBS projesi (bilgisayar ve İngilizce okuryazarlığı) 2004 uygulama raporları. MEB basımevi, Ankara.
- MEB-ÖBBS 2007, EARGED ÖBBS projesi (Türkçe, Matematik, Fen Bilgisi ve Sosyal Bilgiler) 2005 uygulama raporları. MEB basımevi, Ankara.
- Ölçme, Seçme ve Yerleştirme Merkezi (ÖSYM). (2012). Kamu personeli seçme sınavı lisans başvuru kılavuzu. Accessed from <http://www.osym.gov.tr/belge/1-13388/2012-kpss-lisans-basvuru-bilgileri-09042012.html> in December 2013.
- Ören, F. Ş., Ormancı, Ü. ve Evrekli, E. (2011). Fen ve teknoloji öğretmen adaylarının alternatif ölçme-değerlendirme yaklaşımlarına yönelik öz-yeterlilik düzeyleri ve görüşleri. *Kuram ve Uygulamada Eğitim Bilimleri*, 11, 3: 1675-1699
- Pektaş, S. (2010). Öğretmen adaylarının ölçme ve değerlendirme yeterlik algılarının incelenmesi. *Yayınlanmamış Yüksek Lisans Tezi*. Abant İzzet Baysal Üniversitesi Sosyal Bilimler Enstitüsü, Bolu.