Pre-Service Teachers' Perception of Distance Education*

Abdullah Yasin GÜNDÜZ
Faculty of Education, Hacettepe University, Turkey
abdullahyasin @gmail.com

Aytekin İŞMAN
Faculty of Communication, Sakarya University, Turkey
isman@sakarya.edu.tr

ABSTRACT
The purpose of this study is to investigate the perception of pre-service teachers towards distance education based on variables such as gender, department, class level, personal computer ownership and possession of internet connection. The study was conducted with participants who continue their education in department of education in a state university and the study group consisted of 455 female and 237 male, in total 692 pre-service teachers. The participants included first, second, third and fourth year students from the departments of primary school education, social sciences education, science and technology education, painting and music education. A scale has been developed by the researcher in order to determine pre-service teachers' perception of distance education and a data set was generated with the responses collected according to this scale. As per the results obtained, the perception regarding distance education did not show any differentiation based on gender, personal computer ownership and possession of internet connection, while a significant difference was observed in respect to department and class level.

Keywords: Distance education, pre-service teacher.

INTRODUCTION

In today's societies, technological developments are paving the way to radical reforms and a dramatic increase in production of information in every field including education. Transfer of existing contents to digital environment and the opportunity to easily share ideas and experiences with the world that individuals have by connecting to internet provided our age to be named after the produced information and technology. In daily life, in an environment where "information society/information age" expressions are widely used, the reason for widespread use of computers, which has become indispensable for information management (storage, compilation, processing), is given as people's need for tools that are capable of doing more computing than human beings to make them able to control and manage the vast amount of information in unit time (Kaya, 1999). The reason for this situation can be stated as the amount of global information is doubling in every five years and in 2020 it is expected to be doubling in every 72 days (Staudt, 2001).

With the use of information and communication technologies in education, it has become easier for countries to search for solution to problems in education and to go beyond conventional methods against intensifying course of education. Especially in Turkey, the most important problem regarding education is the increasing number of students and increasing need for school buildings day by day, parallel to rapid growth in population (İşman, 2011). Population growth brings about renewal of education systems and providing grounds for making use of additional advanced methods. The process continues with provision of these renewed education systems to public service under supervision of relevant authorities thus allowing as many individuals as possible to have chance for access to good quality education within the shortest possible time (Önder, 2002).

In systems where conventional education approach is insufficient, it becomes an obligation to plan radical innovations and a series of transformations in education policies and purposes, in organization and function of educational institutions and in content of education programs (Arslan ve Eraslan, 2003). Because, problems related to economy require provision of economic and high-quality services with limited resources, problems related to social issues require provision of equalitarian and widespread education service, problems related to educational content require transformation of elitist higher education to mass higher education, stereotyped and compulsory processes to flexible and multi optional processes and pre-adulthood education to lifelong learning

*This study is a part of the master thesis of the first author.

(Alkan, 2005). Alkan (1987) has indicated the importance of a better education opportunity, equality in opportunity and lifelong learning as increasing importance of information and education for individual freedom and good life, closing the gap between individuals who received advanced education and individuals who did not receive enough education, increasing need for people who are thinking and doing and existence of a need for continuous learning and high-quality education for everybody.

Countries who cannot fulfil this need via conventional methods has revised their education programs according to changing and developing needs of society, headed towards distance education systems by effective use of technology in the field of education and made considerable progress in terms of equality in opportunity and lifelong learning. According to Çetin (2010), when the justifications for necessity of distance learning are reviewed, the aspects drawing attention include equality it provides in terms of opportunity, lower costs, to be able to provide education in line with the needs for every age group, achieving a higher number of learners therefore contributing to communication between individuals and cultural integration.

Defined as an institutional education activity in which student, teacher and educational materials in different locations are brought together via communication technologies (Simonson, Smaldino, Albright ve Zvacek, 2009), distance education can be said to have laid its foundation on scientific developments in the field of education, technological developments, increase in demand for education, and the fact that cost of education has become a problem.

With distance education, not only academic institutions has changed their physical burden (huge buildings, etc.) but also the students have obtained the opportunity to learn without leaving the comfortable environment of their home or office. Hardware that are able to carry data in high capacities and portable computers took the place of books in no time and online classrooms and libraries created over Internet took the place of traditional school buildings and libraries (Shachar ve Neumann, 2003). The interest toward distance education in Turkey, however, is based on lack of high-quality education that will allow permanent learning in line with interests and talents, insufficiency of physical infrastructure, rapid population growth, cultural factors in some regions and economic reasons that result in lower rates of participation to education or higher rates of absenteeism which can be handled by distance education applications (İşman, 2011).

For this reason, teachers and pre-service teachers who are actively involved in or will take an active role in the distance education process should be informed about the mechanism, benefits, limitations and outcomes. The spread of distance education, the establishment of distance education centers and initiation of undergraduate and graduate educations especially in the universities in Turkey are deemed important for understanding the distance education perception.

THE STUDY

In this descriptive research, it is aimed to determine whether the distance education perceptions of pre-service teachers differ according to their gender, department, class levels, possession of personal computer and having internet connection. In this regard, a survey model suitable for the feature of the subject, the purpose of the study and the study group was used. In the research, a study group was formed by applying the convenience sampling method which is one of the purposeful sampling method types. The study group from which the data were collected comprised of 692 volunteers among 1473 pre-service teachers registered to first, second, third and fourth grades of primary school teaching, Turkish language teaching, social sciences teaching, art and music teaching programs in the education faculty of a state university during the academic year of 2012-2013.

The “Distance Education Perception Scale” developed by the researcher was used as data collection tool in the research. The developed scale consists of two parts. In the first part, personal information are given including gender, class, department, computer and internet connection options. In the second part of the scale, there are expressions for pre-service teachers to determine their views on distance education perception. These expressions were scaled in five categories: Strongly Disagree, Disagree, Undecided, Agree, Strongly Agree. The 33-item form prepared for the pilot application of the scale was applied on 185 pre-service teachers and by selecting the convenience sampling since the sample was not intended to represent the universe.

Findings Related to Validity of the Scale

Construct validity of the scale was tested with factor analysis. For this purpose, it was first examined whether the data obtained from the trial application were suitable for factor analysis. Kaiser-Meyer-Olkin (KMO) measure of adequacy value, which is calculated based on the KMO and Bartlett test results showing whether the data are suitable for factor analysis, was 0,83.Tavşancıl (2010) stated that factor analysis cannot be performed below a critical value of 0.50. Comparing with the critical value, it is concluded that Kaiser-Meyer-Olkin value of the

scale is High Level 0.80-0.90 (Çokluk, Şekercioğlu ve Büyüköztürk, 2010). The Bartlett Sphericity Test calculated for the same data is 858,87 and significance level is 0.01 (X2190 = 858.87). These values show that the data obtained from the trial application can be subject to factor analysis.

When the results of factor analysis are examined using the principal component analysis, there are two factors greater than the value of 1. These two factors account for 34,64% of the total variance. Taking into account the initial eigenvalues, the fact that the eigenvalue of the first factor (5,01) is much higher than the eigenvalue of the second factor (1,92) can be interpreted as the scale has a general factor as a whole. Therefore, the transformation technique is not used and the data is considered as one dimension. The variance explained by a single dimension is 25,04% of the total variance.

The factor loadings of the items range from 40 to 62. According to these factor loading values, the scale is one dimensional and all items have a factor loading value that can be on the scale. Factor analysis was performed on the 33-item scale and 13 items were excluded from the study because they were below the limit factor loading value, which was determined as 40. According to Tabachnick and Fidell (2001), in case the factor loading value of each item is the critical value which is 0,40, the scale is considered as "moderate" (Akt. Çokluk, Şekercioğlu and Büyüköztürk, 2010). To increase the explanatory variance of the identified factor, a factor load of 40 was defined as the limit value. 20 items higher than the limit value of 40, which are collected in one factor, form the final scale form. In the final scale form, there are 17 items with positive qualities and 3 items with negative qualities.

When the correlation values are considered, it can be said the feature that can be measure by the general scale is the same as the feature that is measure by each of the items therefore all items have the qualification to be included in the scale. The total of t values obtained as a result of the analysis carried out by comparison of the means of responses to each item given by the participants among 27% (n=50) upper segment and 27% (n=50) lower segment, are significant at a level of 0,05. This is important in terms of demonstrating that all items are capable of distinguishing between the ones who have the feature that is sought to be measured by that item and the ones who do not have it.

Findings Related to Reliability of the Scale

For the reliability of the scale, Cronbach alpha internal consistency coefficients of the selected items were examined regarding each dimension and whole of the test. Cronbach alpha internal consistency coefficient of the scale was found to be 0,84. It can be concluded based on this value that the scale has internal consistency at acceptable level.

Independet Sample T-Testi was employed for the analysis of pre-service teachers' gender, personal computer possession and having internet connection, and One-Way Anova analysis was employed for class levels and departments. Findings obtained in the research were interpreted as follows: a pre-service teacher who obtained higher points for distance education perception has a higher perception level while a pre-service teacher who obtained lower points has a lower perception level.

FINDINGS

In this section, the responses of the pre-service teachers to the items in the distance education perception scale were evaluated, and it was investigated whether there is statistically significant difference in terms of variables: gender, department, class, personal computer possession and internet access. The findings obtained were considered as 95% reliable with a 5% error margin level, i.e. p<0, 05 (Büyüköztürk, 2011).

When the significance test (t-test) results were examined for the difference between the two means regarding the effect of gender on the distance education perception level, it was concluded that there was not significant difference between the distance education perception level of male pre-service teachers (X =52,24) and the female pre-service teachers (X =51,26), according to t(690)=1,06; p>,05. Therefore it can be stated that the pre-service teachers' distance education perception does not vary according to gender.

However, when the results of One Way ANOVA analysis carried out for determination of distance education perception levels of pre-service teachers based on department of participants were reviewed, it was observed that distance education perception levels of pre-service teachers displayed a significant difference based on department of participants, according to F(5-686)=3,69, p<,05. As a result of Tukey multiple comparison test, the following were found;

- The distance education perceptions of the pre-service teachers who are studying in the department of

Social Sciences Teaching (X = 49,01) are significantly lower than the distance education perceptions of the pre-service teachers who are studying in Science Education Department (X = 53,39).

- Again, the distance education perceptions of the pre-service teachers who are studying in the Department of Social Sciences Teaching (X = 49,01) are significantly lower than the distance education perceptions of the pre-service teachers who are studying in the Department of Primary School Teaching (X = 53,34).

When the results of the one way ANOVA analysis that was conducted in order to determine the distance education perception level according to the class variable in which the pre-service teachers had studied were examined, it is observed that distance education perceptions differ significantly according to the class levels of the participants (F (3-688) = 16,58, p <,05). Tukey multiple comparison test was used to see for which departments there is significant difference based on class level variable. This significant differences according to the test result are as follows:

- The distance education perception of the pre-service teachers in the first grade (X =48,94) is significantly lower than the distance education perception of the pre-service teachers in the second grade (X =55,21).
- The distance education perception of the pre-service teachers in the first grade (X =48,94) is significantly lower than the distance education perception of the pre-service teachers in the fourth grade (X =54,82).
- The distance education perception of the pre-service teachers in the third grade (X =49,03) is significantly lower than the distance education perception of the pre-service teachers in the fourth grade (X =54,82).
- The distance education perception of the pre-service teachers in the third grade (X =49,03) is significantly lower than the distance education perception of the pre-service teachers in the second grade (X =55,21).

When the results of the two mean difference significance test (t-test) which was conducted to determine the distance education perception levels according to the personal computer possession variable of the pre-service teachers, are examined; it is observed that there is no significant difference between the distance education perceptions of pre-service teachers who have personal computer (X = 51,73) and the distance education perceptions of pre-service teachers who do not have personal computer (X = 51,26), according to t(690)=,48, p>,05.

When the results of the two mean difference significance test (t-test) which was conducted to determine the distance education perception levels according to the internet access variable of the pre-service teachers, are examined; it is observed that there is no significant difference between the distance education perceptions of pre-service teachers who have access to internet (X = 51,40) and the distance education perceptions of pre-service teachers who do not have access to internet (X =51,81), according to t(690)= -,46, p>,05.

CONCLUSIONS

In the first sub-problem of the study, distance education perceptions of the pre-service teachers were examined in terms of gender variable, and as a result of the analyzes carried out, no significant difference was found in terms of gender. This can be understood as a reflection of the fact that distance education has a common influence on pre-service teachers without any effect of gender.

In the second sub-problem of the study, distance education perceptions of the pre-service teachers were examined in terms of department variable, and as a result of the analyzes carried out, a significant difference was found in terms of department. Accordingly, the distance education perceptions of the pre-service teachers who are studying in Social Sciences Teaching Department were found to be lower than the distance education perceptions of the pre-service teachers who are studying in Science Education Department. In addition, distance education perceptions of the pre-service teachers who are studying in Social Sciences Teaching Department were found to be lower than the distance education perceptions of the pre-service teachers who are studying in the Department of Primary School Teaching.

In the third sub-problem of the study, distance education perceptions of the pre-service teachers were examined in terms of class level, and as a result of the analyzes carried out, a significant difference was found in terms of class level. Accordingly; distance education perceptions of pre-service teachers who are studying in first grade are found to be lower than distance education perceptions of pre-service teachers who are studying in second grade and again, distance education perceptions of pre-service teachers who are studying in first grade are found

to be lower than distance education perceptions of pre-service teachers who are studying in fourth grade. On the other hand, distance education perceptions of the third grade students were found to be lower than distance education perceptions of fourth grade students, similarly, distance education perceptions of the third grade students were lower than distance education perceptions of the second grade students. Based on these results, it is concluded that distance education perceptions of pre-service teachers who are studying in second and fourth grades are higher than distance education perceptions of first and third grade pre-service teachers. This situation may be thought to be arising from the fact that the pre-service teachers of second grade are encountering concepts such as distance learning and e-learning within the scope of Computer I and Computer II courses of at the second grade level, and that pre-service teachers in the fourth grade have chance to experience distance education by attending various private courses (certificate programs, KPSS preparation, etc.).

In the fourth sub-problem of the research, distance education perceptions of the pre-service teachers were examined in terms of personal computer possession, and as a result of the analyzes carried out, no significant difference was found in terms of personal computer possession variable. That is, the distance education perceptions of the pre-service teachers do not show any significant difference according to the possession of the personal computer.

In the last sub-problem of the research, distance education perceptions of the pre-service teachers were examined in terms of having internet connection, and as a result of the analyzes carried out, no significant difference was found in terms of having internet connection. That is, distance education perceptions of pre-service teachers do not differ significantly according to the variable of having internet connection.

REFERENCES

Alkan, C. (1987). Açıköğretim "Uzaktan Eğitim Sistemlerinin Karşılaştırmalı Olarak İncelenmesi". Ankara: Ankara Üniversitesi Basımevi.

Alkan, C. (2005). Eğitim Teknolojisi. Ankara: Anı Yayıncılık

Arslan, M. M. ve Eraslan, L. (2003). Yeni Eğitim Paradigması ve Türk Eğitim Sisteminde Dönüşüm Gerekliliği. Millî Eğitim Dergisi, 160, 89-105.

Büyüköztürk, Ş. (2011). Veri Analizi El Kitabı. Ankara: Pegem Akademi.

Çetin, O. (2010). Fen ve Teknoloji Dersinde "Çoklu Ortam Tasarım Modeli'ne Göre Hazırlanmış Web Tabanlı Öğretim İçeriğinin Öğrenci Başarı ve Tutumlarına Etkisi ile İçeriğe Yönelik Öğretmen ve Öğrenci Görüşlerinin Değerlendirilmesi. Yayınlanmamış Doktora Tezi. Dokuz Eylül Üniversitesi Eğitim Bilimleri Enstitüsü: İzmir.

Çokluk, Ö., Şekercioğlu, G. ve Büyüköztürk, ġ. (2010). Sosyal Bilimler İçin Çok Değişkenli İstatistik: Spss ve Lısrel Uygulamaları. Ankara: Pegem Akademi.

İşman, A. (2011). Uzaktan Eğitim. Ankara: Pegem Akademi.

Kaya, Z. (2002). Uzaktan Eğitim. Ankara: Pegem A Yayıncılık.

Önder, H. H. (2002). Uzaktan Eğitimde ICAI ve Yapay Zekâ Programlama Teknikleri. Açık ve Uzaktan Eğitim Sempozyumu, Anadolu Üniversitesi, Açık Öğretim Fakültesi.

Shachar, M. ve Neumann, Y. (2003). Differences Between Traditional and Distance Education Academic Performances: A Meta-Analytic Approach. International Review of Researchin Open and Distance Learning, 4 (2).

Simonson, M., Smaldino, S., Albright, M. ve Zvacek, S. (2009). Teaching and Learning at a Distance: Foundations of Distance Education. Upper Saddle River, NJ: Pearson Education, Inc.

Staudt, E. (2001) The Future of Learning-Learning for the Future: Shapping teh Transition. 20th World Conference on Open Learning and Distance Education. Düsseldorf.

Tabachnick, B. G. & Fidell, L. S. (2001). Using multivariate statistics.

Tavşancıl, E. (2010). Tutumların Ölçülmesi ve SPSS ile Veri Analizi. Ankara: Nobel Yayın Dağıtım.