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# Determining in-service training programs' characteristics given to teachers by conjoint analysis

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## Abstract

The aim of the study is to determine what kind of an in-service teacher training program teachers want, in other words to determine how is the ideal in-service education according to the teachers. As it is aimed to expose the existing situation it is a descriptive modeled study. Quantitative research method has been used for the data collection, data analysis, and interpretation of the data. Analyzing the data conjoint analysis has been used and these analyses have been done with SPSS 11, 5 packet program. In addition in the study it has been researched whether the expectations of the teachers from an in-service teacher training program change according to gender and working experience of them.

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*Keywords:* In-service teacher education; elementary school teachers, training programs; expectations of the teachers; conjoint analysis.

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## 1. Introduction

While the improvement of the knowledge and the development of the technologies have caused fundamental and radical changes of the human life they have made the need for qualified man power necessary. Keeping up the changes and catching up these changes have become the purpose of the all countries and this situation brings the lifelong learning foreground. Thus to work more productively and teach according to times necessities teachers, who take the responsibility of the brought up qualified man power all countries needed, should be trained and become sufficient in their jobs. When it is thought that education is always important, the teachers are the important members of the process of education who are responsible for growing the society and the individuals directing the society and the quality of any educational system cannot be better than the quality of its teachers. So the teachers should be develop themselves all the time and become a professional teacher. Developing teacher qualifications and having them a professional identity can not only be through pre-service teacher education program but also through the integration of the pre-service teacher education and in-service training program (Saban, 2000).

In-service teacher education has recently been a topic of considerable interest in the education professions. In reviewing the literature, there are many different ways in which to define in-service education. According to Gusky (1986), in-service education programs “are a systematic attempt to bring about change -change in the classroom

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practices of teachers, change in their beliefs and attitudes and change in the learning outcomes of students". When the definitions in the literature review are investigated, many common points about these definitions can be seen. In this way in-service education will be defined simply as any program or activity designed to have a positive influence upon the teaching and learning that is occurring within the school (Desmarais, 1992). In-service education similar to preparatory education is composed of both professional and subject matter education were considered to be of equal importance and thus both were included. The importance of planning in-service education to meet particular conditions of the educational system and the needs of teachers is also of prime importance (Brantner, 1964).

There is a general agreement that teachers need to be supported in their new role as facilitators of inclusion (Symeonidou & Phtiaka, 2009). In this sense, one of the Ministry of National Education's role is to provide teachers education which they need through the in-service training. The basic purpose of the in-service training is to enable individuals to be successful in their professions, to develop professionalism, to make their adaptation to the changes and novel situations in their professional life and to improve their required performances to meet the students' needs (Küçüksüleymanoğlu, 2006; Uşun, 2004; Hite & Howey, 1977). In the past fifteen years, however, a great deal of research has gone into defining what characteristics make up effective inservice education programs. Some of the characteristics differ from study to study. Researches suggest that inservice education programs should be designed to investigate behavior and programmatic changes that improve the quality of instruction within the school (Baden, 1979; Mchaney & Impey, 1988). Besides by knowing what teachers must do to perform their teaching duties well and to improve their performance and what teaching quality students and the community demands, training needs can be determined and relevant training programs can be designed (Valle, 1982; Özen, 1995).

In-service education includes all the experiences that teachers acquire after they start their professions (Hite & Howey, 1977). When inservice provides the opportunity to learn information or techniques that have the potential to improve job performance, this is a powerful motivator to the staff (Desmarais, 1992). As Bonstingl (1996) stated in-service training is thought to be one of the tools to develop quality in education and to increase the effectiveness of teachers. The quality of in-service education programs could be defined as identifying the expectations and needs of participants before these programs start, meeting their identified expectations and needs during these programs and providing various opportunities to their involvement to the various levels of these programs (Özen, 1995). In this perspective, the preparation of in-service education programs according to the needs and expectations of the participants will make it easier to achieve the required knowledge, skill and attitude. In addition to the determination of objectives according to the needs, the success of the program will be inevitable if the objectives are supported with appropriate methods and activities (Küçüksüleymanoğlu, 2006). Therefore, each step should be planned carefully during the in-service training (Symeonidou & Phtiaka, 2009). Furthermore, it is crucial that in-service training programs be steady and continuous so that training can be beneficial (Küçüksüleymanoğlu, 2006; Tekin & Ayas, 2006; Akar, 2007).

It is necessary that the research upon the issues be comprehensive and accurate so that primary and secondary schools in Turkey could make the right decisions about the development and the quality of the programs. Although there is a great deal of research on the features of the effective in-service training programs carried out at schools, the number of the studies about the opinions of teachers on in-service training is very limited. Since teachers are the individuals who take part in the process directly, it is important to elicit their opinions about the issue. In-service training programs should be reconstructed taking the expectations and needs of the teachers into consideration and these should be made applicable. In this content, the aim of this study is to determine what kind of an in-service teacher training program teachers want, in other words to determine how is the ideal in-service education according to the teachers. For this aim, by determining teachers' expectations from in-service education suggestions have been made in order to increase the quality of education.

## **2. Method**

As it is aimed to expose the existing situation it is a descriptive modeled study. Quantitative research method has been used for the data collection, data analysis, and interpretation of the data. Teachers who work in Ankara have been selected randomly for the research as the sample of the study. In order to expose teachers' expectations from the in-service education a conjoint questionnaire has been prepared. In this context, firstly literature was reviewed while developing conjoint survey. The features of the in-service training programs were determined using the related sources and taking the teachers' opinions and these features were turned into the items of the survey. Afterwards, the

importance order of these features was made from the teachers' perspective. Thus the characteristics that should be in an in-service teacher training program have been determined according to the acquired results. Survey items were discussed with the expert after preparing the survey items to finalize the survey and required changes were made. The Cronbach Alpha inter consistency coefficient of the conjoint survey used in the study was found to be 0,91. The obtained reliability coefficient is quite high.

Analyzing the data conjoint analysis has been used and these analyses have been done with SPSS 11,5 packet program. The most striking feature of conjoint analysis is to compare the qualities in terms of quantities. In this analysis, it is diagnosed whether a feature is really required to discard another feature; or if a feature is to be discarded, which feature will be discarded so that useful and sensitive knowledge can be reached. The following steps should be followed in the study to be able to implement conjoint analysis and make it optimal (Tatlıdil, 1995):

1. The determination of all features of the good or service
2. The determination of all levels related to all features
3. The preparation of the conjoint survey
  - a. With trade-off method: Collecting information taking two features into account each time.
  - b. With full concept method: Collecting information taking all features into account at the same time
4. The implementation of the prepared conjoint survey
5. Finding utility coefficient of levels related to all features
6. The determination of general and group consume models

In this study, the implementation of conjoint analysis was carried out as follows. Firstly, the features of in-service training (factors) and after that levels related to all factors were determined. These factors and levels are given in Table 1. When the levels of the factors are examined, it can be seen that  $2 \times 4 \times 5 \times 3 \times 4 \times 3 = 1440$  probable combination is available. However, as it was not possible to order 1440 combination in a reliable and accurate way, 25 combination was formed taking the main effects into consideration at orthogonal level with Syntax editor in SPSS program.

Table 1. The features of in-service training and the levels of these features

Features	Level 1	Level 2	Level 3	Level 4	Level 5
Who decides the training	Teachers	Ministry of National Education			
Who provides the training	Teacher	Teacher with MA degree	Teacher with PhD degree	Expert	
When the training should take place	After school	At weekends	On holidays	In seminars	During the courses
What kind of training should it be	Through presentation method	Applied	In which the teachers are taking part actively		
Where should it be	At school	In the same province with the school	In the same city with the school	In another city	
How should the topics be determined	According to the lack of teachers	According to the teachers' interests	According to the teachers' needs		

The prepared conjoint survey was applied to 131 teachers from each branch. Teachers were asked to order the features of in-service training programs using 25 cards in a way that they give number 1 to the one which they prefer most and they give number 25 to the one which they prefer least. The conjoint analysis was applied to the results of the survey applied to the teachers using the appropriate program in Syntax editor of SPSS program. The features of in-service training quality and the utility coefficients related to these features and the expected score values of the features indicated with Pearson's R and Kendall Tau coefficients were obtained. In addition in the study it has been researched whether the expectations of the teachers from an in-service teacher training program change according to gender and working experience of them.

### 3. Results (Findings)

The expectations of teachers who participated into the study were found to like the following. The most important feature of in-service training programs is when the training is done with a ratio of 26,045 %. When the time of the in-service training program is taken, in seminar is preferred most with a utility coefficient of 1,525. In

the second row, the place of the training takes place. The first row about the place of the training is the same province with the school with a utility coefficient of 0,665. In the third row, the person who gives the in-service training is important with a ratio of 18,812 %. When the person who gives the in-service training is taken into consideration, teachers with PhD degree take place. In the fourth row, it is important how the training should be with a ratio of 14,123 %. When the method of training is taken into consideration, a method in which the teachers take part actively is in the first row. The other factor which is important is the topic of the training with a ratio of 12,949 %. When the topic of the training is taken into account, the interests of teachers take place with a utility coefficient of 0,377. Finally, the least important factor is about who decides the topic of the in-service training program with a ratio of 8,365 %. When this factor is taken into account, teachers take place with a utility coefficient of 0,303.

According to the results of the study, an ideal in-service training can be defined as a training which is given by a teacher with PhD degree, in which the teachers take part actively, in which the topics are determined according to the teachers' interests, in which the topics are determined by the teachers, which is held in the same province with the school and which is given during the seminar. When the appropriateness of this model to the individuals preferences was examined, it could be seen that Pearson's  $R=0,939$   $p=0,000$ , Kendall's  $\text{Tau}=0,773$   $p=0,000$ . According to Pearson R statistics and Kendall's Tau relationship coefficient, there was a significant relationship between the model which was planned according to the expectations of teachers from the in-service training program and the observed results at the ratio of 0,94.

The following results were obtained when it was asked whether there was a significant difference in the results related to the expectations of teachers from the in-service training program according to the gender and experience years. According to 54 male teachers participated into the study, the most important features were as follows in an order of importance: the time of the training (in seminars), the place of the training (city centre), the person who gives the training (a teacher with PhD degree), the method of the training (applied), how the training should be determined (according to the interest) and who decides the training (teachers). The order of importance made by female teachers was similar to the one made by male teachers; but, some levels differed. 77 female teachers stated that they preferred a training which was held in the same province with the school, in which they participated actively and in which the topic was determined by the Ministry of National Education and these were different from the expectations of the male teachers.

When the experience of the teachers was taken into account, the analysis results of the experienced teachers were similar to the ones of female teachers. However, less experienced teachers' results were somehow different from the other analysis results. Although the levels of analysis results carried out with female teachers, male teachers and experienced teachers were different; their order of importance was the same. The first factor that less experienced teachers gave importance was the time of the in-service training program. Whereas the second most important feature for female teachers, male teachers and experienced teachers was the place of the training, less experienced teachers stated that the second most important feature is the person who gives the training. Moreover, although the other groups preferred the person with PhD degree, less experienced teachers preferred the person with MA degree. In all groups, the fourth most important feature is the method of the training. While male teachers preferred the applied method, the other groups preferred the training in which they actively take part. All groups were in agreement with each other on the fact that the in-service training should be determined according to the interests. The least important feature teachers mentioned was who decides the topic of the training. While experienced teachers, female teachers and male teachers stated that the topic should be determined by the Ministry of National Education, male teachers and teachers in general thought that they should decide on topic themselves.

#### **4. Discussion, Conclusion and Recommendation**

Conjoint analysis is seen as a combined method in which many statistical method are used together and which examines the relations among the features and individuals and their interactions with their environment. In this study, it was attempted to determine the quality of the in-service training by means of conjoint analysis. According to the results, teachers firstly stated that the training should be held in seminars and then it should be held in the same province with the school. Teachers perceived the seminar times as a waste of time and they wanted to spend this time more effectively and this could be reason why teachers preferred this. This finding of the study is consistent with the findings of Briers & Edwards's (1998) study which was that 69% of teachers wanted to participate in-service training in their hometown. Based on this finding, it could be recommended that the in-service

training programs be organized in provinces where teachers work. After that, another point that was paid attention was the fact that the person who gives the training should be a teacher with PhD degree; in other words, a person who is an expert on the issue. This finding is consistent with the findings of the studies carried out by Briers & Edwards (1998) and Özen (2004). Based on this finding, it can be stated that it will be more effective if experts give this training. When examined in general, the reason why teachers preferred teachers with MA or PhD degree instead of only teachers or only experts could be the fact that they thought that they understand them better. That is, teachers did not prefer experts because they thought that they do not understand them; and teachers did not prefer only teachers because they thought that they do not have enough information in the field. In the next row, teachers prefer a method in which they actively take part. None of the groups wanted lecture type training and they did not believe it was useful and adequate. This finding of the study is consistent with the finding of the study carried out by Özen (2004). Finally, teachers stated that the topic of the training should be decided in accordance with their interests and they wanted to decide the topic. These findings of the study are consistent with the findings of the studies carried out by Küçüksüleymanoğlu (2006), Kaya (2006), Tekin & Ayas (2006), Ünal (2001), Kazu & Kerimgil (2008) and Kanlı & Yağbasan (2001). Based on these findings, it could be recommended that teachers' interests be taken into consideration and teachers take part in the process while preparing an in-service training program. In the light of the findings of this study, it can be stated that in-service training programs should be paid required attention and teachers should be invited to these in-service training programs taking their interests into account. Thus, in-service training programs will be effective and on purpose.

When the results are examined according to the gender and experience level, male and female teacher agreed with other and with general results on the time of the in-service training, that the person who gives the training should be teachers with PhD degree, and that the training should be determined according to the teachers' interests. Participants in general and the female teachers preferred that the training should be in the same province with the school. Similarly, while participants and female teachers thought that they should take part actively in the process, male teachers preferred applied training. Although the topic of the training should be determined by the teachers according to the results in general and the male teachers, female teachers thought that the topic of the in-service training should be determined by the Ministry of National Education.

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