

A Study of the Views of Information Technologies Teachers Regarding In-Service Training

Halit Arslan, Ismail Sahin, Ahmet Oguz Akturk, Ismail Celik

Abstract—Today, the means of following the developments in the area of science and technology is to keep up with the pace of the advancements in this area. As is in every profession, apart from their personal efforts, the training of teachers in the period after they start their careers is only possible through in-service training. The aim of the present study is to determine the views of Information Technologies (IT) teachers regarding the in-service training courses organized by the Ministry of National Education. In this study, in which quantitative research methods and techniques were employed, the views of 196 IT teachers were collected by using the “Views on In-service Training” questionnaire developed by the authors of the paper. Independent groups t-test was used to determine whether the views of IT teachers regarding in-service training differed depending on gender, age and professional seniority. One-way analysis of variance (ANOVA) was used to investigate whether the views of IT teachers regarding in-service training differed depending on the number of in-service training courses they joined and the type of in-service training course they wanted to take. According to the findings obtained in the study, the views of IT teachers on in-service training did not show a significant difference depending on gender and age, whereas those views differed depending on professional seniority, the number of in-service training courses they joined and the type of in-service training course they wanted to take.

Keywords—In-service training, IT teachers, professional development, personal development.

I. INTRODUCTION

In today's professional life, the only way of keeping up with the rapid changes in science, technology and education is through innovation. Employees should be open to training in every stage of their professional lives for innovation and self-development. This is because the effective fulfillment of professional responsibilities by employees depends on the condition that they follow the developments regarding their areas and they are in an effort to develop their professional competence in order to keep up with these developments. The rapid developments in science and technology make it compulsory for employees in different professional groups to perform certain activities such as following seminars, courses,

conferences, professional publications and new research in order to improve their knowledge and skills [14]. For this reason, the idea that the training received in the pre-service period would be enough for employees has given its place to the idea that training is necessary throughout professional life.

Guskey [10] defines professional development as those processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators, so that they might, in turn, improve the learning of students. Owen [15] defines professional development as a comprehensive concept that includes various activities for maintaining the individual development of educators in terms of professional knowledge and skills in educational institutions or within the system and for improving the learning of students. One of the most important ways for a teacher continuing the profession for fulfilling the insufficiencies in field knowledge and developing oneself is definitely in-service training activities [16]. That is, in-service training satisfies the needs regarding professional development to a larger extent. According to Can [4], in-service training is activities that aim to increase the efficiency of employees by maintaining their familiarity to their jobs and to improve their knowledge, experience and skills to enable them to perform their future duties and responsibilities more efficiently.

In our country, the authority to carry out the in-service training activities of teachers is given to the Directorate of Professional Development Support Group, which is affiliated to the General Directorate of Teacher Training and Development. Trainings at the central level are planned and provided by the Department of In-service Training and local training activities are planned and provided by Provincial Directorates of National Education [1]. In many other countries, various professional development opportunities are offered to teachers, who are the keystones of education. In some countries, in-service training activities are organized by various institutions such as ministries, universities, institutes, schools, unions and even political parties and churches. Whether the trainings are compulsory and the effects of the trainings on salaries and seniority varies depending on countries. However, it can be said that the common aspect of the previously studied countries is that the activities that offer teachers the opportunity to develop themselves are carried out with care.

The aim of the present study is to examine the views of IT teachers regarding in-service training courses according to the variables of gender, age, professional seniority, the number of in-service training courses they joined and the type of in-service training course they want to take.

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With this purpose, the following research questions were examined:

Do the views of IT teachers regarding in-service training show differences depending on the variables of

- Gender
- Age
- Professional seniority
- The number of in-service training courses they joined
- The type of in-service training course they want to take

II. METHODOLOGY

A. Research Model

In the present study, which was conducted with the aim of determining the views of IT teachers regarding the in-service training activities provided by the ministry of education, a survey model was used as a quantitative research method. Quantitative research methods are procedures that are used for selecting the strongest variables of a study and showing the relationship among the variables [6]. Survey model is a quantitative approach which aims to describe a previous or present situation in the form it exists [13]. In this study, the views of IT teachers regarding in-service training were collected through a questionnaire.

B. Participant

A total of 196 IT teachers participated in the study. The frequency and percentage distributions regarding the demographic characteristics of the participants are presented in Table I.

TABLE I
 DEMOGRAPHIC CHARACTERISTICS OF THE IT TEACHERS THAT PARTICIPATED IN THE STUDY

Teacher Characteristics	Option	n	f (%)
Gender	Male	142	72.4
	Female	54	27.6
Age	Between 20-29	120	61.2
	30 and above	76	38.8
Professional seniority	1-6 Years	117	59.7
	7 Years and above	79	40.3
Number of in-service training courses joined	I did not	35	17.9
	1-2 times	81	41.3
	3 times and above	80	40.8

As it can be seen in Table I, 72.4% of the participants were male teachers and 27.6% were female teachers. 61.2% of the participants were within the age range of 20-29. It can be said that the majority of the teachers (59.7%) who participated in the study were in the early years of their profession. Furthermore, 41.3% of the IT teachers had joined the in-service training courses organized by the Ministry of National Education once or twice. Similarly, 40.8% of the IT teachers had joined such courses three or four times, whereas 17.9% had never taken an in-service training course before.

C. Data Collection Tool

A questionnaire was used as the data collection tool in the present study, which was conducted to examine the views of

IT teachers regarding in-service training. Questionnaire is a systematic data collection method. In the questionnaire method, the data are obtained by asking a range of questions to pre-selected individuals. Using the questionnaire method, it would be possible to collect various types of data, such as human behavior, job performances, preferences, attitudes, beliefs and feelings [12]. In this study, a questionnaire consisting of a total of 28 items was developed by the researchers to determine the views of IT teachers regarding in-service training. As the result of the reliability analysis, three of the 28 items (3, 18 and 22) were excluded from the questionnaire since they decreased the reliability coefficient. For the remaining 25 items of the questionnaire, Cronbach's Alpha reliability coefficient was calculated as .74. A reliability coefficient of .70 or higher calculated for a test is generally considered to be adequate for the reliability of the test scores [3].

D. Data Analysis

Descriptive statistics were used for the analysis of the data collected within the scope of the study. Besides, arithmetic mean, standard deviation and independent samples t-test were used for examining whether the views of IT teachers regarding in-service training showed difference depending on gender, age and professional seniority. Furthermore, One-way ANOVA was used to investigate whether the views of IT teachers regarding in-service training differed depending on the number of in-service training courses they joined and the type of in-service training course they wanted to take and the Scheffe test was used to determine the source of significance. The analysis of the data was performed by using SPSS 17.0 (Statistical Package for the Social Science) Software.

III. FINDINGS

A. Views of IT Teachers Regarding In-Service Training Depending on Gender

The results of the independent samples t-test conducted to find out whether there was a significant difference between the views of IT teachers regarding in-service training depending on gender are presented in Table II.

TABLE II
 VIEWS OF IT TEACHERS REGARDING IN-SERVICE TRAINING DEPENDING ON GENDER

Gender	N	\bar{X}	SD	t	p
Male	142	103.93	8.206	1.000	0.319
Female	54	102.63	7.927		

When Table II is examined it can be seen that there was no statistically significant difference among the views of IT teachers regarding in-service training with respect to gender ($t=1.000, p>0.05$).

B. Views of IT Teachers Regarding In-Service Training Depending on Age

The views of IT teachers regarding in-service training were compared with respect to age by employing an independent

samples t-test. The results of the analysis are given in Table III.

TABLE III
VIEWS OF IT TEACHERS REGARDING IN-SERVICE TRAINING DEPENDING ON AGE

Age	N	\bar{X}	SD	t	p
20-29	120	102.50	7.50	1.157	0.20
30+	76	105.26	8.82		

When Table III is examined, it can be seen that no statistically significant difference was found among the views of IT teachers regarding in-service training depending on age ($t=1.157, p>0.05$).

C. Views of IT Teachers Regarding In-service Training Depending on Professional Seniority

The results of the independent samples t-test conducted to find out whether there was a significant difference among the views of IT teachers regarding in-service training depending on professional seniority are presented in Table IV.

TABLE IV
VIEWS OF IT TEACHERS REGARDING IN-SERVICE TRAINING DEPENDING ON PROFESSIONAL SENIORITY

Professional Seniority	N	\bar{X}	SD	t	p
1-6 Years	117	102.30	7.871	2.709	0.007
7+ Years	79	105.46	8.193		

Table IV shows that a statistically significant difference was found among the views of IT teachers regarding in-service training with respect to professional seniority ($t=2.256, p<0.05$). This result shows that the view scores of IT teachers with a seniority of 7 or more years regarding in-service training ($\bar{X}=105.46$) was higher compared to the scores of IT teachers with a seniority of 1-6 years ($\bar{X}=102.30$). That is, it can be said that the perceptions of IT teachers with a higher professional seniority towards in-service training is more positive.

D. Views of IT Teachers Regarding In-Service Training Depending on the Number of In-Service Training Courses They Joined

The existence of a statistically significant difference among the views of IT teachers regarding in-service training with respect to the number of in-service training courses they joined was examined by conducting a one way analysis of variance (F-test). The results of the analysis are presented in Table V.

TABLE V
VIEWS OF IT TEACHERS REGARDING IN-SERVICE TRAINING DEPENDING ON THE NUMBER OF IN-SERVICE TRAINING COURSES THEY JOINED

Number of in-service training courses joined	N	\bar{X}	SD	F	p	Difference (Scheffe)
I did not (A)	35	98.94	7.29	17.037	<0.01	C>A C>B
1-2 times (B)	81	102.1	7.61			
3 times or above (C)	80	107.1	7.57			

The results of the variance analysis showed that there was a statistically significant difference among the groups in terms of the views of IT teachers regarding in-service training with respect to the number of courses they joined [$F_{(2,193)}=17.037; p<0.01$]. A Scheffe test was performed in order to find out the groups among which there was a significant difference with respect to the number of courses they joined. The results of the Scheffe test showed that the difference detected was between the mean scores of IT teachers who joined an in-service training course 3 times or above and the scores of those who joined in-service training courses 1-2 times and never took such courses. According to these results, it can be said that the number of in-service training courses IT teachers joined is important in increasing the awareness of teachers about in-service training.

E. Views of IT Teachers Regarding In-Service Training Depending on the Type of In-Service Training Course They Want to Take

One way analysis of variance (F-test) was used to find out whether there was a statistically significant difference among the views of IT teachers regarding in-service training depending on the type of in-service training course they wanted to take. The results of the analysis are presented in Table VI.

TABLE VI
VIEWS OF IT TEACHERS REGARDING IN-SERVICE TRAINING DEPENDING ON THE TYPE OF IN-SERVICE TRAINING COURSE THEY WANT TO TAKE

Type of in-service training course they want to take	N	\bar{X}	SD	F	p	Difference (Scheffe)
Central (A)	75	105.15	7.425	14.494	<0.01	A>B C>B
Local (B)	36	93.94	7.132			
Both (C)	85	103.91	7.824			

The results of the variance analysis showed that there was a statistically significant difference among the groups in terms of the views of IT teachers regarding in-service training depending on the type of in-service training course they wanted to take [$F_{(2,193)}=14.494; p<0.01$]. A Scheffe test was performed in order to find out the groups among which there was a significant difference with respect to the type of in-service training course they wanted to take. The results of the Scheffe test showed that the difference detected was between the mean scores of IT teachers who wanted to take local in-service training courses and the scores of IT teachers who wanted to take central and both types of in-service training courses. According to these results, it can be said that the perceptions of IT teachers who wanted to take local courses towards in-service training was lower compared to other participants.

IV. DISCUSSION AND CONCLUSION

We obtained significant results in this study, which we conducted in order to examine whether the views of IT teachers regarding in-service training differed depending on gender, age, professional seniority, the number of in-service

training courses joined and the type of in-service training course the participants wanted to take.

First, it was found out that the views of IT teachers regarding in-service training did not show any difference depending on gender. This finding shows similarity with the findings of the studies conducted on the views regarding in-service training by Gönen and Kocakaya [9], Doğan [7] and Gültekin, Çubukçu and Dal [11]. In the study by Gönen and Kocakaya [9], it was found that there was no significant difference among the views of physics teachers regarding in-service training depending on gender. Similarly, in a study conducted on teachers and school administrators, Dogan [7] found out that the views of teachers regarding the effect of participating in in-service training activities in the education-teaching process did not show any difference depending on gender. Gültekin, Çubukçu and Dal [11] concluded that the gender factor did not have a significant effect on the in-service training needs of teachers. The reason of the finding that there was no significant difference in perceptions on in-service training depending on gender may be based on the fact that in-service training programs are organized regardless of gender. However, different from these findings, Baran [2] found out that the perceptions of female teachers on computer instruction through distance in-service training were higher compared to male teachers. Baran [2] stated that this difference could be based on that female teachers preferred receiving training in their own environments through distance education rather than travelling to another city for in-service training.

Secondly, it was found that the views of IT teachers regarding in-service training differed depending on professional seniority. It can be seen that the perceptions of IT teachers with a professional experience of 7 or more years towards in-service training were higher compared to teachers with less professional seniority. This finding also shows similarity with those obtained about the variable of years of professional seniority in previous studies [2], [5], [8], [11], [17]. That IT teachers with less professional experience consider themselves to be qualified enough depending on the pre-service training they took during their undergraduate studies or the desire of senior teachers to update their knowledge can be listed among the reasons for the finding that the perceptions of teachers about in-service training increase as their professional experience increases. Furthermore, the fact that IT teachers with less seniority joined less in-service training courses in number compared to IT teachers with higher seniority might have affected the perception towards in-service training. For example, in their study Wei, Darling-Hammond and Adamson [17] found that teachers joined a smaller number of in-service training courses during the early years of their professional lives (1-3 years) compared to their more experienced colleagues. They stated the reason for this as that the selection of participants in in-service training programs were based on seniority and teachers with less professional seniority were not aware of the existence of in-service training courses.

Thirdly, it was concluded that the views of IT teachers regarding in-service training did not differ depending on age. This finding of the study contradicts a previous study by Çatmalı [5] and Doğan [7] stating that the perceptions of teachers towards in-service training increase as their ages increase. The reason for this can be stated as that the departments of universities training IT teachers in Turkey started to produce graduates within the last 10-15 years and therefore there is not a serious generation gap among IT teachers. Furthermore, it can be seen as a contradiction that the views of the participants regarding in-service training differed depending on professional seniority, whereas no significant difference was observed with respect to age. However, this finding might have resulted from that the teachers could not start their professions at the same age with others due to reasons such as graduating at a later time, waiting for an assignment and compulsory military service, and that they had previous employment at other institutions, which affected their years of seniority.

Fourth, it was found that the views of IT teachers regarding in-service training differed depending on the number of in-service training courses they joined. Accordingly, IT teachers who did not previously join any in-service training courses had the lowest perception towards in-service training, those who joined one or two courses had higher perceptions and those who joined such courses three times or more had the highest perception towards in-service training. Such a finding could be based on that the IT teachers who joined in-service training courses were satisfied with the courses and believed that such courses were useful for them. Wei, Darling-Hammond and Adamson [17] report that 88% of the teachers joined in-service training courses throughout the US. According to Wei, Darling-Hammond and Adamson [17], the reason for such a high level of participation despite the fact that most of the courses are not mandatory was the high perception levels of the participants. However, in various studies, no significant relationship was found between the number of in-service training courses teachers participated and the effect of participating in in-service training in the education-teaching process in general [7]-[9], [11].

Fifth and lastly, it was found that the views of IT teachers regarding in-service training differed depending on the type of in-service training course they wanted to take. The perceptions of IT teachers who wanted to join local in-service training courses were found to be lower compared to IT teachers who wanted to take central or both types of in-service training courses. The perceptions of IT teachers who wanted to join central in-service training courses and the perceptions of those who wanted to join both types of courses were high and close to one another. According to these results, participants did not see local in-service training courses alone as adequate for their needs. The high in-service training perception levels of teachers who wanted to join central in-service training courses could have resulted from that besides professional development, central in-service training courses provide certain opportunities such as social interaction, visiting new places, knowing new people and receiving quality training

from trainers selected by the ministry of education. The primary reason of IT teachers who wanted to take both types of courses for such a choice could be their desire to receive in-service training and thus they might have paid no attention to the type of course.

V.SUGGESTIONS

In conclusion, whether the in-service training courses organized for teachers do what is expected is related to how teachers perceive such courses. The following suggestions can be made based on the findings obtained within the scope of the study:

- ✓ A more extensive study which will comprise all the teachers along with IT teachers could be conducted to determine the effect of in-service training on professional and personal development.
- ✓ Information can be provided regarding the contents of courses and seminars in order to emphasize the importance of in-service training and inform the teachers about the objectives.
- ✓ In-service training courses should be organized by considering the professional and personal expectations of teachers and in a manner that will meet those expectations.

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