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DETERMINATION OF IN-SERVICE TRAINING NEEDS OF SCHOOL ADMINISTRATORS

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ABSTRACT

School administrators are expected to have technological competences in order to achieve sustainable changes in today's IT age. However professional development activities that will be prepared and implemented before carrying out a need analysis do not have the potential to provide the expected contribution to individuals and institutions. It is necessary to take into consideration the opinions of school administrators in the in-service activities to be planned for the school administrators considering the variability of their preferences. Therefore, it is important to determine the in-service training needs of the school administrators, who use, adopt and exemplify technology in schools at the same time, and prepare an in-service training program within the framework of the determined needs. The purpose of this study is to identify the in-service training needs of school administrators. The mixed method research design was used in the study. Using the holistic sampling, data for the study were collected from school administrators working in Zonguldak city of Turkey during the 2014-2015 academic year. Initially an questionnaire to identify the in-service training needs of school administrators for technology was developed in the study. The content analysis was used to analyze the data obtained from one-on-one non-structured interviews and the descriptive analysis was used to analyze the data obtained from the focus group interview. The in-service training needs of school administrators working in Zonguldak city of Turkey was determined as a second step in the study. Descriptive analysis was used for quantitative data. The results of the study revealed that school administrators working in Zonguldak city during the 2014-2015 academic year needed an in-service training for 16 technology skills. It was also found that school administrators preferred a in-service training in an applied format for technology skills. The reason why school

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administrators prefer practical in-service training to other trainings should be examined in future studies.

STRUCTURED ABSTRACT

School administrators are expected to have technological competences in order to achieve sustainable changes in today's IT age. However professional development activities that will be prepared and implemented before carrying out a need analysis do not have the potential to provide the expected contribution to individuals and institutions. It is necessary to take into consideration the opinions of school administrators in the in-service activities to be planned for the school administrators considering the variability of their preferences. Therefore, it is important to determine the in-service training needs of the school administrators, who use, adopt and exemplify technology in schools at the same time, and prepare an in-service training program within the framework of the determined needs. The purpose of this study is to identify the in-service training needs of school administrators. The overall objective of this study is to determine the in-service training needs of school administrators for technology. In order to achieve this general aim, the following research questions have been formed;

1. What are the knowledge and skills that school administrators should have for technology?
2. What are the current knowledge and skills levels of school administrators?
3. What are the school administrators' desired levels of knowledge and skills for the technology?
4. What are the main skills and knowledge that school administrators need in in-service training for technology in an order of priority?
5. What is the importance of the knowledge and skills that school administrators need in in-service training for technology for their work?
6. What is the priority order of the skills that school administrators need in in-service training for technology in professional development?

Moore (2008) has developed a need assessment model with Kaufman's model to broaden the scope of the needs assessment tool, which allows the acquisition of information only on the identification of priority disputes. Moore's Needs Assessment Model (2008), in addition to Kaufman's Organizational Elements Model has created to answers to questions; (1) What is the importance level of the identified skill for the job? (2) What is the significance level of the skill specified for professional development in this area? and (3) What is the preferred method for providing professional development? (Where? How?). On the needs assessment scale prepared by Moore, the themes were used and the skills related to the themes were mentioned, which would be below each theme. The model proposed by Kaufman served to identify the needs for a limited number of skills, while Moore's needs analysis allowed the need for more than one skill at a time as the themes were used.

Moore's Needs Assessment Model (2008) addresses the shortcomings of Kaufman's Organizational Elements Model. For example, if a skill is not important for the job, even if this skill is desirable, it will be more appropriate not to include it in professional development as it will be compared with the skills that are important for the job in professional development. It is not sufficient to know the difference between the existing skill and the desired skill alone. It is important to know the importance of skills for the job, priorities in professional development and the format of the training to be given for skills.

Mixed method research design was used in the study. Using the holistic sampling, data for the study were collected from 411 school administrators working in Zonguldak city of Turkey during the 2014-2015 academic year. Initially an questionnaire to identify the in-service training needs of school administrators for technology was developed in the study. The content analysis was used to analyze the data obtained from one-on-one non-structured interviews and the descriptive analysis was used to analyze the data obtained from the focus group interview. The in-service training needs of school administrators working in Zonguldak city was determined using the questionnaire for Determining The In-Service Training Needs Of School Administrators For Technology as a second step in the study. Descriptive analysis was used for quantitative data. The knowledge and skills that school administrators need to have for technology are grouped under eight headings. Specified titles are hardware, working with MS Word / Excel programs, electronic mail (e-mail), computer files and programs, printer / scanner / copier use, audio / video / photo / security camera usage, working with MS PowerPoint program and web page preparation. The need assessment model by Moore (2008) is built on the Kaufman (1983) model. Moore (2008) aims to take into account the variables of importance of skills for work and priority sequence of priorities in a possible in-service training program, in addition to the above-average skills created by the distribution of the difference scores between the desired skill and the existing skill in the needs assessment model. The findings obtained in order to determine the in-service training needs of the school administrators are structured by taking into consideration the skill difference scores, the importance levels of skills for the job and the priority ranking of skills.

In the data collected, in order to determine the in-service training needs of the school administrators working in Zonguldak province, there are 16 skills above the average when the difference points of the skills are evaluated. When the in-service training needs of school administrators are evaluated in terms of their importance for the job, the level of importance of all skills for the job is significant and above. Similarly, when the in-service training needs of the school administrators are evaluated in terms of the order of priority for professional development, the level of priority of all skills in the professional development is at the middle or higher level.

The possible in-service training program of the school administrators working in the province of Zonguldak in the field of technology is included in all skill topics included in the Determination of In-Service Training Needs of Technology Managers. These topics are Hardware, Working with Word / Excel, Electronic mail (e-mail), Files and

programs, Printer / scanner / copier, Audio / video / photo / security camera, Working with PowerPoint and Web page preparation. Also the majority of the school administrators working in Zonguldak province stated that the school administrators had the first choice in the in-service training program in the In-Service Training Needs Assessment Report. On the other hand, the least preferred form of in-service training is to take elective courses from universities. The reason why school administrators prefer practical in-service training to other trainings should be examined in future studies.

Keywords: Needs Analysis, In-service Training Program, School Administrators, Skills for Technology

OKUL YÖNETİCİLERİNİN TEKNOLOJİYE YÖNELİK HİZMET İÇİ EĞİTİM İHTİYAÇLARININ BELİRLENMESİ

ÖZ

Okul yöneticilerinin günümüzün BT çağında sürdürülebilir değişikliklere ulaşmak için teknolojik yeterliliklere sahip olmaları beklenmektedir. Ancak ihtiyaç analizi yapılmadan önce hazırlanıp uygulanacak mesleki gelişim faaliyetleri, bireylere ve kurumlara beklenen katkı sağlama potansiyeline sahip değildir. Okul yöneticilerinin tercih ettikleri değişkenliği göz önünde bulundurarak okul yöneticileri için planlanan hizmet içi faaliyetlerdeki görüşlerini dikkate almak gerekir. Bu nedenle, aynı zamanda okullarda teknolojiyi kullanan, benimseyen ve örnekleyen okul yöneticilerinin hizmet içi eğitim ihtiyaçlarını belirlemek ve belirlenen ihtiyaçlar çerçevesinde hizmet içi eğitim programı hazırlamak önemlidir. Bu araştırmanın amacı, okul yöneticilerinin teknolojiye yönelik hizmet içi eğitim ihtiyaçlarının belirlenmesi ve belirlenmesidir. Çalışma deseni olarak karma araştırma deseni kullanılmıştır. Tam örneklemin kullanıldığı çalışmada veriler, 2014-2015 eğitim öğretim yılında Zonguldak ilinde görev yapan okul yöneticilerinden toplanmıştır. Çalışmada ilk olarak okul yöneticilerin teknolojiye yönelik hizmet içi eğitim ihtiyaçlarını belirlemeye yönelik anket geliştirilmiştir. Çalışmada birebir yapılandırılmamış görüşmeler ile elde edilen verilerin içerik analizi ve odak grup görüşmesi ile elde edilen verilerin betimsel analizi yapılmıştır. Çalışmada ikinci olarak Zonguldak ilinde okullarda görev yapan yöneticilerin teknolojiye yönelik hizmet içi eğitim ihtiyaçları “Okul Yöneticilerinin Teknolojiye Yönelik Hizmet İçi Eğitim İhtiyaçlarını Belirleme Anketi” ile belirlenmiştir. Çalışmada toplanan nicel verilerin analizinde betimsel analiz kullanılmıştır. Çalışma sonuçları Zonguldak ilinde 2014-2015 eğitim öğretim yılında görev yapmakta olan okul yöneticilerinin teknolojiye yönelik 16 beceride hizmet içi eğitime ihtiyaç duyduklarını göstermiştir. Ayrıca okul yöneticilerinin teknolojiye yönelik becerilerde uygulamalı hizmet içi eğitimi tercih ettikleri saptanmıştır. Okul idarecilerinin uygulamalı hizmet içi eğitimi diğer eğitimlere neden tercih ettikleri ileride yapılan çalışmalarda incelenmelidir.

Anahtar Kelimeler: İhtiyaç Analizi, Hizmet İçi Eğitim Programı, Okul Yöneticileri, Teknoloji Becerileri.

1. Introduction

In the information age, there are changes in every aspect of life (Buabeng-Andoh, 2012). Education should adapt to changes and developments in science and technology, and should be a mean of reflecting these changes and developments on the structure of society. In order to reflect the changes and developments in science and technology to the society, it cannot be expected to have a static structure. The integration process always requires a dynamic structure of education. Gözler (2008) emphasized the necessity of adaptation of educational institutions to the developments in technology in particular.

School administrators are expected to have technological competencies in order to achieve sustainable changes in the information society (Balkar and Şahin, 2012). As the school leader, school administrators play a key role in the application of information and communication technologies in schools (Arokiasamy, bin Abdullah and Ismail, 2015). Changes in the business life that emerged with globalization gained momentum with technology and made life-long learning compulsory for individuals to maintain their business performance. In order for the individuals who work in the schools which have formal education in a planned way to adapt to the changes occurring within the system, professional development activities consisting of in-service trainings which are the only way of lifelong learning are organized (Odabaşı and Kabakçı, 2007). In-service training is a sub-process that takes part in lifelong education resulting from the combination of multidimensionality and continuity characteristics (Babadoğan and Selvi, 1990).

The effects of changes in information and communication technologies on education and the changing paradigms in teaching and learning constitute the basis of the professional development needs of trainers (Odabaşı, and Kabakçı, 2007). According to Akbaba-Altun (2002), school principals can only perform management duties in schools as expected, as individuals who know, use and adopt technology. Managers (managers and assistants) who work in schools should not be expected to achieve individual competencies. On the contrary, it should be ensured to participate in in-service trainings organized systematically (Günbayı and Cantürk, 2012). In Turkey, the ministerial organization usually plays a decisive role in determining the in-service training needs. The fact that the needs of the participants are not determined during the process of deciding on the in-service trainings negatively affects the results of in-service training (Arslantaş and Özkan, 2013). It should not be forgotten that in order to record progress, the correct evaluation of the existing one and deficiencies need to be determined (Çetin, 2008). Professional development activities that will be prepared and implemented before carrying out a need analysis do not have the potential to provide the expected contribution to individuals and institutions.

According to Öztürk and Sancak (2007), quality of service training and practice in Turkey has emphasized that the increase in terms of quantity greatly needed. Gönen and Kocakaya (2006) concluded that the in-service trainings organized by the Turkish Ministry of National Education were insufficient in terms of number and quality. Baloğlu (2007) stated that it is necessary to take into consideration the opinions of school administrators in the in-service activities to be planned for the school administrators considering the variability of their preferences. Therefore, it is important to determine the in-service training needs of the school administrators, who use, adopt and exemplify technology in schools at the same time, and prepare an in-service training program within the framework of the determined needs.

1.1. Purpose of the research

The overall objective of this study is to determine the in-service training needs of school administrators for technology.

In order to achieve this general aim, the following research questions have been formed;

1. What are the knowledge and skills that school administrators should have for technology?

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2. What are the current knowledge and skills levels of school administrators?
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 6. What is the priority order of the skills that school administrators need in in-service training for technology in professional development?

1.2. Determining the Need for In-Service Training

If there is a difference between the adequacy of the employees and the expected qualifications, the in-service training activities are carried out to eliminate this difference. Taymaz (1997) defined the need for the in-service training as an effort to obtain the information needed to organize in-service training activities.

Witkin and Altschuld (1995) defined the need as a general gap. Witkin and Altschuld (1995) explained the gap as the difference between the current condition (What?) and the expected condition (What should it be?). In other words, the difference between the present and the expected condition should be expressed as need. Kaufman and Herman (1991) emphasized that educators often evaluate the difference between the current condition and the expected condition that should exist and that it evaluates the wishes and desires without examining the need and, as a result, have negative consequences such as suggesting treatment without diagnosing. The needs analysis is a set of systematic procedures determined to make decisions about the program and create principles or to allocate institutional development and institutional resources (Küçüktepe, 2013). Benjamin (1989) in the study comparing the concepts of needs analysis and needs assessment has found that both concepts are used in the same sense. In this study, the needs analysis and need assessment concepts were used in the same sense as what Benjamin (1989) suggested.

Moore (2008) has developed a need assessment model with Kaufman's model to broaden the scope of the needs assessment tool, which allows the acquisition of information only on the identification of priority disputes. Moore's Needs Assessment Model (2008), in addition to Kaufman's Organizational Elements Model has created answers to questions; (1) What is the importance level of the identified skill for the job? (2) What is the significance level of the skill specified for professional development in this area? and (3) What is the preferred method for providing professional development? (Where? How?). On the needs assessment scale prepared by Moore, the themes were used and the skills related to the themes were mentioned, which would be below each theme. The model proposed by Kaufman served to identify the needs for a limited number of skills, while Moore's needs analysis allowed the need for more than one skill at a time as the themes were used (Figure 1).

Figure 1: Moore's Needs Assessment Model

Source: Moore, S. (2008). Assessing the professional development needs of principals and leaders in PREK-12 educational settings, Ph.D Thesis, New York.

Moore's Needs Assessment Model (2008) addresses the shortcomings of Kaufman's Organizational Elements Model. For example, if a skill is not important for the job, even if this skill is desirable, it will be more appropriate not to include it in professional development as it will be compared with the skills that are important for the job in professional development. It is not sufficient to know the difference between the existing skill and the desired skill alone. It is important to know the importance of skills for the job, priorities in professional development and the format of the training to be given for skills.

Different studies have been carried out in Turkey for in-service training of school administrators and teachers. Yilmaz and Esen (2015) used qualitative research methodology in their work on the analysis of in-service training programs for primary and secondary school teachers. The results of the study showed that the in-service training programs were not planned according to the needs of the teachers, the duration of the program, the environment in which the program was presented, the teaching materials used in the program and the people who provided training in the program were insufficient in the subject area and the trainings were theoretical rather than practical. In another study, Hayytov (2013) examined the relationship between technology leadership competency perceptions and teachers' attitudes towards technology. The results of the study showed that gender, age, educational status and in-service education status of the technology leadership competency perceptions of school administrators working in primary education did not lead to a significant relationship in the perception of technology leadership competence. In another study, Akdemir (2012) evaluated the candidate teacher in-service training program for the teaching principles and methods by using Stufflebeam's environment, input, process and product evaluation model. The results of the study showed that most of the participants in the in-service training found the program insufficient. Balkar and Şahin (2012) examined the knowledge management process competencies and leadership skills of secondary school principals and the need of teachers and school administrators who need to make information sharing in school

more efficient should be solved through courses that can be opened within the school. In another study, Günbayı and Cantürk (2012) compared the levels of using computer technology of school administrators and the levels of computer use of primary school teachers. As a result of the study, it was observed that school administrators and teachers had sufficient knowledge about word processing program, e-mail usage and internet usage, while they did not have sufficient knowledge in spreadsheet, database and presentation programs. In another study, McGee (2015) has now examined the understanding of technology managers about state-of-the-art technology development in public schools. The results of the study showed that; Technology managers believe that students, teachers and managers need to be helped to succeed in the use of technology. In another study, Brown (2013) examined how teaching and learning are improved by school principals with technologies that meet the needs of today's students. The results of the study showed that school administrators who want to lead the changes in schools and integration of technology should have a certain level of technological competence.

2. Method

2.1. Research Model

In this study, the explanatory mixed methods design which allows the use of qualitative data for the purpose of guiding quantitative data collection was used (Büyüköztürk, Çakmak, Akgün, Karadeniz & Demirel, 2008). The study consists of two main parts. In the first part of the study, the questionnaire was developed to determine the in-service training needs of school administrators. In the second part of the study the in-service training needs of the managers working in schools in Zonguldak province of Turkey were determined using the developed questionnaire.

2.2 Preparation of the Data Collection Tool and Qualitative Data Analysis

The qualitative data obtained during the first phase of the study and the In-Service Training Needs Determination questionnaire of the School Administrators to be used in the study were formed. In order to determine the duties and responsibilities of the school administrators, the literature review was conducted prior to the unstructured interviews. In the main headings of education management, printed books were examined during the process of determining what kind of tasks were done by the school administrators. According to Taymaz (1995), as a result of the review of the literature, the tasks and operations of the school administrators in different schools with different social, political and economic structures are grouped under five headings. These; (1) Personnel services, (2) Student services, (3) Teaching services, (4) Educational services and (5) School business. The works and transactions conducted by the school administrators in the official schools, which were determined by the literature review, have been the reference in the unstructured conversation in one-to-one interviews. Snowball sampling method has been used in the process of determining who will use the technology with the aims of school administrators and also with the purpose of determining the general knowledge and skills they need for their purpose of use (Yıldırım & Şimşek, 2011).

One-to-one interviews were conducted with 6 school administrators. What technologies do school administrators use? and also the knowledge and skills that school administrators need in the technologies they use? in the data set corresponding to the questions set in the study by creating the code. In the next stage of the content analysis, the codes that emerged were examined. Code names with similar meanings are grouped under a single code name. The similar codes obtained were grouped under theme (category) titles. At the end of the study, 15 themes representing different codes were determined. In the individual interviews, a focus group interview was conducted with the aim of identifying the possible tools and equipment that might not have been mentioned by the managers, and also the knowledge and skills needed by the school administrators and the knowledge and skills they need about the area they used in the focus group interview. 6 school administrators participated in the focus group interview. At the end of the individual interviews conducted with the school administrators, a descriptive

analysis was conducted regarding the focus group interview data within the context of the codes and themes determined by the content analysis. At the end of the data analysis 8 categories were determined.

In accordance with the nature of qualitative research, the concepts of persuasiveness (internal validity), transferability (external validity), consistency (internal reliability) and confirmability (external reliability) are used to explain the concepts of validity and reliability in qualitative research (Yıldırım & Şimşek, 2011). In order to ensure credibility, depth-oriented data were collected in the study. In the study, the data obtained from the interviews were added to the interview topic in the next interviews and used to reveal the patterns that the participants were not clearly aware of (Yıldırım & Şimşek, 2011). In order to ensure transferability, the method followed in the study is explained in detail. In this way, the study on a different sample was allowed to be repeated by following similar steps. Consistency concept which is one of the areas where reliability is focused in qualitative research is used (Yıldırım & Şimşek, 2011). In this research, the research activities were continuously reviewed and the consistency of the study was ensured. Erlandson et al. (1993) proposed an affirmative review strategy to ensure verification in qualitative studies. For this purpose, the raw data which were consistently obtained qualitatively during the study were compared with the items in the questionnaire. The questionnaire consisting of 8 categories was formed after taking the expert opinions (Appendix 1).

2.3. Analysis of Quantitative Data

The SPSS package was used to analyze the data obtained from the school administrators. For this purpose, frequency and percentage distributions of the data were generated by using SPSS.

2.4. Population and Sample Selection

The population of this study consists of 618 school administrators working in Zonguldak city of Turkey during the 2014-2015 academic year. Data were collected from 411 school administrators by using the full sampling method. 10.22% of the school administrators participated in the study were female school administrators and 89.78% were male school administrators.

3. FINDINGS

The level of education of the school principals participating in the study (Table 1), their seniority (Table 2), the types of management (Table 3), the type of school they work (Table 4) are given.

Table 1: School Administrators Education Level

Graduation	Frequency	Percent
Education Institute	24	5,83
Undergraduate equivalent	19	4,62
Undergraduate degree	338	82,26
Graduate degree	30	7,29
Doctoral Degree	0	0
Total	411	100

Table 2: Seniorities as School Principal

Seniority	Frequency	Percent
0-5 year	162	39,4
6-10 year	65	15,8
11-15 year	61	14,8
16-20 year	34	8,3
21 and more	89	21,7
Total	411	100

Tablo 3: School Principal and School Deputy Director

Administrator Type	Frequency	Percent
Principal	205	49,87
School Deputy Director	206	50,13
Total	411	100

Table 4: Type of School

Type of school	Frequency	Percent
Primary school	172	41,85
Middle School	101	24,57
High school	138	33,58
Total	411	100

In the study, what are the knowledge and skills that school administrators should have for technology? The question was analyzed with the data obtained from the field literature, individual interviews and focus group interviews about the tasks performed by the school administrators. According to this, the knowledge and skills that school administrators should have for technology are given in Table 5.

Table 5: Knowledge and skills of school administrators

Skills
1. Hardware
1.1 Ability to make computer / scanner / projection / printer cable connections
1.2 Ability to make internet and network connections
1.3 Ability to make audio connections (amplifier, speaker and microphone)
2. Working with Word/Excel
2.1 Ability to set page layout in Word / Excel
2.2 Ability to add images / figures / photos in Word / Excel
2.3 Ability to create tables / graphics in Word / Excel
2.4 Ability to print selected artifacts in Word / Excel
2.5 Ability to create formula in Excel
2.6 The ability to filter / sort data in Excel
2.7 The ability to use the Find / Change feature in Word / Excel
2.8 Ability to change my saturation types (docx / xlsx-pdf, doc / docx, etc.)
3. Electronic mail (email)
3.1 Ability to redirect e-mails to Outlook
3.2 Ability to send bulk messages via e-mail
3.3 Ability to send and receive files by e-mail
4.Files and programs
4.1 Ability to backup files to external disk / Flash / CD / DVD
4.2 Ability to file compression
4.3 Ability to perform virus screening
4.4 Ability to format computer
4.5 Ability to add / remove / update programs to computer
5. Printer / scanner / copier
5.1 Ability to scan and save documents / images
5.2 Ability to share printer on computer network
5.3 Ability to make multiple copies at different scales
6.Sound / video / photo / security camera
6.1 Ability to enter a program (set ring)
6.2 Ability to transfer video / photo / security camera recordings to computer
6.3 Ability to adjust the size of image files
7. Working with PowerPoint
7.1 Ability to create slide layout in PowerPoint
7.2 Ability to add images / figures / graphics / tables / audio / video to slides in PowerPoint
7.3 Ability to make presentation timing in PowerPoint
7.4 Ability to convert a presentation file to PowerPoint
8.Preparing a web page
8.1 Ability to add text / photos / videos to the school web page
8.2 Ability to add links to the school web page

The knowledge and skills that school administrators need to have for technology are grouped under eight headings. Specified titles, hardware, working with MS Word / Excel programs, electronic mail (e-mail), computer files and programs, printer / scanner / copier use, audio / video / photo / security camera usage, working with MS PowerPoint program and web page preparation. The current knowledge and skill levels of the school administrators, the level they desire to reach these skills and the difference between the current level and the desired level are examined and given in Table 6.

Table 6: The current and desired skills levels of school administrators and in-service training for technology

Skills	Current Level (X̄)	Desired Level (X̄)	Difference (X̄)
1. Hardware			
1.1 Ability to make computer / scanner / projection / printer cable connections	3,58	4,50	0,92
1.2 Ability to make internet and network connections	3,16	4,28	1,12
1.3 Ability to make audio connections (amplifier, speaker and microphone)	3,27	4,10	0,83
2. Working with Word/Excel			
2.1 Ability to set page layout in Word / Excel	3,67	4,51	0,84
2.2 Ability to add images / figures / photos in Word / Excel	3,49	4,37	0,88
2.3 Ability to create tables / graphics in Word / Excel	3,30	4,33	1,03
2.4 Ability to print selected artifacts in Word / Excel	3,99	4,48	0,49
2.5 Ability to create formula in Excel	2,61	4,12	1,51
2.6 The ability to filter / sort data in Excel	2,84	4,07	1,23
2.7 The ability to use the Find / Change feature in Word / Excel	3,22	4,13	0,91
2.8 Ability to change my saturation types (docx / xlsx-pdf, doc / docx, etc.)	2,85	4,09	1,24
3. Electronic mail (email)			
3.1 Ability to redirect e-mails to Outlook	3,17	4,22	1,05
3.2 Ability to send bulk messages via e-mail	3,59	4,31	0,72
3.3 Ability to send and receive files by e-mail	3,94	4,46	0,52
4.Files and programs			
4.1 Ability to backup files to external disk / Flash / CD / DVD	3,73	4,40	0,67
4.2 Ability to file compression	3,39	4,25	0,86
4.3 Ability to perform virus screening	3,66	4,35	0,69
4.4 Ability to format computer	2,51	4,13	1,62
4.5 Ability to add / remove / update programs to computer	3,51	4,32	0,81
5. Printer / scanner / copier			
5.1 Ability to scan and save documents / images	3,74	4,39	0,65
5.2 Ability to share printer on computer network	2,87	4,10	1,23
5.3 Ability to make multiple copies at different scales	3,08	4,14	1,06
6.Sound / video / photo / security camera			
6.1 Ability to enter a program (set ring)	2,71	3,97	1,26
6.2 Ability to transfer video / photo / security camera recordings to computer	3,00	4,10	1,1
6.3 Ability to adjust the size of image files	3,12	4,17	1,05
7. Working with PowerPoint			
7.1 Ability to create slide layout in PowerPoint	3,16	4,19	1,03
7.2 Ability to add images / figures / graphics / tables / audio / video to slides in PowerPoint	3,01	4,13	1,12
7.3 Ability to make presentation timing in PowerPoint	2,91	4,09	1,18
7.4 Ability to convert a presentation file to PowerPoint	2,50	3,97	1,47
8.Preparing a web page			
8.1 Ability to add text / photos / videos to the school web page	2,72	4,21	1,49
8.2 Ability to add links to the school web page	2,42	4,12	1,7

The priority is given in Table 7, when the primary knowledge and skills that school administrators need for in-service training in technology are sorted by difference scores.

Table 7: High Priority of Major Skills of School Administrators Needed for Technology-Based In-Service Training in Order of Priority

Skills	Difference ($\bar{X}$)
8.2 Ability to add links to the school web page	1,7
4.4 Ability to format computer	1,62
2.5 Ability to create formula in Excel	1,51
8.1 Ability to add text / photos / videos to the school web page	1,49
7.4 PowerPoint'te sunu dosyasını videoya dönüştürme becerisi	1,47
6.1 Ability to enter a program (set ring)	1,26
2.8 Ability to change my saturation types (docx / xlsx-pdf, doc / docx, etc.)	1,24
2.6 The ability to filter / sort data in Excel	1,23
5.2 Ability to share printer on computer network	1,23
7.3 Ability to make presentation timing in PowerPoint	1,18
1.2 Ability to make internet and network connections	1,12
7.2 Ability to add images / figures / graphics / tables / audio / video to slides in PowerPoint	1,12
6.2 Ability to transfer video / photo / security camera recordings to computer	1,1
5.3 Ability to make multiple copies at different scales	1,06
3.1 Ability to redirect e-mails to Outlook	1,05
6.3 Ability to adjust the size of image files	1,05
2.3 Ability to create tables / graphics in Word / Excel	1,03
7.1 Ability to create slide layout in PowerPoint	1,03
1.1 Ability to make computer / scanner / projection / printer cable connections	0,92
2.7 The ability to use the Find / Change feature in Word / Excel	0,91
2.2 Ability to add images / figures / photos in Word / Excel	0,88
4.2 Ability to file compression	0,86
2.1 Ability to set page layout in Word / Excel	0,84
1.3 Ability to make audio connections (amplifier, speaker and microphone)	0,83
4.5 Ability to add / remove / update programs to computer	0,81
3.2 Ability to send bulk messages via e-mail	0,72
4.3 Ability to perform virus screening	0,69
4.1 Ability to backup files to external disk / Flash / CD / DVD	0,67
5.1 Ability to scan and save documents / images	0,65
3.3 Ability to send and receive files by e-mail	0,52
2.4 Ability to print selected artifacts in Word / Excel	0,49

When the difference scores of the skills in the in-service training needs survey of school administrators were examined, it was found that the mean value for the difference points was 1.04 and the median (mod) value was 1.05. The mean and median values of the difference points are very close to each other. The skills that are above the mean value of the difference points indicate the possible skills in need of in-service training. Possible skills in need of in-service training are indicated in grayscale in Table 7.

In addition to the difference between the current and desired scores according to Moore (2008) model, the importance of skill for the job and the findings of the order of priority order in professional development will be evaluated together and the skills needed for in-service training will be determined. Another research question in the study aimed to determine the importance of prioritized knowledge and skills of school administrators for the work they need. The level of importance of the skills that school administrators need in-service training for technology is given in Table 8.

When the importance levels of the skills in Table 8 are examined, it is seen that the skill with the highest importance level (2.1 is the ability to adjust the page layout in Word / Excel). When the importance of the skill for the job is taken into consideration, the level of importance of the skills for the job is the lowest (Important) and the highest (Very Important) level.

Table 8: The Importance of School Administrators' Needs for Work

Skills	Level of importance for the work ($\bar{X}$)	Importance for the work
1.1 Ability to make computer / scanner / projection / printer cable connections	3,93	Very Important
1.2 Ability to make internet and network connections	3,73	Very Important
1.3 Ability to make audio connections (amplifier, speaker and microphone)	3,29	Important
2.1 Ability to set page layout in Word / Excel	4,11	Very Important
2.2 Ability to add images / figures / photos in Word / Excel	3,82	Very Important
2.3 Ability to create tables / graphics in Word / Excel	3,85	Very Important
2.4 Ability to print selected artifacts in Word / Excel	3,99	Very Important
2.5 Ability to create formula in Excel	3,58	Very Important
2.6 The ability to filter / sort data in Excel	3,52	Very Important
2.7 The ability to use the Find / Change feature in Word / Excel	3,53	Very Important
2.8 Ability to change my saturation types (docx / xlsx-pdf, doc / docx, etc.)	3,53	Very Important
3.1 Ability to redirect e-mails to Outlook	3,60	Very Important
3.2 Ability to send bulk messages via e-mail	3,59	Very Important
3.3 Ability to send and receive files by e-mail	3,85	Very Important
4.1 Ability to backup files to external disk / Flash / CD / DVD	3,70	Very Important
4.2 Ability to file compression	3,48	Important
4.3 Ability to perform virus screening	3,69	Very Important
4.4 Ability to format computer	3,43	Important
4.5 Ability to add / remove / update programs to computer	3,58	Very Important
5.1 Ability to scan and save documents / images	3,65	Very Important
5.2 Ability to share printer on computer network	3,39	Important
5.3 Ability to make multiple copies at different scales	3,43	Important
6.1 Ability to enter a program (set ring)	3,24	Important
6.2 Ability to transfer video / photo / security camera recordings to computer	3,27	Important
6.3 Ability to adjust the size of image files	3,34	Important
7.1 Ability to create slide layout in PowerPoint	3,43	Important
7.2 Ability to add images / figures / graphics / tables / audio / video to slides in PowerPoint	3,39	Important
7.3 Ability to make presentation timing in PowerPoint	3,32	Important
7.4 Ability to convert a presentation file to PowerPoint	3,16	Important
8.1 Ability to add text / photos / videos to the school web page	3,60	Very Important
8.2 Ability to add links to the school web page	3,51	Very Important

The study also aimed to determine the prioritized order of priorities and skills of school administrators in the development of professional development. Table 9 shows the priority order of the skills that school administrators need in in-service training for technology in professional development.

Table 9: Distribution of Priorities of School Managers' Needs in Professional Development

Skills	Vocational Order of Priority in Development ($\bar{X}$)	Order of Priority in Professional Development
1. Hardware		
1.1 Ability to make computer / scanner / projection / printer cable connections	3,68	High
1.2 Ability to make internet and network connections	3,61	High
1.3 Ability to make audio connections (amplifier, speaker and microphone)	3,24	Average
2. Working with Word/Excel		
2.1 Ability to set page layout in Word / Excel	4,05	High
2.2 Ability to add images / figures / photos in Word / Excel	3,78	High
2.3 Ability to create tables / graphics in Word / Excel	3,86	High
2.4 Ability to print selected artifacts in Word / Excel	4,00	High
2.5 Ability to create formula in Excel	3,70	High
2.6 The ability to filter / sort data in Excel	3,63	High
2.7 The ability to use the Find / Change feature in Word / Excel	3,62	High
2.8 Ability to change my saturation types (docx / xlsx-pdf, doc / docx, etc.)	3,62	High
3. Electronic mail (email)		
3.1 Ability to redirect e-mails to Outlook	3,69	High
3.2 Ability to send bulk messages via e-mail	3,68	High
3.3 Ability to send and receive files by e-mail	3,88	High
4.Files and programs		
4.1 Ability to backup files to external disk / Flash / CD / DVD	3,77	High
4.2 Ability to file compression	3,56	High
4.3 Ability to perform virus screening	3,71	High
4.4 Ability to format computer	3,53	High
4.5 Ability to add / remove / update programs to computer	3,68	High
5. Printer / scanner / copier		
5.1 Ability to scan and save documents / images	3,73	High
5.2 Ability to share printer on computer network	3,48	Average
5.3 Ability to make multiple copies at different scales	3,54	High
6.Sound / video / photo / security camera		
6.1 Ability to enter a program (set ring)	3,27	Average
6.2 Ability to transfer video / photo / security camera recordings to computer	3,37	Average
6.3 Ability to adjust the size of image files	3,46	Average
7. Working with PowerPoint		
7.1 Ability to create slide layout in PowerPoint	3,55	High
7.2 Ability to add images / figures / graphics / tables / audio / video to slides in PowerPoint	3,52	High
7.3 Ability to make presentation timing in PowerPoint	3,43	Average
7.4 Ability to convert a presentation file to PowerPoint	3,30	Average
8.Preparing a web page		
8.1 Ability to add text / photos / videos to the school web page	3,67	High
8.2 Ability to add links to the school web page	3,62	High

The need assessment model by Moore (2008) is built on the Kaufman (1983) model. Moore (2008) aims to take into account the variables of importance of skills for work and priority sequence of priorities in a possible in-service training program, in addition to the above-average skills created by the distribution of the difference scores between the desired skill and the existing skill in the needs assessment model. The findings obtained in order to determine the in-service training needs of the school administrators are structured by taking into consideration the skill difference scores, the importance

levels of skills for the job and the priority ranking of skills. Figure 2 shows the skill difference scores, the importance levels of the skills for the job, and the distribution of the variables of skills prioritization. The numbers in Figure 2 represent the skill numbers.

Figure 2: Distribution of Skills by Moore' Needs Assessment Model

In the data collected in order to determine the in-service training needs of the school administrators working in Zonguldak province, there are 16 skills above the average when the difference points of the skills are evaluated. When the in-service training needs of school administrators are evaluated in terms of their importance for the job, the level of importance of all skills for the job is significant and above. Similarly, when the in-service training needs of the school administrators are evaluated in terms of the order of priority for professional development, the level of priority of all skills in the professional development is at the middle or higher level. The skill difference scores of the in-service training needs of the school administrators, the importance of the skills for the job and the distribution of skills in terms of priority in professional development are given in Table 4.10.

Table 10: Moore (2008) Distribution of Priority Skills in Service Training by Needs Assessment Model

Skills	Skill Differences ($\bar{X}$)	Importance of the skills for the work ($\bar{X}$)	Priority of skill in professional development ($\bar{X}$)
8.2 Ability to add links to the school web page	1,7	3,51	3,62
4.4 Ability to format computer	1,62	3,43	3,53
2.5 Ability to create formula in Excel	1,51	3,58	3,70
8.1 Ability to add text / photos / videos to the school web page	1,49	3,60	3,67
7.4 Ability to convert a presentation file to PowerPoint	1,47	3,16	3,30
6.1 Ability to enter a program (set ring)	1,26	3,24	3,27
2.8 Ability to change my saturation types (docx / xlsx-pdf, doc / docx, etc.)	1,24	3,53	3,62
2.6 The ability to filter / sort data in Excel	1,23	3,52	3,63
5.2 Ability to share printer on computer network	1,23	3,39	3,48
7.3 Ability to make presentation timing in PowerPoint	1,18	3,32	3,43
1.2 Ability to make internet and network connections	1,12	3,73	3,61
7.2 Ability to add images / figures / graphics / tables / audio / video to slides in PowerPoint	1,12	3,39	3,52
6.2 Ability to transfer video / photo / security camera recordings to computer	1,1	3,27	3,37
5.3 Ability to make multiple copies at different scales	1,06	3,43	3,54
3.1 Ability to redirect e-mails to Outlook	1,05	3,60	3,69
6.3 Ability to adjust the size of image files	1,05	3,34	3,46

Table 11 presents the distribution of the skills of the school managers according to Moore's (2008) requirement determination model when the in-service training needs of the technology are listed in terms of their importance level and skill title categories.

Table 11: Categorical Distribution of Skills Organized According to Needs Assessment Model of Moore (2008)

Skills	Skill Difference s ($\bar{X}$)	Importance of the skills for the work ($\bar{X}$)	Priority of skill in professional development ($\bar{X}$)
8. Preparing a web page			
8.2 Ability to add links to the school web page	1,7	3,51	3,62
8.1 Ability to add text / photos / videos to the school web page	1,49	3,60	3,67
4. Files and programs			
4.4 Ability to format computer	1,62	3,43	3,53
2. Working with Word/Excel			
2.5 Ability to create formula in Excel	1,51	3,58	3,70
2.8 Ability to change my saturation types (docx / xlsx-pdf, doc / docx, etc.)	1,24	3,53	3,62
2.6 The ability to filter / sort data in Excel	1,23	3,52	3,63
7. Working with PowerPoint			
7.4 Ability to convert a presentation file to PowerPoint	1,47	3,16	3,30
7.3 Ability to make presentation timing in PowerPoint	1,18	3,32	3,43
7.2 Ability to add images / figures / graphics / tables / audio / video to slides in PowerPoint	1,12	3,39	3,52
6. Sound / video / photo / security camera			
6.1 Ability to enter a program (set ring)	1,26	3,24	3,27
6.2 Ability to transfer video / photo / security camera recordings to computer	1,1	3,27	3,37
6.3 Ability to adjust the size of image files	1,05	3,34	3,46
5. Printer / scanner / copier			
5.2 Ability to share printer on computer network	1,23	3,39	3,48
5.3 Ability to make multiple copies at different scales	1,06	3,43	3,54
1. Hardware			
1.2 Ability to make internet and network connections	1,12	3,73	3,61
3. Electronic mail (email)			
3.1 Ability to redirect e-mails to Outlook	1,05	3,60	3,69

When the Table 11 is examined, a possible in-service training program of the school administrators working in the province of Zonguldak in the field of technology is included in all skill topics included in the Determination of In-Service Training Needs of Technology Managers. These topics are Hardware, Working with Word / Excel, Electronic mail (e-mail), Files and programs, Printer / scanner / copier, Audio / video / photo / security camera, Working with PowerPoint and Web page preparation.

Another research question of the study aimed to determine the preferred methods of school administrators to transfer knowledge and skills. The majority of the school administrators working in Zonguldak province stated that the school administrators had the first choice in the in-service training program in the In-Service Training Needs Assessment Report. On the other hand, the least preferred form of in-service training is to take elective courses from universities.

4. Discussion and Conclusion

In the study, it is understood that school administrators use computer and internet technologies when they have the knowledge and skills they need to have technology. Görgülü, Küçükali and Ada

(2013) stated that school administrators actively use programs such as word processing, spreadsheet, presentation, internet, e-mail, e-okul (e-school) and MEBBIS. In addition, although they need in-service training, the school administrators have the ability to prepare an internet page and the skills they need in their program. The data obtained in this study on the knowledge and skills that school administrators should have for technology overlaps with the results obtained in Görgülü, Küçükali and Ada (2013) studies.

Günbayı and Cantürk (2012) stated that school administrators and teachers, each of whom are candidate administrators, should have the knowledge and skills to use word processing program, e-mail usage and internet usage, table-account, database and presentation programs. In another study, Günbayı and Cantürk (2011) stated that school administrators are expected to have knowledge of current programs, especially basic computer hardware, word processing, tables, presentation program, internet use and e-mail. The findings of Günbayı and Cantürk (2011) and Günbayı and Cantürk (2012) are consistent with the findings of this study.

School administrators, staff services, student services, teaching services, training services and school operations under the titles they perform the Ministry of National Education in 2007 by the Ministry of Education Information Systems (MEBBIS) system through the system of routine routines of past school managers to transfer the newly designed electronic environment mandatory. This has led to the diversification and change of roles expected of school administrators (Hacıfazlıoğlu, Karadeniz and Dalgıç, 2011). Akbaba-Altun (2002) also stated that only the school principals who know, use and adopt the technology should be able to perform these changing roles. The principal knowledge and skills they need for technology in the new roles of school principals emerging with changing technology revealed findings related to this research question.

Nearly all of the knowledge and skills of the school administrators about technology are average and above average. The fact that school managers' changing roles with technology necessitated the active use of technology themselves was reflected in the results of current skill levels. Kajs, Sanders, Willman, Alaniz, Brott and Gomez (1999) stated that school administrators are inadequate in the fields of internet, e-mail, presentation programs and database programs, especially word processing programs, spreadsheet programs and web pages. In addition, in 2002, Karslı, Gündüz, Titrek and Hamedoğlu (2002) used school administrators to use keyboard, mouse, open file, write a text, save and delete data, use CDs, install programs, use operating systems, package programs. (Word, Excel, PowerPoint, Access, SPSS) have stated that they are insufficient in terms of skills. However, in later years Görgülü, Küçükali and Ada (2013) found that the majority of school administrators were sufficient in applications such as word processing, spreadsheet, presentation, internet, e-mail, e-school and MEBBIS but the database, web page preparation, animation, graphics it was found to be inadequate in the use of programming and electronic board.

In recent years, the active use of technology in education and management services has been positively influenced by the school administrators' skill levels in technology over the years. In this study, the findings of the school administrators' current knowledge and skills related to technology reflect this change. It is understood that school administrators have the ability to print the selected field in Word / Excel at the highest level in terms of current knowledge and skill levels related to technology and they have the ability to add link in the school web page. These findings suggest that school administrators use word processing programs more actively. However, as determined in Görgülü, Küçükali and Ada (2013) studies, it was found that the skills of organizing the school website were insufficient compared to other skills.

In Salazar's (2007) study, school administrators stated that they needed more vocational training for the new roles expected from them. In addition, in the master thesis study, Ergişi (2005) stated that school administrators consider themselves less adequate in preparing presentations, electronic

spreadsheet programs and e-mail. In this study, it was determined that school administrators aim to have a skill level that is close to perfect level in all skills except for the ability to enter an alphabet program in the survey (ring settings) and to convert the presentation file into PowerPoint. As a result, it is understood that school administrators desire to have the highest level of skills in technology. The expectation that school administrators should be the leaders who continue their professional development and follow the technology (Gürbüz, Erdem and Yıldırım, 2013) may be a factor in explaining the school administrators' desire to progress in technology-related skills. McGee (2015) stated that the school leaders, who are technology leaders, have the desire to work with technology and desire to learn life-long depending on the ever-changing technology.

Görgülü, Küçükali and Ada (2013) stated that school administrators need training in web page preparation, animation and graphic programs. Balkar and Sahin (2012) stressed that teachers and school administrators' deficiencies in technology literacy should be eliminated. In addition, the results of the study showed that school administrators do not have sufficient knowledge in electronic spreadsheet programs and presentation programs (Afshari, Bakar, Luan, Samah and Fooi, 2008; Günbayı ve Cantürk, 2012). The results of this study showed that school administrators were most in need of knowledge and skills about electronic spreadsheet program and electronic presentation program, especially web page editing. These results coincide with the results of other studies (Afshari, Bakar, Luan, Samah and Fooi, 2008; Balkar and Sahin, 2012; Gorgulu, Kucukali and Ada, 2013; Günbayı and Canturk, 2012).

Görgülü, Küçükali and Ada (2013) stated that there is a need for school administrators to correct their deficiencies in preparing web page. In addition, in this study, it was found out that 3 skills of the skills mentioned in the main topic of working with Word / Excel “were high for the job. The fact that school administrators use the word processor (Afshari, Bakar, Luan, Samah and Fooi, 2008) and spreadsheet programs (Görgülü, Küçükali and Ada, 2013) increases their importance for the job.

Afshari, Bakar, Luan, Samah and Fooi (2008) and Günbayı and Cantürk (2012) stated that school administrators regularly use word processing programs. As a result of the use of word processing programs on a regular basis, in this study, school administrators stated that the skills related to word processing in professional development were important in professional development. Similarly, it is emphasized that school administrators should be competent in electronic spreadsheet programs and e-mail usage (Ibrahim, Razak and Kenayathulla, 2013). School administrators who participated in this study stated that electronic spreadsheet programs and e-mail use skills were important in professional development.

It has been stated that the trainings to be made for school administrators and teachers should be designed in a way to put educators on the fight (Schleede, 2011). In recent years, distance education, which was developed as an alternative, was used in in-service trainings. However, the school administrators stated that the in-service training programs provided by distance education were insufficient and should be supported by face-to-face courses (Ertmer, Bai, Dong, Khalil, Hee Park and Wang, 2002). Similarly, in another study, school administrators stated that they did not find the in-service training given by the distance education program applied to them (Yılmaz and Esen, 2015). In this study, it was observed that school administrators were not among the preferred methods of distance education.

Yılmaz and Esen (2015) stated that the trainings are theoretical rather than practical as a result of the studies they conducted in-service training programs in our country. They defined this as inadequacy. It is understood that participants preferred the in-service training option in the training of all skills related to technology. It should be aimed that the in-service training program prepared according to these data should be an applied program. In order to determine the priorities of the issues to be included in the in-service training program, skill difference scores should be considered as priority.

In addition to the skill difference scores, the order of the subjects included in the in-service training should be determined and similar skills should be in the same group.

Yılmaz and Esen (2015) stated that the trainings are theoretical rather than practical as a result of the studies they conducted in-service training programs in Turkey. In this study, the findings obtained from the interviews with the school administrators revealed that the instructor who conducts in-service training should be experts in the field of Computing. Yılmaz and Esen (2015) conducted an analysis of the in-service training programs conducted in Turkey and as a result, they found that the environment conditions and educational materials where training programs were carried out were insufficient. In this direction, the environment in which the training program will be carried out should be suitable for the education of all the materials and conditions required by the participants and it is an environment where the participants are easy to access (Akdemir, 2012). During the implementation of the training program, the authorities should consider these factors and the environment in which the in-service training program will be carried out should be determined accordingly. Yılmaz and Esen (2015) concluded that the participants did not find the distance education programs they attended effective in the analysis of their in-service training programs. In another study, Ertmer et al. (2002) stated that school administrators think that education on internet alone will be insufficient and they should be supported with face to face lessons.

5. Suggestions for Further Research Studies

The reason why school administrators prefer practical in-service training to other trainings should be examined in future studies.

REFERENCES

- Afshari, M., Bakar, K. A., Luan, W. S., Samah, B. A., ve Fooi, F. S. (2008). School leadership and Information communication technology. *Online Submission*, 7(4).
- Akbaba-Altun, S. (2002). Okul yöneticilerinin teknolojiye karşı tutumlarının incelenmesi. *Çağdaş Eğitim*, 286, 8-14.
- Akdemir, E. (2012). Aday Öğretmenlere Yönelik Hizmet İçi Eğitim Programının Değerlendirilmesi. *Eğitim Teknolojisi Kuram ve Uygulama*, 2(2), 25-41.
- Arokiasamy, A. R. A., bin Abdullah, A. G. K., ve İsmail, A. (2015). Correlation between Cultural Perceptions, Leadership Style and ICT Usage by School Principals in Malaysia. *Procedia-Social and Behavioral Sciences*, 176, 319332.
- Arslandaş, H. İ. ve Özkan, M. (2013). Eğitim müfettişlerinin hizmet içi eğitim ihtiyacı. *NWSA-Education Sciences* (8) 2, 179-192.
- Babadoğan, C ve Selvi, K. (1990). *Eksper kursu izleme ve değerlendirme araştırması*. Ankara: Toprak Mahsulleri Ofisi.
- Balkar, B., ve Şahin, S. (2012). Okul müdürlerinin bilgi yönetimi süreç yeterliklerinin ve liderlik becerilerinin incelenmesi. *Eğitim ve Öğretim Araştırmaları Dergisi*, 7(2), 178-188.
- Baloğlu, N. (2007). İlk Ve Ortaöğretim Okulu Yönetici Yardımcılarının Alması Gereken Hizmet içi Eğitim Konuları Hakkında Okul Yöneticilerinin Görüşleri. *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 5(1)167- 178.
- Benjamin, S. (1989). A closer look at needs analysis and needs assessment: Whatever happened to the Systems approach?. *Nonprofit Management Leadership*, 28: 12-16. DOI: 10.1002/pfi.4170280905

- Brown, B. (2013). *How principals cultivate technology integration and use professional learning networks*. Yayınlanmamış Doktora Tezi, Calgary Üniversitesi, Alberta, Kanada.
- Buabeng-Andoh, C. (2012). Factors Influencing Teachers' Adoption and Integration of Information and Communication Technology into Teaching: A Review of the Literature. *International Journal of Education and Development using Information and Communication Technology*, 8(1), 136-155.
- Büyüköztürk, Ş., Çakmak, E.K., Akgün, Ö. E., Karadeniz, Ş. ve Demirel, F. (2008). *Bilimsel araştırma yöntemleri*. Ankara: Pegem A Yayıncılık.
- Çetin, N. (2008). Kuramsal liderlik çözümlemelerinin ışığında, okul müdürlüğü ve eğitilebilir durumsal liderlik özellikleri, *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 1 (23), 74-84.
- Ergişi, K. (2005). *Bilgi teknolojilerinin okulda etkin kullanımı ile ilgili okul yöneticilerinin teknolojik yeterliklerinin belirlenmesi (Kırıkkale ili örneği)*. Yayınlanmamış Yüksek Lisans Tezi, Kırıkkale Üniversitesi, Kırıkkale
- Ertmer, P. A., Bai, H., Dong, C., Khalil, M., Hee Park, S., ve Wang, L. (2002). Online professional development: Building administrators' capacity for technology leadership. *Journal of Computing in Teacher Education*, 19(1), 5-11.
- Gönen, S., ve Kocakaya, S. (2006). Fizik Öğretmenlerinin Hizmet İçi Eğitimler Üzerine Görüşlerinin. *Pamukkale Üniversitesi Eğitim Fakültesi Dergisi*, 19(19), 37-44.
- Görgülü, D., Küçükali, R., ve Ada, Ş. (2013). Okul Yöneticilerinin Bilgi Teknolojileri İle İlgili Eğitimleri Alma Ve Kullanma Durumlarının İncelenmesi. *Mehmet Akif Ersoy Üniversitesi Eğitim Bilimleri Enstitüsü Dergisi*, 2(3).
- Gözler, A. (2008). Öğretmenlerin mesleki gelişiminde okul yöneticilerinin güdüleme rolleri. *Education Sciences*, 3(1), 66-79.
- Günbayı, İ. ve Cantürk, G. (2012). Okul yöneticilerinin bilgisayar teknolojisini kullanma düzeyleri ile öğretmenlerin bilgisayar teknolojisini kullanma düzeylerinin karşılaştırılması, *International Journal of Human Sciences*, 9(2), 1143-1475.
- Gürbüz, R., Erdem, E., ve Yıldırım, K. (2013). Başarılı Okul Müdürlerinin Özellikleri. *Dicle Üniversitesi Ziya Gökalp Eğitim Fakültesi Dergisi*, 20, 167179.
- Hacıfazlıoğlu, Ö., Karadeniz, Ş., ve Dalgıç, G. (2011). Okul yöneticilerinin teknoloji liderliğine ilişkin algıları: Metafor analizi örneği. *Eğitim Bilimleri Araştırmaları Dergisi-Journal of Educational Sciences Research*, 7(1).
- Hayytov, D. (2013). *Eğitim yöneticilerinin teknoloji liderliği yeterlik algıları ile öğretmenlerin teknolojiye yönelik tutumları arasındaki ilişki*. Yayınlanmamış Yüksek Lisans Tezi, Gazi Üniversitesi, Ankara
- İbrahim, M. S., Razak, A. Z. A., ve Kenayathulla, H. B. (2013). Smart Principals and Smart Schools. *Procedia-Social and Behavioral Sciences*, 103, 826-836.
- Karsli, M. D., Gündüz, H. B., Titrek, O., ve Hamedoğlu, M. A. (2002). Eğitim yöneticileri ve öğretmenlerin bilişim teknolojilerini kullanma düzeyleri ve bilişim teknolojilerinden yararlanmalarını engelleyen nedenler. *Sakarya Üniversitesi Eğitim Fakültesi Dergisi* (4), 176-188.
- Kaufman, R. (1983). *Needs assessment: A user's guide*. Englewood Cliffs, NJ: Educational Technology Publications.

- Kaufman, R. A., ve Herman, J. J. (1991). *Strategic planning in education: Rethinking, restructuring, revitalizing*. USA: Technomic Publication Company.
- Küçüktepe, C. (2013). Sınıf öğretmenlerinin hizmet içi eğitim ihtiyaçlarının öğretmen görüşlerine göre belirlenmesi. *Abant İzzet Baysal Üniversitesi Eğitim Fakültesi Dergisi*, 13 (2), 26-43.
- McGee, R. (2015). *Technology professional development phenomena in today's schools*. Yayınlanmamış Doktora Tezi, Northeastern Üniversitesi, Boston, Massachusetts
- Moore, S. (2008). *Assessing the professional development needs of principals and leaders in PREK-12 educational settings*, Yayınlanmamış Doktora Tezi, New York.
- Odabaşı, H. F., & Kabakçı, I. (2007). Öğretmenlerin mesleki gelişimlerinde bilgi ve iletişim teknolojileri. Uluslararası Öğretmen Yetiştirme Politikaları ve Sorunları Sempozyumu, Bakü, Azerbaycan, 12-14.
- Öztürk, M., ve Sancak, S. (2007). Hizmet İçi Eğitim Uygulamalarının Çalışma Hayatına Etkileri. *Journal of Yaşar University*, 2(7), 761-794.
- Salazar, P. S. (2007). The Professional Development Needs of Rural High School Principals: A Seven-State Study. *Rural Educator*, 28(3), 20-27.
- Schleede, A. J. (2011). *Professional development and its impact on technology integration*. Yayınlanmamış Doktora Tezi, Wingate Üniversitesi, Matthews, N.C.
- Taymaz, H. (1986). Okul yönetimi ve yönetici yerleştirme, *Ankara Üniversitesi Eğitim Bilimleri Fakültesi Dergisi*, 19(1), 123-135.
- Taymaz, H. (1995). Teftişte karşılaşılan sorunlar ve öneriler. *Kuram ve Uygulamada Eğitim Yönetimi*, 7(1), 109-112.
- Witkin, B. R. ve Altschuld, J. W. (1995). *Planning and Conducting Needs Assessments: A Practical Guide*. Thousand Oaks, CA. Sage Publications.
- Yıldırım, A. ve Şimşek, H. (2011). *Sosyal bilimlerde nitel araştırma yöntemleri*, Seçkin Yayıncılık, Ankara
- Yılmaz, H. Y., ve Esen, D. G. (2015). An Investigation on In-Service Trainings of the Ministry of National Education (MONE). *Procedia-Social and Behavioral Sciences*, 186, 79-86.

Appendix 1: Okul Yöneticilerinin Teknolojiye Yönelik Hizmet İçi Eğitim İhtiyaçlarını Belirleme Anketi (Turkish version)

Demografik Bilgiler

- 1- Cinsiyet: ☐ Kadın, ☐ Erkek
- 2- Eğitim Düzeyi: ☐ Eğitim Enstitüsü, ☐ Lisans Tamamlama, ☐ Lisans, ☐ Yüksek Lisans, ☐ Doktora
- 3- Yönetici Olarak Kıdeminiz: ☐ 0-5 yıl, ☐ 6-10 yıl, ☐ 11-15 yıl, ☐ 16-20 yıl, ☐ 21 ve üzeri
- 4- Yöneticilik Göreviniz (vekillik dâhil): ☐ Müdür, ☐ Müdür Başyardımcısı, ☐ Müdür Yardımcısı

Hizmet İçi Eğitim İhtiyaçlarını Belirleme Anketi

Lütfen ölçeği doldurur iken aşağıdaki Anket Anahtarını kullanınız. Örneğin;

Bilgisayarda animasyon hazırlama becerisi için bir yönetici ölçeği aşağıdaki gibi doldurabilir.

Bilgisayarda animasyonlar hazırlama becerisi				
Mevcut beceri düzeyim	Sahip olmak istediğim beceri düzeyi	Bu becerinin iş için önemi	Mesleki gelişim için belirtilen becerinin öncelik sırası	Olası hizmetçi eğitim için tercih edilen metod
5	5	5	5	Uygulamalı hizmetçi eğitim
4	4	4	4	Seminer şeklinde hizmetçi eğitim
3	X 3	3	3	X Mentör eşliğinde birebir çalışma
2	2	2	X 2	Yardımcı kitap/broşür/klavuz
X 1	1	X 1	1	İnternet üzerinden uzaktan eğitim
				Üniversitelerden seçmeli ders alınması

Anket Anahtarı

Mevcut beceri düzeyim (Bu alanda)	Sahip olmak istediğim beceri düzeyi (Bu alanda)	Bu becerinin iş için önemi	Mesleki gelişim için belirtilen becerinin öncelik sırası
5- Mükemmel beceri	5- Yüksek beceri düzeyi	5- Kesinlikle gerekli	5- Bu alanda mesleki gelişimin öncelik sırası oldukça yüksek
4- Ortalamanın üzerinde beceri	4- Ortalamanın üzerinde beceri düzeyi	4- Oldukça önemli	4- Bu alanda mesleki gelişimin öncelik sırası yüksek
3- Ortalama beceri	3- Ortalama beceri düzeyi	3- Önemli	3- Bu alanda mesleki gelişime ihtiyaç var
2- Bu alanda düşük beceri	2- Bu alanda düşük beceri düzeyi	2- Biraz önemli	2- Bu alanda mesleki gelişimin öncelik sırası düşük
1- Bu alanda beceri sahibi değil	1- Bu alanda beceri sahibi olmak istenmemekte	1- Bu iş için önemli olmayan bir beceri	1- Bu alanda mesleki gelişime ihtiyaç yok

Beceriler
1. Donanım
1.1 Bilgisayar/tarayıcı/projeksiyon/yazıcı kablo bağlantılarını yapma becerisi
1.2 İnternet ve ağ bağlantılarını yapma becerisi
1.3 Ses sistemi (anfi, hoparlör ve mikrofon) bağlantılarını yapma becerisi
2. Word/Excel ile çalışma
2.1 Word/Excd'de sayfa düzenini ayarlama becerisi
2.2 Word/Excd'de resim/şekil/fotoğraf ekleme becerisi
2.3 Word/Excd'de tablo/grafik oluşturma becerisi
2.4 Word/Excd'de seçili alan yazdırma becerisi
2.5 Excd'de formül oluşturma becerisi
2.6 Excd'de veri filtreleme/sıralama becerisi
2.7 Word/Excd'de bul-değiştir özelliğini kullanabilme becerisi
2.8 Doysa türlerini değiştirme becerisi (docx/xlsx-pdf, doc/docx, vb.)
3. Elektronik posta (e-posta)
3.1 E-postaları Outlook'a yönlendirme becerisi
3.2 E-posta ile toplu mesaj gönderme becerisi
3.3 E-posta ile dosya gönderme ve alma becerisi
4. Dosya ve programlar
4.1 Harici disk/Flash/CD/DVD'ye dosya yedekleme yapma becerisi
4.2 Dosya sıkıştırma/açma becerisi
4.3 Virüs taraması yapma becerisi
4.4 Bilgisayarı formatlama becerisi
4.5 Bilgisayara program ekleme/kaldırma/güncelleme becerisi
5. Yazıcı/tarayıcı/fotokopi
5.1 Belge/resim tarama ve kaydetme becerisi
5.2 Bilgisayar ağı üzerinde yazıcı paylaşırma becerisi
5.3 Farklı ölçeklerde çoklu fotokopi alma becerisi
6. Ses/video/fotoğraf/güvenlik kamerası
6.1 Anfiye programı girme (zil ayarları) becerisi
6.2 Video/fotoğraf/güvenlik kamera kayıtlarının bilgisayara aktarma becerisi
6.3 Resim dosyasının boyutlarını ayarlama becerisi
7. PowerPoint ile çalışma
7.1 PowerPoint'te slayt düzeni oluşturma becerisi
7.2 PowerPoint'te slaytlara resim/şekil/grafik/tablo/ses/video ekleme becerisi
7.3 PowerPoint'te sunu zamanlama ayarı yapma becerisi
7.4 PowerPoint'te sunu dosyasını videoya dönüştürme becerisi
8. İnternet sayfası hazırlama
8.1 Okulun web sayfasına metin/fotoğraf/video ekleme becerisi
8.2 Okul web sayfasına bağlantı (link) ekleme becerisi