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School Administrators' Attitudes towards Technology: Do They Resist to Change?

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Abstract

This study aimed to examine the relationship between school administrators' attitudes towards technology and their resistance to change. The data were collected from 350 principals and assistant principals from public schools in Mersin, Turkey, in 2020-2021 academic year. Assessment of School Administrators' Attitudes towards Technology Scale and Resistance to Change Scale were used to collect the data. Analysis results revealed that assistant principals are better at adopting technology, following technology and internet use than principals; however, principals have fear of technology more than assistant principals. In addition, school administrators' attitudes towards technology are significantly correlated with their resistance to change.

Keywords: *Attitude Towards Technology; Change; Resistance to Change; School Administrators*

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Introduction

The rapid progress of technology and information has affected all areas of life. The societies that are leading in technology and knowledge production can get ahead of other societies in terms of economic growth and development (Steenhuis and De Bruijn, 2012). From this point of view, the education system, which will raise qualified manpower that will ensure economic growth and development, has a major role. With the developing technology, it is improbable not to experience a change in the understanding of education (Anwar et al., 2021). The concept of "Educational Technology" has emerged along with integration of technology with the education system. The use of technology in education has become an inevitable necessity, as in other areas of life (McCormick, 2020).Therefore, education, which cannot be considered separately from technology, is undergoing a transformation with the use of information technologies in a way that improves and enriches the learning process. Parallel to this, there is an increasing need for school administrators and teachers who can keep up with the development and change.

In today's education system, it is not possible for the administrators to manage the school only with their knowledge and ability to use the computer well. Akay (2020) stated that educational systems are influenced by technological developments such as other systems and technology emerges as an important facilitator and a motivating factor in learning-teaching processes. The rapidly advancing technology and its reflections on the school have forced school administrators to acquire new skills. Akbaba Altun (2002) state that school administrators should not only be good education and training leaders, but also have good technological competence in parallel with rapid technological changes. Turan (2002) argues that administrators have responsibilities such as leading schools, teachers and students on information and communication technologies, encouraging them to use these technologies, providing training for teachers on this subject and using technology effectively in school management. In addition to the technological competence of school administrators, leading and mentoring teachers in the effective use of technology in education also appears as a requirement of the leadership characteristic of the school administrator. Deryakulu and Olkun (2009) highlight the importance of school administrators to fulfill their technological leadership duties, especially in developing countries such as Turkey, in order to use the limited resources efficiently to integrate technology into education. In addition, nowadays, it is insufficient for teachers to have only content knowledge and pedagogical knowledge in the context of Technological-Pedagogical and Content Knowledge (TPACK), teachers are expected to interrelate their knowledge of content and pedagogy to their knowledge of technology (Akay, 2018).

The concept of change comes along with technology. Today, the whole world is in a rapid and continuous change with the technological developments that occur with the increasing number of communication and transportation ways. All organizations are affected by the developments in information and material technology, the changing society structure with these developments and

the changing needs depending on the change in the social structure, and the methods developed to meet these needs. Çalık (2003) expresses that organizations' ability to continue their lives, become more efficient, reach their goals in a more beneficial way and have competitive power depends on their constant change and innovation. Since organizations are not alive, their change depends on the change of the people who make up the organization (Acuner, 2000). One of the most important organizations of society is schools. Schools have an impact on people from all walks of life (Lee et al., 1991). Schools, which train the manpower to work for organizations and constantly interact with the environment, are both affected by the changes in their environment and force their environment to change. According to Lunenburg (2010), schools have to keep up with change in order to achieve their goals at the highest level and be an effective school.

It is a fact that change is necessary for organizations to continue their existence. However, organizational members are not always ready or willing to change and it is even claimed that they often avoid change or take a stance against change (Bovey & Hede, 2001). For this reason, all kinds of change, whether planned or unplanned, wide-ranging or narrow-scoped, are likely to encounter resistance. According to Bruckman (2008), the reasons for organizational employees' resistance to change can be listed as uncertainties (loss of position, control and power), giving up habits, economic conditions, group pressure, and fear of failure. Change can also create fear of losing rights such as decision-making authority, access to information and autonomy (Lunenburg, 2010). It seems inevitable that employees will resist change against these uncertainties and possible consequences.

One of the most important factors that create the need for change in schools over time is technological developments. The rapid development of the field of informatics and the continuous increase in the amount of information to be achieved requires adapting to this situation (D'Agustino, 2011). According to Evans (1996), the resistance of the organization to change in schools is the main reason why the change is not as desired. Technology, which is an important indicator of change and developing at a dizzying speed, can cause fear and resistance in school administrators. Therefore, it can be expected that there is a relationship between school administrators' attitudes towards technology and their resistance to change. This study aims to determine whether there is a significant relationship between school administrators' attitudes towards technology and their resistance to change.

Technology and School Management

Technology is of great importance in the rapidly developing and changing world. There are many definitions of technology in the literature. Seferoğlu (2006) describes technology as “the application of observational and proven knowledge to achieve certain goals and solve certain problems”. İşman (2015) defines technology as “practical applications used to organize information with proven accuracy in order to achieve certain goals, meet needs and make life easier” emphasizing the relationship between technology and need.

Technology, which is actively used in almost every field of daily and business life, and the changes brought about by technology undoubtedly affect education systems to a great extent.

The use of technology in the field of education brings us the concept of educational technologies. According to İşman (2008), educational technology is "a process that enables the creation and regulation of the learning and teaching environment, helps educators to solve problems, and contributes to the planning and preparation of the necessary tools and equipment". It is thought that the use of educational technologies is very important for effective and efficient education and training in schools. In this context, school administrators have essential duties, roles and responsibilities. As new technologies develop, school administrators need to keep up with these technologies and lead and support their subordinates in this regard. Turan (2002) defines technological leadership role of school administrators as pioneering for teachers and students in information and communication technologies, encouraging them to use these technologies, providing training for teachers on this subject and using technology effectively in school management. The purchase of technological devices to the school, the establishment of information technology workshops and the effective use of technology in school management systems can be added to these responsibilities. From this point of view, school administrators are expected to understand technology, know about technological applications, adopt technology. In short, they should have technological competence. Therefore, the attitudes of school administrators towards technology emerge as a very important issue.

Attitude towards Technology

Attitude is an evaluation of any object of thought, and attitude objects may be anything a person may hold in mind, concrete or abstract, including things, people, groups, and ideas (Bohner and Dickel, 2011). Çelik and Kahyaoğlu (2007) mention that the subject of attitude can be any object, individual, group of individuals, or any abstract concept.

What people think about technology can be expressed as attitudes towards technology. In order for technology to be used actively in schools, both in administrative processes and in classroom learning environments, administrators should have sufficient technological knowledge and inclination (Machado and Chung, 2015). At the same time, knowing their affective characteristics of administrators such as interest, attitude, etc. towards technology is important for schools that have a dynamic state since technology is an important factor for change and administrators are expected to be an effective change leader.

Change

Change is defined as bringing anything from one level to another over a period of time. Changing the location of people or objects as well as converting features such as personal information and abilities from their current state to a different position is also called change. Helvacı (2011) describes change as "a process that swings from one situation to another, has no direction and judgment, can be spontaneously or acted upon by people (planned or unplanned), and is positive if it happens in a planned direction, otherwise negative". Based on the saying "The only constant is change", it can be alleged that change is an invariable part of the system and that all sectors are affected by change.

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Volatility, uncertainty, complexity and ambiguity (VUCA) are the situations that are constantly experienced in today's working life conditions (Rimita, Hoon, and Levasseur, 2020). Therefore, organizations today continue their activities in a constantly changing environment. Organizational change is a multidimensional concept, thus, it is very difficult to give a precise definition. Organizational change can be defined as "a process that enables organizations to move from their current state to a state in which they wish to increase their effectiveness in the future" (Gareth, 1998). According to Barutçu (2000), organizational change is "all positive or negative, qualitative or quantitative, planned or unplanned changes that may occur in various subsystems and constituents of organizations or in the system of relations between them". These changes can be positive or negative. When positive, it can be said that traditional or old methods that lead to low productivity and effectiveness in the organization are ejected from ideas, behaviors, relationships, materials and machines, which helps the organization improve with more efficient and effective innovations. However, when it is negative, it can reduce the efficiency and effectiveness of the organization.

Organizations are open systems that constantly interact with the environment. Therefore, they have to change in order to keep up with the changes occurring in their environment. From the perspective of organizational change, the change of organizations is related to the ability of employees to change, learn and adapt to innovations (Acuner, 2000). Change is essential for organizations to survive. Organizations that cannot adapt to change do not survive for a long time.

Change affects all segments of society as well as the education system. The educational environment is also in constant change, and schools are expected to adapt to changing conditions in order to achieve their goals and be effective. In this sense, schools both affect the environment as the pioneer of change and are affected by the changes in the environment. If educational organizations cannot develop strategies to analyze and manage the new situation brought about by change, and if they do not have the competence to manage change, they are inevitably confronted with many problems (İnandı et al., 2015).Educational organizations have to keep up with the changes both inside and outside themselves in order to create the quality outputs expected from them. From this point of view, the change in educational organizations is not to be seen as a temporary situation that is applied when needed, but to be perceived as a part of the organizational life.

Educational organizations are both a cause for change and a result of change due to their position in society. While educational organizations are affected by the changes around them, they also have the responsibility to initiate and direct change in society. Educational organizations can fulfill this responsibility by changing themselves first (Çalık, 2003). They need to adapt to change in order to meet the demands and needs of their stakeholders. These needs are gradually increasing with the effect of changes in social, political and economic systems. Meeting all these different needs arising from the internal and external environment undoubtedly necessitates the planned change (Kulu, 2007).

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There is no doubt that rapid development in the world force organizations to change. It seems very difficult for an organization to survive without achieving change process. Uslu (2006) states that the need for organizational change can sometimes occur as a warning from within the organization itself, and sometimes in order to respond to a need shaped by external environmental conditions. Therefore, the reasons that force organizations to change can be divided into two as internal and external reasons.

Organizations are composed of internal elements that are intertwined and interact with each other. These internal elements can be related to the structure, people, technology or organizational goals (Çalık, 2003). Any change observed in one or more of these internal elements is accepted as the main reason for organizational change. According to Erdoğan (2002), reasons such as growth within the institution, internal mergers, and management changes are internal forces of the change.

It is very difficult to generalize the external reasons that force organizations to change. It is possible to say that the impact and number external reasons are greater in the organization, and that managers have less control over them. Technological, economic, political, cultural, legal, natural and similar developments can be considered as the external factors that force organizations to change (Erdoğan, 2002).

Resistance to Change

Organizations need to adapt to changing conditions in order to exist and remain strong in the future. However, the process of adapting to change is not as easy as expected. People may not always be prepared for unexpected events, different things or surprises in many areas of life (İnandı et al., 2020). Change creates a deep resistance in people and organizations. Resistance to change is related to the attitude of employees towards change as well as the scope and content of change (İnandı et al., 2013). Change can create a lot of anxiety as it is based on moving from a known state to an unknown future. People may doubt whether their current skills will be valuable in the future after the change. Therefore, individuals are uncertain about whether they will be effective and successful in the new situation (Can, 2009).

While the employees of the organization believe in the necessity of change on the one hand, they are opposed to the change on the other hand. Although employees believe in the necessity of organizational change, they show resistance to change because it is not easy to give up habits (Ford, Ford, & D'Amelio, 2008).In addition, according to Helvacı (2010), if change threatens people's existing skills and new practices require higher-level skills, resistance to change is experienced. Tunçer (2013) states that while organizational change solves some problems, it can also cause new problems. Resistance to change does not always lead to negative results. Organizational leader can overcome resistance to change with various strategies such as communicating effectively, involving the employees of the organization in the change process, understanding the concerns and fears of the employees of the organization through empathy, or explaining the change process in different ways to those who show high resistance (İnandı et al.,

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2013).Change and resistance to change can sometimes be a conflict that leads to healthy discussions about the idea to be implemented and ultimately leads to better decisions.

Relationship between Attitude towards Technology and Resistance to Change

Developments in technology are regarded as an important factor affecting social life and, accordingly, change in organizations all over the world. Especially the rapid spread of the internet has caused a great number of changes. As a natural consequence of this social change, organizations use the internet and new technologies in order to get information faster and to adapt to the changes occurring in the world faster. This situation has led organizations into the process of continuous change (Özençel, 2007). Therefore, one of the reasons forcing organizations to change is technological reasons. With the rapidly developing technology, individuals may oppose change due to various reasons such as uncertainties (loss of position, control and power), giving up habits, group pressure, fear of failure. This situation suggests that there is a considerable potential of relationship between attitudes towards technology and resistance to change.

Aim of the Study

The aim of this study is to determine the attitudes of school administrators towards technology in the dimensions of adopting technology, awareness of technological developments, following technology, benefiting the internet, using technology in the management process, and to reveal whether there is a significant relationship between school administrators' attitudes towards technology and resistance to change. Answers to the following questions were sought in the research:

(1) According to the perceptions of the administrators, do the attitudes of school administrators towards technology differ significantly according to their administrative position?
(2) According to the perceptions of the administrators, does the resistance of the school administrators to change differ significantly according to their administrative position?
(3) Is there a significant relationship between school administrators' attitudes towards technology and their resistance to change?
(4) To what extent do school administrators' attitudes towards technology predict their resistance to change?

Significance of the Study

The rapid progress in knowledge and technology has affected the education as well as every field in society. The development of technology has led to changes in the understanding of education, and has given birth to the concept of "educational technology". With the use of information technologies in a way that improves and enriches the learning process, changes have occurred in the duties and responsibilities of education administrators, and even added new roles and responsibilities over the current ones. School principals are expected to manage their institutions in the use of information technologies at school (Akbaba Altun, 2002). In this new managerial role called technological leadership, the manager should not only use technology effectively, but

also guide teachers and students in the education environment. Therefore, it is envisaged that this research will be important in terms of determining the level of attitudes of school administrators towards technology in terms of adopting technology, awareness of technological developments, following technology, using the internet, and using technology in the administrative process.

Continuous developments in technology undoubtedly bring social changes. It is impossible for education systems, which are an important part of society, not to be affected by these changes. Educational organizations that can adapt to changes are successful and can continue their existence. This situation imposes new responsibilities on school administrators. School administrators are expected to be leaders of change in their schools. Unfortunately, adapting to change is not always easy. With the rapidly developing technology, school administrators can resist change due to various reasons such as fear of failure, anxiety about loss of position, control and power, uncertainty, unwillingness to give up habits, and group pressure. It is thought that this research will also be important in terms of determining the resistance of managers to change.

The changes created by technological developments and the resistance that can be exhibited against these changes make us think that there is a relationship between the attitude towards technology and resistance to change. Therefore, it is predicted that this research will contribute a lot to the literature by examining the relationship between administrators' attitudes towards technology and their resistance to change.

The literature review shows that both the attitudes towards technology and resistance to change have been studied with teachers. No study has been found by the researchers that deals with the attitudes of administrators towards technology and their resistance to change together. Thus, this research is thought to be a major contribution to the literature.

In addition, the findings, comments, results and suggestions obtained as a result of this study are significant in terms of contributing to the researchers who conduct research on the attitude of administrators towards technology and resistance to change. Today, effective use of technology in education has become a necessity, and it is predicted that this research will be important by determining the problems of change encountered when using educational technologies in schools.

Method

Research Design

When considering that this research focuses on the significant relationship between school administrators' attitudes towards technology and their resistance to change, a relational survey model was employed since numerical data were used to determine certain variables and the relationship between them. Relational survey model is a research model for determining the presence and/or degree of co-variance among two or more variable (Karasar, 2013).

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Research Sample

The population of this research consists of a total of 1770 administrators: 372 in Akdeniz, 471 in Toroslar, 543 in Yenişehir and 384 in Mezitli districts of Mersin, Turkey, in the 2020-2021 academic year. The four central districts were selected in terms of the accessibility of the sample. In order to determine the sample size, the following formula, which was prepared for the population with a certain size, was used (Cochran, 2007).

$$n = \frac{Nt^2pq}{d^2(N-1) + t^2pq}$$

Values Used in Determining Sample Size

n: Number of individuals to be sampled

N: Number of individuals in the universe, 1770

p: The incidence of the case to be examined, 0.5

q: Frequency of absence of the case to be analyzed, (1-p) 0.5

t: The value of the confidence level, 1.96

d: Tolerable error rate, 0.05

Based on the formula above, n=315 was calculated. In the 2020-2021 academic year, the research was conducted with 350 school principals and assistant principals from all levels of public schools in the central districts of Mersin. Using stratified sampling, these administrators were selected in the sample by the representation rate of the central districts to the population.

Research Instrument

Two measurement tools were used in this study to collect data. First, a five-point Likert-type and 38-item "Assessment of School Administrators' Attitudes towards Technology" scale developed by Akbaba Altun (2002) was employed to determine school administrators' attitudes towards technology. The scale offers options that vary between “definitely agree” (5) and “definitely disagree” (1). There are 38 items in 9 sub-dimensions: 19 are negative and 19 are positive items. The sub-dimensions of the scale are adopting technology, awareness of technological developments, following technology, technology and management, fear of technology, internet use, trust in technology, pessimism about technology and technology use. While the cronbach-alpha coefficient of the scale is calculated as 0.91, the cronbach-alpha coefficients of its sub-dimensions vary between 0.58 and 0.84 (Akbaba-Altun, 2002).

The other instrument for collecting data in this study is a five-point Likert-type 17-item “Resistance to Change” scale developed by Oreg (2003). An international validity study of the scale was carried out in 17 countries with a total of 4201 participants. Accordingly, the scale's

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conbach-alpha coefficients were calculated between .72 and .85 in 17 countries, with an average of .80. Scale consists of four dimensions: routine seeking (5 items), emotional reaction (4 items), short-term focus (4 items) and cognitive rigidity (4 items). The reliability coefficient of the scale in Turkey was found to be .70.

Data Analysis

A t-test was conducted to determine whether school administrators' attitudes towards technology and their levels of resistance to change differ significantly according to their position. Correlation analysis was also conducted to determine whether there is a significant relationship between school administrators' attitudes towards technology and their resistance to change. Finally, regression analysis was conducted to determine whether school administrators' attitudes towards technology predict their resistance to change. The results were interpreted and discussed in line with these analyses. In this study, $p<0.01$ and $p<0.05$ were used as significance levels.

Findings

The findings obtained in line with the research questions are given in this section.

Attitudes of School Administrators towards Technology by Their Position

The results related to the question “Do the attitudes of school administrators towards technology differ significantly according to their administrative position?” are given in Table 1.

Table 1.*T-Test Results on the Opinions of School Administrators on Their Attitudes Towards Technology According to Position Variable*

Attitudes Towards Technology	Position	N	X	Sd	t	p
Adopting Technology	Assistant Principal	103	4,43	,39	2,674	,008*
	Principal	86	4,28	,37		
Awareness of Technological Developments	Assistant Principal	103	4,55	,45	1,232	,220
	Principal	86	4,47	,45		
Following Technology	Assistant Principal	103	4,50	,59	2,656	,009*
	Principal	86	4,27	,58		
Technology and	Assistant	103	4,70	,41	,774	,440

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Management	Principal					
	Principal	86	4,65	,50		
Fear of Technology	Assistant Principal	103	2,37	,84	-2,873	,005*
	Principal	86	2,70	,76		
Internet Use	Assistant Principal	103	4,72	,42	2,919	,004*
	Principal	86	4,51	,56		
Trust in Technology	Assistant Principal	103	3,39	,68	,879	,381
	Principal	86	3,30	,71		
Pessimism about Technology	Assistant Principal	103	1,66	,58	-,515	,607
	Principal	86	1,71	,53		
Technology Use	Assistant Principal	103	4,59	,52	,954	,341
	Principal	86	4,51	,57		

**p<.05*

According to Table 1, the opinions of principals and assistants principals showed a significant difference by position variable in the dimension of "adopting technology" (t=2.674; p<.05), "following technology" (t=2.656; p<.05), "fear of technology" (t=-2.873; p<.05) and “internet use” (t=2.919; p<.05) while there is no significant difference in “awareness of technological developments” (t=1.232; p>.05), “technology and management” (t=.774; p>.05), “trust in technology” (t=,879; p>.05), "pessimism about technology" (t=-.515; p>.05) and "technology use" (t=,954; p>.05).

There is a significant difference between principals and assistant principals in terms of "adopting technology", "following technology" and "internet use". In these dimensions, it is seen that the mean of assistant principals is higher than that of principals. In the dimension of "fear of technology", the average of principals is higher than that of assistant principals.

School administrators’ resistance to change by their position

The results related to the question “Does the resistance of the school administrators to change differ significantly according to their administrative position?” are given in Table 2.

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Table 2.*T-Test Results on the Opinions of School Administrators on Their Resistance to Change According to Position Variable*

Resistance to Change	Position	N	X	Sd	t	p
Routine seeking	Assistant Principal	103	1,80	,49	-2,018	,045*
	Principal	86	1,95	,57		
Emotional reaction	Assistant Principal	103	2,77	,92	,351	,726
	Principal	86	2,72	,97		
Short-term focus	Assistant Principal	103	2,06	,69	-,831	,407
	Principal	86	2,15	,76		
Cognitive rigidity	Assistant Principal	103	3,41	,75	,030	,976
	Principal	86	3,40	,73		

**p<.05*

According to Table 2, the position variable causes a significant difference in the "seeking routine" dimension (t=-2.018; p<.05) between assistant principals and principals, while no significant difference was found between them in "emotional reaction" (t=.351; p>.05), "short-term focus" (t=-.831; p>.05) and “cognitive rigidity” (t=.030, p>.05) dimensions.

In routine seeking dimension, the mean of opinions of assistant principals is ($\bar{X}$=1.80) and that of principals is ($\bar{X}$=1.95). Accordingly, there is a significant difference between the opinions of the principal and the assistant principals.

The Relationship between School Administrators' Attitudes towards Technology and Their Resistance to Change

The results related to the question “Is there a significant relationship between school administrators' attitudes towards technology and their resistance to change?” are given in Table 3.

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Table 3.*Results of Correlation Analysis Regarding the Relationship Between the Attitudes of School Administrators Towards Technology and Their Resistance to Change*

	1	2	3	4	5	6	7	8	9	10	11	12	13	X	Sd
Adopting Technology	1													4,36	0,385
Awareness of Technological Developments	,516**	1												4,5168	0,45
Following Technology	,786**	,530**	1											4,40	0,60
Technology and Management	,404**	,408**	,334**	1										4,67	0,45
Fear of Technology	-,215**	-,347**	-,247**	-,126	1									2,52	0,82
Internet Use	,263**	,208**	,155*	,323**	-,102	1								4,62	0,49
Trust in Technology	,022**	,227**	,252**	,047	-,256**	,185*	1							3,35	0,69
Pessimism about Technology	-,280**	-,456**	-,169*	-,368**	,313**	-,386**	-,199**	1						1,68	0,56
Technology Use	,314**	,497**	,437**	,401**	-,351**	,403**	,347**	-,519**	1					4,55	0,54
Routine seeking	-,187*	-,295**	-,249**	-,337**	,157*	-,337**	-,084	,441**	-,315**	1				1,87	0,53
Emotional reaction	-,067	-,160*	-,162*	-,090	,201**	-,078	,020	,183*	-,101	,447**	1			2,75	0,94
Short-term focus	-,111	-,151*	-,175*	-,197**	,180*	-,118	-,019	,268**	-,163*	,386**	,543**	1		2,10	0,72
Cognitive rigidity	,183*	,033	,020	,093	-,072	-,004	-,031	,074	,022	,104	,187	,175*	1	3,40	0,74

**p<.05*
***p<.01*

Table 3 shows the correlation analysis results about the relationship between school administrators' attitudes towards technology and their resistance to change. Accordingly, seeking routine dimension of resistance to change has a significant negative correlation with adopting technology (r=-.187, p<.05), awareness of technological developments (r=-.295, p<.01), following technology (r =-.249, p<.01), technology and management (r=-.337, p<.01), internet use (r=-.337, p<.01), and technology use (r=-.315) , p<.01).However, routine seeking dimension has a positive significant relationship with fear of technology (r=.157, p<.05) and pessimism about technology (r=.441, p<.01).

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Emotional reaction dimension of resistance to change is in a negative correlation with awareness of technological developments (r=-.160, p<.05) and following technology (r=-.162, p<.05) while it has a significant positive correlation with fear of technology (r=.201, p>.01) and pessimism about technology (r=.183, p>.05).

Short-term focus, which is another sub-dimension of resistance to change, is negatively but significantly correlated with awareness of technological developments (r=-.151, p<.05), following technology (r=-.175, p<.05) technology and management (r= -.197, p<.05) and technology use (r=-.163, p<.05). On the other hand, it has a positive significant relationship with fear of technology (r=.180, p<.05) and pessimism about technology (r=.268, p<.01).

Cognitive rigidity, which is the last sub-dimension of resistance to change, has a positive and significant relationship only with adopting technology (r=.183, p>.05). It has no significant relationship with any other dimensions of attitudes towards technology.

Predicting Level of School Administrators' Attitudes towards Technology on Their Resistance to Change

The results related to the question “To what extent do school administrators' attitudes towards technology predict their resistance to change?” are given in Table 4.

Table 4. *Regression Analysis Results Regarding the Attitudes of School Administrators Towards Technology Predicting Their Resistance to Change*

Resistance to Change	Routine Seeking				Emotional Reaction				Short-Term Focus				Cognitive Rigidity			
Variable	**B**	**SE**	**β**	**T**	**B**	**SE**	**β**	**T**	**B**	**SE**	**β**	**T**	**B**	**SE**	**β**	**T**
Constant	3,094	,704		4,394	1,761	1,396		1,261	1,715	1,053		1,628	1,421	1,111		1,279
Adopting Technology	,076	,109	,055	,696	,144	,215	,059	,669	,024	,162	,013	,148	,408	,171	,211	2,380
Awareness of Technological Developments	-,034	,111	-,029	-,311	-,091	,220	-,043	-,416	,125	,166	,078	,757	-,087	,175	-,053	-,499
Following Technology	-,127	,072	-,143	-1,774	-,234	,142	-,149	-1,647	-,187	,107	-,155	-1,741	-,057	,113	-,046	-,508
Technology and Management	-,159	,091	-,135	-1,743	,016	,180	,008	,088	-,156	,136	-,098	-1,146	,147	,144	,090	1,021
Fear of Technology	,006	,047	,010	,133	,194	,092	,169	2,102	,103	,070	,117	1,483	-,083	,074	-,091	-1,124

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Internet Use	-,185	,079	-,173	-2,330	-,077	,158	-,041	-,489	-,012	,119	-,008	-,104	-,040	,125	-,027	-,322
Trust in Technology	,042	,054	,055	,782	,162	,107	,120	1,509	,073	,081	,071	,904	-,015	,086	-,014	-,176
Pessimism about Technology	,306	,079	,320	3,853	,260	,157	,153	1,651	,315	,119	,243	2,654	,226	,125	,170	1,805
Technology Use	,019	,087	,019	,212	,135	,173	,078	,777	,063	,131	,047	,481	,052	,138	,038	,378
	R=,519		R^2=,270		R=,293		R^2=,086		R=,334		R^2=,111		R=,255		R^2=,065	
	F=7,338				F=1,872				F=2,496				F=1,384			
	p<,05				p>,05				p<,05				p>,05			

Table 4 shows the results of the regression analysis regarding the attitudes of the school administrators towards technology to predict their resistance to change. Accordingly, while the sub-dimensions of the attitude towards technology were found to be predictive of the routine seeking and short-term focus of resistance to change (p<.05), they are not predictive of the sub-dimensions of emotional reaction and cognitive rigidity (p>.05).

Routine Seeking: There is a moderate and significant relationship between all sub-dimensions of attitude towards technology and routine seeking sub-dimension of resistance to change (R=.334; R^2=.270; p<.05). Sub-dimensions of attitude towards technology explain 27% of the total variance in routine seeking.

***Emotional Reaction*:** There is no significant relationship between all sub-dimensions of attitude towards technology and emotional reaction sub-dimension of resistance to change (R=.293; R^2=.086; p>.05).

Short-Term Focus:There is a moderate and significant relationship between all sub-dimensions of attitude towards technology and short-term focus of resistance to change (R=.519; R^2=.111; p<.05). Sub-dimensions of attitude towards technology explain 11% of the total variance in short-term focus.

Cognitive Rigidity*:*There is no significant relationship between all sub-dimensions of attitude towards technology and short-term focus sub-dimension of resistance to change (R=.255; R^2=.065; p>.05).

Discussion, Conclusion and Suggestions

The relationship between the attitudes of school administrators towards technology and their resistance to change was examined in this study. First of all, it was tried to reveal whether there is a significant difference in the attitudes of school administrators towards technology and

resistance to change according to their position. It is seen that the assistant principals are better than the principals at adopting the technology, following the technology and using the internet. Similarly, Günbayı and Cantürk (2011) stated in their study that assistant principals have more positive attitudes than principals in these dimensions. One of the reasons for this may be that assistant principals are at a younger age than principals. It is known that young people's attitudes towards technology are more positive than older individuals. This view was also supported by the research conducted by Yörük (2013). He concluded that young managers adopt technology at a higher level than older ones. Aktaş (2016) also revealed that the competencies of school administrators in technology use differ significantly by age. Accordingly, school administrators in 31-40 and 41-50 age group are more apt to use technology than those in 51 and over age groups. School administrators use computer systems to hold information about student profile, student grades, absenteeism, teacher information, budget data and so on. However, most of the time, assistant principals do such work related to information processing in schools. Principals are more concerned with organizational matters. Therefore, it can be thought that assistant principals are more prone to technology. It was also found that fear of technology, one of the sub-dimensions of attitude towards technology, was higher in principals than in assistant principals. Similarly, Günbayı and Cantürk (2011) stated in their study that fear of technology is higher in principals. This result also supports the difference in attitudes towards technology between principals and assistant principals.

When school administrators' resistance to change is examined by their position, it is seen that there is a significant difference only in the routine seeking dimension. It was found that principals are more likely to keep in routine seeking than the assistant principals. This situation shows that assistant principals are willing to do different jobs and actions rather than ordinary and same jobs compared to principals. Principals, on the other hand, do not want the existing order in their schools to be disrupted. However, in order to work as a principal at schools, a certain level of seniority is a prerequisite. Therefore, principals are generally older than assistant principals. It is known that as age increases, people's commitment to routine also increases. Çako (2012) concluded in his study that as the professional seniority of managers increases, so does their resistance to change. Similarly, a study conducted by Hargreaves (2005) in Canada showed that young people are more open to change, and the level of resistance to change increases as seniority increases. This situation can also cause differences by the position.

When the relationship between school administrators' attitudes towards technology and their resistance to change is examined, school administrators' routine seeking for resistance to change has a negative significant correlation with adopting technology, awareness of technological developments, following technology, technology management, internet use and technology use. In other words, as the attitude towards technology increases, there is a decrease in routine seeking. Considering that technology is in a constantly renewed, developing and changing position, it is an expected result that it will move in the opposite direction with the routine seeking. On the other hand, routine seeking is associated positively and significantly with fear of technology and pessimism about technology, which are sub-dimensions of attitude towards technology. Accordingly, if the application of a new technology requires new skills, then administrators may experience a sense of insecurity and fear of losing their positions (Tüz,

2004). Inandı et al. (2013) state that individuals do not want change when they think that their existing beliefs, values and behaviors meet their needs or when they think that their beliefs, values and behaviors are threatened. Therefore, it is seen that the administrators who have fear and pessimism about technology have more desire to seek routine.

Emotional reaction, which is another sub-dimension of resistance to change, has a negative significant correlation with awareness of technological developments and following technology. In other words, as school administrators' awareness of technological developments and their level of following technology increase, their emotional reaction such as stress and tension against change, decreases. On the contrary, emotional reaction was found to have a significant positive correlation with fear of technology and pessimism towards technology. Accordingly, the stress and tension of administrators increase if they are afraid of technology and pessimistic about technology. Akbaba Altun (2008) examined the relationship between primary school administrators' attitudes towards technology and their emotional intelligence. The results of this research revealed that there is a positive relationship between the emotional intelligence of school administrators and their attitudes towards technology. Helvacı (2008) also states that school administrators may have some concerns about the idea that "technology is under human control", especially in the face of increasing knowledge and dizzying technological developments in recent years. The inability to adapt to the change brought about by new technologies leads to fear and pessimism in administrators. Sönmez Çakır et al. (2018) also reached similar results in their studies expressing that the fear of using technology decreases as the technological development is adopted. In general, resistance to change is inevitable due to negative thoughts and worries, giving up habits and uncertainties brought about by change (Benfari, 2013; Hultman, 1998, Jung et al., 2003; Martincic, 2010).

The short term focus of resistance to change has a negative significant relationship with awareness of technological developments, following technology, technology management and technology use while it has a positive and significant relationship with fear of technology and pessimism about technology. The short-term focus refers to difficulty in changing minds, and uncomfortable state of administrators with even possible changes. As they are engaged more in short-term goals, their pessimism and fears about technology increase. In addition, Karakan (2020) examined the relationship between school administrators' attitudes towards technology and personality traits for openness to development, and observed an increase in affective, behavioral and linguistic thinking attitudes towards technology use, and a decrease in negative thinking attitudes as their level of openness to innovation increases. Inandı et al. (2020) stated that in organizations, employees who are intellectually fixated on certain situations may want the routine to continue during the functioning of the work and may show emotional reaction and stress when they encounter change. Administrators avoid this change even though they know that technological developments are beneficial making their work easier.

Cognitive rigidity, which is the last sub-dimension of resistance to change, has a positive and significant relationship with adopting technology. According to this result, while administrators do not change their minds easily when they reach a conclusion and their ideas are consistent in the long run, their level of adopting technology also increases. In the study conducted by

Çelikten (2001), it was determined that most of the school administrators use technology in the management process, especially in order to facilitate, enrich, accelerate and increase the quality of the work done by means of computers. Therefore, it is important for school administrators to adopt technology in terms of their long-term consistency.

It was also revealed in the research that school administrators' attitudes towards technology are moderately predictive of the routine seeking and short-term focus dimensions of resistance to change. Accordingly, it is possible to regard the attitudes of school administrators towards technology as one of the determining factors of resistance to change. Erdoğan (2002) describes technological developments among the factors that force organizations to change. It is emphasized by many studies that organizational leaders play a very important role in managing organizational change and resistance to change (Burnes & Todnem, 2012; Luecke, 2009; Martincic, 2010). In addition, school administrators are expected to lead their schools in the use of information technologies (Akbaba Altun, 2002). In this new managerial role called technological leadership, the school administrators should not only use technology effectively, but also guide teachers and students in the education environment. School administrators' adoption of technology, awareness of technological developments, following technology, internet use and technology use in the management process would contribute to organizational change.

The following suggestions can be made based on the findings of the study.
(1) The attitudes of school administrators towards technology and their resistance to change should also be evaluated by the opinions of teachers, students and parents, so that similar and different aspects could be compared.
(2) According to the results of the research, it is seen that the attitudes of assistant principals towards adopting technology, following technology and using the internet are higher than the principals. Technology-oriented training should be given to the principals who are expected to have technological leadership, and this difference should be eliminated.
(3)Another result of the research shows that the fear of technology is higher in principals than in assistant principals. It was also revealed that principals are more in search of routine than the assistant principals. Further research should be conducted to effectively determine why the fear of technology and the desire to seek routine are higher among principals.
(4) Awareness training on technology leadership should be given to school administrators. In this context, it should also be ensured that they have information about the reasons for resistance to change and that they adopt a participatory management approach in the change process. School administrators also play an important role in the successful realization of change. They should have the knowledge and skills to ensure the participation, support, cooperation and motivation of their subordinates during the change.

Limitations

This research is limited to the school administrators working in public schools in Mersin, Turkey. It focused only on the technological leadership behaviours of school administrators and their resistance to change.

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