

The Opinions of Teachers About the Innovation Level of Their Schools*

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Abstract

This study aims to determine the opinions of teachers about the innovation level of their schools. The sample of this research includes 471 teachers working in primary and secondary schools in Sinop, a city in Turkey. “Innovative School Scale” developed by Aslan and Kesik (2017) was used in order to collect data in this study. Percentage, frequency, mean, standard deviation, T-test and one-way ANOVA were performed to determine teachers' opinions about the innovation level of their schools according to the demographic variables. The findings show that the opinions of teachers about the innovation level of their schools are quite high with a level of “often” in the dimensions of innovative atmosphere, administrative support and the overall scale and with a level of “sometimes” in the organizational impediments. While the teachers' opinions indicate no significant differences regarding their genders, they show significant differences regarding their subject areas, years of teaching experience and teaching level of school. According to findings, branch teachers, teachers working in secondary schools and teachers having 21 or more years of teaching experience were found to have a higher level of opinions about the innovation level of their schools. The findings and suggestions obtained by the results are expected to contribute to the discussions and literature about increasing innovation level of schools.

Keywords: innovative school, innovation, teacher

1. Introduction

Innovation which is frequently used with the concepts of change and creativity is defined as “the successful implementation of creative ideas within an organization” (Amabile, Conti, Coon, Lazenby & Herron 1996: 2) and “a process of developing and implementing a new idea” (Van de Ven & Angle, 1989: 12). According to Seymour and Fife (1988), while the innovation, as a tool to exploit change, might be a distinctive technology, it might be a new organizational structure or a new instructional method brought into the educational system. In today's world which the change is unavoidable, the subject of innovation has been a matter of research for a long time (Damanpour & Evan, 1984; Van de Ven & Rogers, 1988; Anderson & King, 1993; Amabile et al, 1996; Montes, Moreno & Fernandez, 2004; Scot, Bruce & Reginald 2005; Mclean, 2005; Moolenaar, Daly & Slegers, 2010). However, most of the researches have been concentrated on the business and industrial organizations and the field of education has been undermined for a long time. Although no other field has been more subject to innovation than education (Hockley, 2009) and the schools are the basic elements of the innovation process, they can be accepted as weak about the transformation and sharing of information related to the innovation (Fullan, 2002). Within a context of change and innovation in the field of education, the effectiveness of schools can be provided with a creative environment encouraging teachers to take risks, improve their professionalism, have responsibility and use initiative instead of a traditional hierarchical model (Edwards, Green & Lyons, 2002).

Innovative schools promoting such kinds of characteristics as democratic, community oriented approaches to learning and teaching and student centered have gained some national and international recognition (Armstrong, Henson & Savage, 1997). The EU has given a special importance to the role of education to carry out the intended innovations on the Lisbon Agenda (COM, 2006) and thus the innovative schools having the characteristics above have come into prominence all around the world. For the innovation to take place in schools, an innovative climate including innovative structures, leadership and staff have utmost importance (Watt, 2002). Considering the climate as a cultural force,

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Seymour and Fife (1988) evaluated the innovation level of an organization with the individuals supporting change. Similarly, there are some other researchers suggesting innovation has a close relationship with the social relationships within and across systems (Tenkasi & Chesmore, 2003; McGrath & Krackhardt, 2003). Within this context, innovative climate can be defined as the shared perceptions of organizational members regarding the procedures, practices and behaviors promoting the generation of new knowledge and practices (Moolenaar, Daly & Slegers, 2010). The importance of an innovative climate to promote the generation, adoption, and implementation of new knowledge, practices and innovative behavior has been addressed in various studies (Ekvall, 1996; Mclean, 2005; Panuwatwanich, Stewart & Mohamed, 2008). Aspects such as openness in communication, establishing networks among individuals within the organization and institutions outside (Sharma, 2001), supporting ideas, risk taking, trust, intrinsic movement, intellectual orientation and freedom (Mumford, Scott & Gaddis, 2002) have been the particular motives for an innovative organization. An innovative climate increases the members' motivation by encouraging autonomy and risk taking so it enables them to be more willing for innovative behaviour (Jung, Chow & Wu, 2003). According to Heck and Marcoulides (1996), schools encouraging innovation and risk taking, fostering teacher participation in decision-making and providing time for collaboration were found to be more efficient. Similarly, Watt (2002) asserted that innovative schools having an entrepreneurial and risk taking spirit fostered collaborative approaches to learning and innovation. Taking the innovative climate's relation with with teachers' knowledge creation, Song, Kim, Chai & Bae (2014) suggest that an innovative school climate has a positive impact on teachers' knowledge sharing and work engagement and influences teachers' knowledge creation practices in a positive way.

As an important determinant of an innovative school climate, there have been various studies regarding the impact of structures and procedures on an organization's adoption of innovation (Zaltman, Duncan & Holbek, 1973; Mercer, 1983; DeCanio, Dibble & Amir-Atefi, 2000; Chiaroni, Chiesa & Frattini, 2011; Lee, Min & Lee, 2016). While, the organizations having low centralization were found to provide for more flexibility and foster a participative decision making process paving the way for the generation of new ideas (Daly, 2009); in organizations with a strongly centralized network, the members may perceive limited impact on the decision making process as the decisions are shared among only a few influential people within the organization (Moolenaar, Slegers, Daly, 2011). In the innovative schools, "the organizational structure was constructed in a way to allow for the necessary free, fast and unimpeded flow of knowledge required for innovation with the individuals and groups that have significant and meaningful input into decision-making process" (Dibbon & Pollock, 2007: 10). Similarly, Watt (2002:10), describes the structures and processes of innovative schools as "flexible, allowing for sharing of knowledge and the ability to work in teams with less hierarchy than normal schools".

Leadership, as another determinant of the innovative school climate, plays an important role to enable the required conditions and climate for innovations to happen (Siegel & Kaemmerer 1978; Bass & Riggio, 2006; Prew, 2007; Saĝnak, 2012). According to Watt (2002), a successful innovation requires leaders who have a commitment for change and a clear vision and are enthusiastic about taking risks and leading. As leadership behavior has an impact on innovative climate, the type of leadership is an important factor which influences organizational innovation (Jung et al., 2003). According to Anderson and King (1993), different stages of innovation require different styles of leadership at different points of time in the process and multiple leadership approaches are suitable for each innovation; for example for the initiation phase a nurturing type of leadership and for the implementation phase a championing type, etc. There is an increasing number of researches suggesting that innovation-supportive climates may be facilitated or constrained by leadership behavior (Mumford, Scott, Gaddis, & Strange, 2002) paving the way for different leadership styles in the innovation process. Some researchers advocate the transformational leadership for the effectiveness of the innovation process (Jung, et al., 2003; Sarros, Cooper & Santara; 2008; Garca-Morales, Jimenez-Barrionuevo & Gutierez-Gutierez, 2012) and some others argue for a transactional leadership (Jung, 2001; Jansen, Vera & Crossan, 2009). While transformational leadership improves the innovative climate of an organization by providing a vision and setting clear goals; individual consideration -confidence in individuals' innovative capacities-; intellectual stimulation (Moolenaar, Daly & Slegers, 2010); transactional leadership is associated with exploitative innovation and facilitates improving and extending existing knowledge (Jansen, Vera & Crossan, 2009). Anderson and King (1991) argued that such points as encouraging individual attempts of staff, clarifying their responsibilities, providing a clear feedback about their performance, laying emphasis on human resources and task orientation and demonstrating trust in the members of organization. According to Siegel and Kaemmerer (1978), leadership is one of the most important factors that determine the innovative climate of schools and "the principal is the key figure in determining the take-up of an innovation in a school" (Prew, 2007: 458). School effectiveness and innovation literature shows that the principals influence the probability of change on a large scale and so they should be equipped with leadership characteristics which facilitate change as initiators (Fullan, 2001). Also, they should have the attitudes of giving importance to the innovation and risk taking (Harris, Day, Hopkins, Hadfield, Hargreaves & Chapman, 2003). As the leaders of the school, the principals should have a clear vision about where to take their school, have a commitment to change and support

risk taking (Watt, 2002). They should also encourage the school's innovative climate by developing nurturing relationships and providing support (Shalley & Gilson, 2004) and respecting the different identities of individual teachers (Ketelaar, Beijaard, Boshuizen & Den Brok 2012).

Being the key actors of innovation, people, staff, have a vital role in the success of an innovation (Zaltman & Duncan, 1977; Fullan, 1991; Watt, 2002). According to Daft and Becker (1978: 154), "innovation does not require free resources so much as it requires people to push innovation". The innovation process depends largely on the knowledge, skills, experiences and concerns of the individuals and groups involved in the process (Hall & Hord, 1987). While some people in organizations adopt innovations eagerly and unhesitatingly as innovators; the others behave more cautiously, reluctantly and under some circumstances may reject the innovations completely as resisters (Sharma, 2001). So, it's important to include all individuals within the organization as innovators to achieve the innovations and create the necessary conditions for an innovative climate. Watt (2002: 10) describes the attributes of people in a creative and innovative school like: "creativity, continuous improvement skills, implementation abilities, risk taking capacities, and relationship building skills". A study by Geijsel, Berg and Slegers (1999) about the innovative capacity of schools suggest that there is a relationship between a school's innovative climate and expectations and satisfaction of teachers related to the degree of collaboration. While the teachers working in schools with a strong innovative climate have higher expectations of collaboration; the teachers working in low innovative climate schools have fewer expectations of collaboration. In an innovative school, collaboration is given utmost importance and teachers work together to generate new ideas, learn new skills, and build up programs (Watt, 2002). Moolenaar, Slegers and Daly (2011) argued that for an innovative climate to occur, dense social networks among teachers were identified as helpful since social interactions enable teachers to participate in decision-making process more which give rise the opportunities to create new knowledge and practices which strengthen the innovative climate of schools. The more tied teachers were to the work related and personal advice, the more they thought their schools have an innovative climate. According to a research done by Ketelaar, Beijaard, Boshuizen and Den Brok (2012) the correspondance of teachers' frame of references with the frame of reference of the innovation and collaboration among teachers were found important in teachers' positioning themselves towards an educational innovation. An educational innovation introduced by the government doesn't always evoke resistance only if it corresponds with the teachers' frame of references and teachers feel ownership regarding the innovation. Also, collaboration may help to prevent teachers from wandering towards the dark side of ownership, sense-making and agency, and ending up on an 'island' within their school where nobody can reach them anymore (Ketelaar, et. al., 2012 :25)

In Turkey there have been several initiatives to introduce innovation in education such as extending the duration of compulsory education to 12 years; Movement of Enhancing Opportunities and Improving Technology (Fatih Project), acceptance of a student centered and constructivist curriculum instead of a teacher centered one, etc. However, all these innovation attempts have mostly been in the system level and not been addressed to school specific issues such as creating a shared vision, opportunities for an innovative climate in schools due to the centralized administration of Turkish education system and participation of teachers in the decision making processes in limited level. Principals' not exhibiting change leadership roles (Fullan, 2001), becoming more focused on the technical elements of the reform (Moolenaar, Daly & Slegers, 2010) and teachers' not involving in the design of educational innovations mostly (Van Veen & Slegers, 2006) may have influenced the reactions of the teachers to the implementation of innovations. It's evident that while most of the policies related to improvement are concentrated on the technical elements of reform and focus on superficial aspects of schools and such issues as program fidelity, rigid curriculum, and prescriptive approaches (Daly, 2009); they undermine the main determinants of an innovative school like culture and climate. "Without a direct and primary focus on changes in organizational factors it is unlikely that [single innovations or specific projects] will have much of a reform impact, and whatever impact there is will be short lived ... school improvement efforts which ignore these deeper organizational conditions are 'doomed to tinkering'... Strategies are needed that more directly address the culture of the organization" (Fullan, 1988: 28).

1.1 Literature Review

As for the studies about the concept of innovation in education organizations, it is observed that the concept is mostly addressed within the framework of change and creativity. The studies carried out abroad about the concept have mostly centered around the innovation and innovation process in education and schools (Corwin, 1975; Watt, 2002; Pollock, 2008). Similarly, the studies in Turkey gather around organizational change and innovation (Özdemir, 1995; Özdemir & Cemaloğlu, 1999; Aslaner, 2010; Hatipler, 2014), the need for innovation in elementary schools (İnandı, 1999; Beycioğlu, 2004), the drawbacks to innovation in education (Karip, 1997; Cemaloğlu, 1999; Taş, 2007; Gülşen & Gökkyer, 2010). The number of studies examining the opinions of teachers in primary and secondary schools and the relationships of these opinions with some demographic variables are quite limited in literature. However, some studies determining the relationships of some variables with motivation, communication, culture and climate may give hints

about the innovation level of schools. Therefore, it can be asserted that in addition to the importance of attributes of people to carry out the innovations in schools, the demographic characters of them and the teaching level of the school they work may affect the innovative climate of schools. It has been found out in several studies that males have more positive opinions about the change and innovation processes in schools (Çakır, 2009; Korkut, 2009; Demirtaş, 2010; Canlı, Demirtaş & Özer, 2015), resist less to change and innovation (Aydın & Şahin, 2016) and tend to take more risks (Kayasandık, 2017). Although gender roles differ among societies, the permanent truth is that the women are only of secondary place compared to men (Yılmaz & Sünbül, 2009); therefore it's expected that the women are less entrepreneurial as a result of a more oppressive and submissive method of child raising compared to men (Arı, 1989). Similarly, teachers who have more teaching experience have been found more innovation friendly compared to the less experienced ones in most of studies (Glantz, 1998; Tanıt, 2003; Beycioğlu, 2004; Özata, 2007; Kondakçı, Zayim ve Çalışkan, 2010; Demirtaş, 2012; Kayasandık, 2017). Although the experienced teachers are generally expected to resist change as a result of their established routines for classroom behavior, working for long in the same organization and bureaucratic socialization (Palmer, 1993) and get involved in school reform initiatives reluctantly and mistrustfully (Foster, 1993), it is the more experienced teachers who welcome change and innovation more in most of the studies. This can be explained with the experienced teachers' finding more strength in themselves to overcome the organizational and bureaucratic obstacles to generate innovations. Teachers' subject areas may also be considered as an important determinant of their attitude and perceptions about change and innovation. It has been identified in several studies that class teachers, in other words teacher working in primary schools, have more positive opinions about the culture of their schools (Çelik, 2004; Arslan, Kuru & Satici, 2005; Kondakçı, Zayim & Çalışkan, 2010) and therefore more innovation oriented (Maslowski, 2001). As class teachers spend more time in school, they contribute to a school culture which is open to communication more (Çelik, 2004) Therefore, it's expected that a strong school culture is more open to change and innovation. However, class teachers' not having as many opportunities as subject teachers (English, Maths, Science, Social studies, Music, Art, Physical education, etc) to interact with the teachers from other disciplines and to experience different practices may have a negative effect on their attitudes towards change and innovation. In their studies Kurşunoğlu and Tanrıöğen (2006) found out that subject teachers had more positive attitudes towards change and supported change more. Therefore, identifying the opinions of teachers about the innovation level of their schools according to some variables which are estimated to have an important effect on the teachers' perceptions about the innovation in schools is considered to contribute to the related literature to a great extent as the teachers have a great influence on education system both quantitatively and qualitatively. This study aims to identify the opinions of teachers about the innovation level of their schools. So, it seeks to answer the following associated questions:

1. What are the opinions of teachers about the innovation level of their schools?
2. Is there a significant difference between the opinions of teachers about the innovation level of their school and their demographic characteristics such as gender, subject area, years of teaching experience and the teaching level of school?

2. Method

2.1 Research Model

In this research a descriptive survey which deals with the current phenomena in terms of changing conditions, processes, practices and relationships was used. Surveying model is a research approach aiming to describe a situation which has existed both in the past and at the present time as it already is (Karasar, 2007: 77) and it is related both with the individuals' characteristics and the features of the whole phenomenon by offering information to interpret and solve problems (Salaria, 2012).

2.2 Participants and Procedures

The population of the study comprised of 1411 teachers working in public primary and secondary schools in the city of Sinop, a city in Turkey, during the 2016-2017 school year. The sample in this study was selected with random sampling method which give the whole units of the population the chance of being selected and 471 teachers participating voluntarily and anonymously in the study constituted the sample of the study.

Out of these 471 teachers, 251 were females and 220 were males. The sample comprised of 170 classroom teachers (teachers working in primary schools) and 301 subject teachers (English, Math, Science, Social studies, Music, Art, Physical education) Also, 143 teachers were working in primary schools and 262 of them were working in secondary schools. Lastly, 140 teachers had 1-10 years of teaching experience, 164 of them had 11-20 years of teaching experience and 167 of them had 21 or more years of teaching experience.

2.3 Instruments

As data collection instrument, "Innovative School Scale" (ISS) developed by Aslan and Kesik (2016) was used. The survey

items were scored on a 5 point Likert-rating scale on frequency of activity, ranging from 1 representing 'never' to 5 'always'. Before carrying out the analysis, the items belonging to the subscale of Organizational Impediments were reverse scored. The scale has three sub-dimensions called as "Innovative Atmosphere, Administrative Support and Organizational Impediments" and 19 items. The subscale of Innovative Atmosphere includes such items as "There is a climate encouraging innovation", "The trust between the school principal and teachers is high", etc. Administrative Support subscale includes such items as "Teachers can make innovative decisions", "Teamwork is supported to enable innovation to occur", etc. Organizational Impediments subscale includes such items as "School members are afraid of taking risks", "Innovation isn't a fundamental organizational aim. These all sub dimensions have been explaining .62.70 of total variance and factor loadings of all items range from .86 to .52. The results of the confirmatory factor analysis are shown in the following table.

Table 1. Fit index values regarding the confirmatory factor analysis of the Innovative School Scale

Fit Index	Coefficient
χ^2	360.38
Sd	146
χ^2/sd	2.46
Goodness of Fit Index (GFI)	0.90
Adjusted Goodness of Fit Index (AGFI)	0.87
Non-Normed Fit Index (NNFI)	0.97
Normed Fit Index (NFI)	0.95
Comparative Fit Index (CFI)	0.97
Root Mean Square Error of Approximation (RMSEA)	0.055
Standardized Root Mean Square Residual (SRMR)	0.069

According to Table 2, it may be asserted that the three factors model of the scale has construct validity in a reasonable level and the three factors structure of the scale were confirmed.

As for the reliability analysis, Cronbach Alfa analysis was carried out and the reliability coefficient for the Innovative School Scale instrument as a whole was found 0.85, indicating a strong internal consistency. The reliability coefficients for the three subscales were as follows: 0.91 for Administrative Support, 0.90 for Innovative Atmosphere and 0.79 for organizational impediments.

2.4 Data Collection and Analysis of Data

Ethical issues have been given utmost importance at all stages of this study. Legal permission was obtained from the Ministry of National Education and the participants were chosen among the volunteers. In data analysis which SPSS 15.0 for Windows was used, the mean, standard deviation, and frequency were calculated, and t-test and ANOVA tests were performed. In cases which significant differences were identified, Tukey was used and 0.05 significance level was grounded to test the differences among the group average points. In order to control the assumption of normality of scale scores of teachers, skewness and curtosis coefficients were calculated and the skewness coefficient was found as -.252 and the curtosis coefficient was found as .242. As the skewness and curtosis coefficients of the scale score within the range of ± 1 , this result revealed that the scores didn't show deviation and the data displayed normal distribution. (Büyüköztürk, Çokluk & Şekercioğlu, 2012). Also, Levene Test for Equality of Variances was made to identify whether the variances are equal or not and the significance level was found above .05 and the variances were equal. Also, the significance level for the variable of teaching experience was found above .05 ($F_{(Y0)}=2.152$, $df1=2$, $df2=468$, $p>0.05$).

While interpreting the average points, the score ranges for the Innovative School Scale are as follows:

- 1-1.80: "Never"
- 1.81-2.60: "Seldom"
- 2.61-3.40: "Sometimes"
- 3.41-4.20: "Often"
- 4.21-5.00: "Always"

3. Findings

In this part of the study, research questions were taken into consideration respectively and the results were analyzed in accordance with the tables.

3.1 Teachers' Opinions About the Innovation Level of Their Schools

Results of the analysis carried out to identify the opinions of teachers about the innovation level of their schools are shown in the following table.

Table 3. Teachers' opinions about the innovation level of their schools

Dimension	N	X	Ss
Innovative Atmosphere	471	3,82	0,86
Administrative Support	471	3,48	0,53
Organizational Impediments	471	3,03	0,61
Total	471	3,42	0,47

According to Table 1, while the mean for innovative atmosphere is 3.82; it is 3.48 for administrative support and 3.42 for overall scale with the level of "often" and the mean for organizational impediments is 3.03 with the level of "sometimes". This result suggests that although the teachers sometimes encounter some organizational impediments, they have often positive opinions about the innovative atmosphere of their schools; they take enough administrative support to make their schools more innovative and thus they often find their school's atmosphere innovative.

3.2 Teachers' Opinions About the Innovation Level of Their Schools According to Their Gender

The findings regarding the analyses carried out to determine whether the teachers' opinions about the innovation level of their schools show difference according to their genders are shown in Table 2.

Table 2. Teachers' opinions about the innovation level of their schools according to their gender

Dimension	Gender	N	X	Ss	Sd	T	P
Innovative Atmosphere	Female	251	3,79	0,85	469	,921	,358
	Male	220	3,86	0,87			
Administrative Support	Female	251	3,46	0,65	469	,693	,489
	Male	220	3,51	0,58			
Organizational Impediments	Female	251	2,97	0,59	469	2,019	,044*
	Male	220	3,09	0,63			
Total	Female	251	3,41	0,49	469	1,658	,098
	Male	220	3,48	0,50			

* $p < 0.05$

Table 2 reveals that while there aren't any significant differences between the opinions of male and female teachers in the dimensions of innovative atmosphere [$t_{(469)} = .921$, $P > 0.05$], administrative support [$t_{(469)} = .693$, $P > 0.05$] and the overall scale [$t_{(469)} = 1,658$, $P > 0.05$], there is a significant difference between the opinions of teachers in the dimension of organizational impediments. It has been determined that male teachers have higher points compared to female teachers in the dimension of organizational impediments. Within this context, it can be asserted that male teachers have more positive opinions in such issues as risk taking, being courageous towards the unknown, welcoming innovations with less fear, less anxiety, attempting to change the current circumstances and thus are better at overcoming the obstacles towards innovation in their schools.

3.3 Teachers' opinions about the Innovation Level of Their Schools According to Their Subject Areas

The findings regarding the analyses carried out to determine whether the teachers' opinions about the innovation level of their schools show difference according to their subject areas are shown in Table 3.

Table 3. Teachers' opinions about the innovation level of their schools according to their subject areas

Dimension	Subject Area	N	X	Ss	Sd	T	P
Innovative Atmosphere	Branch Teac.	301	3,91	0,69	469	2,945	,003*
	Class Teac.	170	3,67	1,07			
Administrative Support	Branch Teac.	301	3,50	0,49	469	1,063	,288
	Class Teac.	170	3,45	0,59			
Organizational Impediments	Branch Teac.	301	3,07	0,58	469	2,103	,036*
	Class Teac.	170	2,95	0,64			
Total	Branch Teac.	301	3,49	0,35	469	3,031	,003*
	Class Teac.	170	3,36	0,60			

* $p < 0.05$

As shown in Table 3, while there aren't any significant differences between the opinions of branch and class teachers in

the dimension of administrative support [$t_{(469)}=1.063$, $P>0.05$], there is a significant difference between the opinions of teachers in the dimensions of innovative atmosphere [$t_{(469)}= 2.945$, $P<0.05$], organizational impediments [$t_{(469)}= 2.103$, $P<0.05$] and the overall scale [$t_{(469)}= 3.031$, $P<0.05$] and branch teachers have higher scores than class teachers. Therefore, it can be asserted that branch teachers find the atmosphere of their schools more innovative, have more enthusiastic about overcoming the organizational impediments and therefore have more positive ideas about the innovation level of their schools compared to class teachers.

3.4 Teachers' Opinions About the Innovation Level of Their Schools According to the Teaching Level of Schools

The findings regarding the analyses carried out to determine whether the teachers' opinions about the innovation level of their schools vary according to the teaching level of school are revealed in Table 4.

Table 4. Teachers' opinions about the innovation level of their schools according to the teaching level of school

Dimension	Teaching level of School	N	X	Ss	sd	t	P
Innovative Atmosphere	Primary	143	3,64	1,13	469	2,766	,006*
	Secondary	262	3,89	0,67			
Administrative Support	Primary	143	3,42	0,61	469	1,576	,116
	Secondary	262	3,51	0,48			
Organizational Impediments	Primary	143	2,94	0,66	469	2,517	,012*
	Secondary	262	3,10	0,58			
Total	Primary	143	3,34	0,64	469	3,258	,001*
	Secondary	262	3,51	0,36			

* $p<0.05$

As seen in Table 4, while there isn't a significant difference between the opinions of teachers working in primary and secondary schools in the dimension of administrative support [$t_{(469)}=1.576$, $P>0.05$], there are significant differences between the opinions of teachers in the dimensions of innovative atmosphere [$t_{(469)}= 2.766$, $P<0.05$], organizational impediments [$t_{(469)}= 2.517$, $P<0.05$] and the overall scale [$t_{(469)}= 3.258$, $P<0.05$] and teachers working in secondary schools have higher scores about the innovation level of their school than teachers working in primary schools. Within this context, it can be claimed that teachers working in secondary schools have more positive opinions about the innovation level of their schools and feel fewer impediments to make their schools innovative compared to teachers working in primary schools.

3.5 Teachers' Opinions About the Innovation Level of Their Schools According to Years of Teaching Experience

The findings regarding the analyses carried out to determine whether the teachers' opinions about the innovation level of their schools show difference according to the years of their teaching experience are shown in Table 5.

Table 5. Teachers' opinions about the innovation level of their schools according to years of teaching experience

Dimension	Years of teaching experience	N	X	Ss	Sum of squares	Sd	Average of the squares	F	p	Difference
Innovative Atmosphere	1-10	140	3,92	0,88	389,360	2	194,680	7,505	,001	1-2, 2-3
	11-20	164	3,62	0,94	12,140,097	468	25,940			
	21+	167	3,95	0,70	12529,456	470				
	Total	471	3,82	0,86						
Administrative Support	1-10	140	3,46	0,55	183,307	2	91,653	6,720	,001	2-3
	11-20	164	3,38	0,52	6382,812	468	13,638			
	21+	167	3,59	0,50	6566,119	470				
	Total	471	3,48	0,53						
Organizational Impediments	1-10	140	2,92	0,66	104,857	2	52,428	3,936	,020	1-3
	11-20	164	3,03	0,59	6233,173	468	13,319			
	21+	167	3,05	0,58	6338,030	470				
	Total	471	3,03	0,61						
Total	1-10	140	3,43	0,49	1325,149	2	662,574	8,628	,000	2-3
	11-20	164	3,34	0,50	35937,327	468	76,789			
	21+	167	3,55	0,38	37262,476	470				
	Total	471	3,45	0,46						

According to Table 5, it was found out that the opinions of teachers about the innovation level of their schools differed significantly according to their years of teaching experience in the dimensions of innovative atmosphere [$F_{(2-468)}=7.505$,

$P < 0.05$], administrative support [$F_{(2,468)} = 6.720$, $P < 0.05$], organizational impediments [$F_{(2,468)} = 3.936$, $P < 0.05$] and the overall scale [$F_{(2,468)} = 8.628$, $P < 0.05$]. Accordingly, teachers having 21 years or more teaching experience were found to have higher points about the innovation level of their schools compared to teachers having 1-10 and 11-20 years of teaching experience. In other words, it can be asserted that the experienced teachers find the atmosphere of their schools more innovative, feel the administrative support more and are better at overcoming bureaucratic and organizational obstacles towards innovation compared to teachers having less experience.

4. Discussion and Suggestions

As a result of this study aiming to identify the opinions of teachers about the innovation level of their schools, it was determined that teachers often found their schools' atmosphere innovative and they were often supported by the administration although they sometimes had problems to overcome organizational impediments towards innovation. It has been identified in various studies that an innovative climate has utmost importance in the realization of an innovation (Ekvall, 1996; Mclean, 2005; Panuwatwanich, Stewart & Mohamed 2008). While factors such as the trust between the administrators and staff, shared objectives and vision, participative problem solving and decision making processes, supporting creativity and risk taking increase the innovation level of an organization, some organizational and bureaucratic impediments resulted from the structure of the organization and the personality of the staff inhibit the innovative process in an organization. The organizations having a climate which is open to innovation are better at implementing innovations compared to organizations having a less innovative climate (Van den Berg & Slegers, 1996; Geijsel, 2001). Within the context of education organizations, as the schools fostering innovation were found to be more effective (Heck & Marcoulides, 1996), the findings of this study and getting similar results from the studies carried out by Hatipler (2014) and Aslaner (2010) as to the positive attitudes and opinions of teachers working in elementary schools towards innovation and change can be considered an important progress for the Turkish education system which is striving hard to improve schools because "the school improvement efforts are more likely to succeed in innovation-supportive climates" (Moolenaar, Daly & Slegers, 2010: 656). However, it must be borne in mind that for the development of such kind of an innovative atmosphere, the role of the administrators is undeniable. The innovative behaviours of the administrators such as supporting team work and cooperation, participative decision making, entrepreneurship of teachers and welcoming each diversity in the school atmosphere may be considered as a catalyzer of the innovation process in schools. According to Moolenaar, Daly and Slegers (2010: 655) "leaders who are able to develop shared vision and goals, attend to the social needs of individuals, and provide intellectual stimulation are perceived to support the fertile ground for innovation". Thus, it may be argued that leaders may foster innovative climate in schools by supporting, encouraging teachers and enriching relationships among teachers.

As to the demographic characteristics of teachers, it was found in our study that while teachers' gender didn't play an important role in the dimensions of innovative atmosphere, administrative support and the overall scale, male teachers had more positive opinions about the innovation level of their schools compared to female teachers in the dimension of organizational impediments. Accordingly, it can be argued that male teachers encounter fewer organizational impediments towards innovation. This may be related to that males have often a more advantageous status in organizations than the females. It's a well-known fact that the females often face lots of difficulties both as an administrator and teacher in schools as in all areas of social life.

Findings regarding the variables like teachers' subject areas and teaching level of school correspond to each other. It was identified in this study branch teachers and teachers working in secondary schools have more positive opinions about the innovation level of their schools compared to class teachers and teachers working in primary schools in the overall scale and all dimensions but the dimension of administrative support. This finding can be explained as a result of the branch teachers' having more opportunities to interact with the teachers from different branches, to experience different practices and thus being more open to innovation and change and contributing more to the innovation of schools. Similarly, in secondary schools, as an environment which paves the way for the teachers from different disciplines to come together and support innovation more by observing different experiences and practices, teachers were found to be more open to innovation. However, Maslowski (2001) revealed in his study that while secondary schools give more importance to performance and sustainability and are less susceptible to innovation, primary schools are more innovation focused and therefore open to innovation.

As an important variable, years of teaching experience demonstrated a significant difference in all dimensions and the whole scale itself in favor of teachers having 21 or more years of teaching experience. In parallel with this finding, Palmer (1993), Tanit (2003) and Moolenaar, Daly and Slegers (2010) determined that experienced teachers are more flexible and open to change, thus more innovative supportive. So, it's expected that the experienced teachers find their schools more innovative and support innovative practices more. The findings of this study and similar findings revealed by Palmer (1993), Glantz (1998), Tanit (2003) and Moolenaar, Daly and Slegers (2010) can be considered that the more experienced the teachers are, the more strength they find in themselves to overcome the organizational and bureaucratic obstacles to generate innovations.

As mentioned above, the results of this study demonstrated positive teachers' opinions about the innovation level of their schools and this offers hope for the schools' improvement practices in Turkey. However, some concrete steps must be taken to maximize the innovative capacities of schools. Within this context, various practices to overcome organizational and bureaucratic impediments can be carried out. For an innovative atmosphere in schools, teachers can be encouraged more to try new practices and take risks; capacity building for the innovative practices can be improved. Not mentioned in this study specifically but as an important impediment to generate innovations, schools can be provided sufficient funding as most of the schools have difficulty in finding the necessary funding to carry out innovations. Also, for the organizations to be innovative as a team, each individual team member must be encouraged to share and discuss creative ideas and different point of views must be welcomed (Amabile et al., 1996). Thus, a distributed leadership style, paving way for a culture and climate giving voice to all school members, regarding varieties as something nourishing, improving a shared vision and thus fostering change and innovation, may be adopted in schools and school principals may be trained in this way.

As one of the rare studies carried out in Turkey within this area, there are a few limitations that must be referred to this study. Firstly, no matter how adequate the sample size for the analysis, the findings of this study reflect only a single city in Turkey and there may be problems related to the generalizability of the results. So, the same study can be carried out in a way of including high schools and if possible Turkey context. Secondly, limited demographic characteristics of participants were taken into account in this study. The study can be carried out in a way to include different variables such as school size, the socio-economic district where the school is situated, school type (public/private), etc. Also, only teachers' opinions about the innovation levels of schools were taken in this study; so this study may be enlarged by including school principals', students', even parents' opinions. Lastly, this is a quantitative study and just give the level of the teachers' opinions about the innovation level of their schools, not the knowledge why they think so and doesn't "highlight the differences that are not statistically significant (Patton, 1990) Therefore, a qualitative study or more preferably a mixed study probing the questions 'how innovative the school atmosphere is, in what ways the school principals support or don't support the innovative practices and what the organizational and bureaucratic impediments for the generation of innovations' is considered to contribute to the related literature a lot.

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