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The Individual Innovativeness Perspective of Teachers: What Type of Innovator am I?

Öğretmenlerin Bireysel Yenilikçilik Perspektifi: Nasıl Bir Yenilikçiyim?

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Abstract: The present study aimed at revealing the individual innovativeness levels of teachers working at secondary schools and conducting an in-depth examination on the reasons of the behaviors in their category of innovativeness, and on the factors that affected their individual innovativeness. It was designed as a mixed method research in which quantitative and qualitative research techniques were used together. The quantitative data were collected through the “Individual Innovativeness Scale” and the qualitative data were gathered through a semi-structured interview form created by the researcher. The study group in the quantitative phase of the study consisted of 411 secondary school teachers while the participants in the qualitative phase included 20 teachers picked among those in quantitative phase based on the maximum diversity sampling method. Descriptive statistics were used in the analysis of quantitative data, and content analysis method was preferred for the analysis of qualitative data. According to the individual innovativeness scores, it was concluded that the majority of the participating teachers considered themselves to be low-level innovators and were placed in the early majority category of innovativeness. It has been found that no one to take place in the laggard category of individual innovativeness. In addition, it was observed that teachers had the highest mean for the sub-dimension of openness to experience and the lowest mean for the sub-dimension of resistance to change. It was found that being an investigator, being accepted to be a leader, uncertainty brought about by innovation and their skeptical behaviors against change caused the teachers to categorize their quality of innovativeness. Finally, it was revealed that the individual innovativeness behaviors of teachers were affected by individual, environmental and professional factors.

Structured Abstract: The rise in social change and the rapid flow of information have necessitated an effective differentiation in all the living areas of individuals and the alteration of old habits. Therefore, individuals in the society are supposed to have an understanding of innovativeness in order to comply with the emergent innovations within the scope of change and development. The notion of individual innovativeness is highlighted as the educational organizations, which have been mostly affected by social upheavals, constantly renew themselves in the face of alterations, and the teachers have to be interested in observation and investigation in order to be able to notice and adapt to the emergent changes in the environment. As information and communication technologies occupy a large place in all areas of our lives, educational institutions assume a crucial role in accessing new information and adopting to innovations. In similar vein, it is hoped that people will have high levels of innovativeness in order to use technology and access new information. Innovative thoughts and practices force teachers to improve themselves constantly regarding education and training, and to transfer their modern and innovative knowledge into lessons. That’s why, workers who have the ability to

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use new strategies, techniques, methods and materials and can adapt to developing science and technology in line with the social changes are required in the field of education. Undoubtedly, being sensitive to innovations and developments, and renewing oneself constantly are among the fundamental teacher characteristics. In this regard, teachers should be active and open to innovations during the education and training in order for educational institutions to raise innovative individuals. On the other hand, the innovative teacher may improve the number of activities that the students can participate in line with the curriculum, try new approaches and ways of presenting information, use different methods together to increase student participation and acquire new skills by changing own habits through professional development. All these make it important to reveal the innovativeness approach of prospective teachers. In this context, the main aim of this study was to reveal the individual innovativeness levels of secondary school teachers, and to conduct an in-depth examination on the reasons of the behaviors in their category of innovativeness and on the factors that affected their individual innovativeness.

Method

The present study was designed with mixed method research method. The universe of the study consisted of teachers working at secondary schools in the city center of Gaziantep. According to the 2019-2020 data of Gaziantep Provincial Directorate of National Education, 7565 teachers work in 336 secondary schools in city center. In the study group, 411 teachers selected according to the simple random sampling method were included.

The quantitative data of the study were collected through the “Individual Innovativeness Scale” developed by Hurt et al. (1977) and adapted to Turkish by Kılıçer and Odabaşı (2010). Qualitative data were collected using a semi-structured interview form consisting of eight interview questions, five main and three probe questions, based on the items in the quantitative data collection instrument. Quantitative data of the study were analyzed through SPSS 22.00 software package. Descriptive statistics (mean, standard deviation, percentage, frequency) were used to estimate demographic variables and innovativeness scores. Qualitative data were analyzed through content analysis method.

In order to conduct the study, Gaziantep University Social and Human Sciences Ethics Committee gave the necessary permission at its meeting number 6 on 20.05.2020.

Findings

In individual innovativeness scale, the respondents with a score above 68 are considered to be highly innovative, those with a score between 68-64 are moderately innovative, and those with a score below 64 are low level of innovative (Hurt, Joseph & Cook, 1977). Descriptive statistics for the individual innovativeness levels of teachers were given in Table 1.

Table 1: Descriptive Statistics for The Individual Innovativeness Levels of Teachers

Level of Innovativeness	f	Minimum	Maximum	$\bar{X}$	Ss
High	138	69	94	75,86	6,41
Moderate	82	64	68	65,89	1,42
Low	191	50	63	58,85	3,53

Table 2, the descriptive statistics regarding the frequency, percentage, mean and standard deviation for the individual innovativeness categories of teachers.

Table 2: Descriptive Statistics for The Individual Innovativeness Categories of Teachers

Innovativeness categories	f	%	Minimum	Maximum	$\bar{X}$	Ss
Innovators	39	9,48	81	94	84,89	3,56
Early adopters	99	24,08	69	79	72,31	2,72
Early majority	223	54,25	57	68	62,60	2,96
Late majority	50	12,16	50	56	53,68	1,88
Laggards	0					

Conclusion and Discussion

It is imperative for individuals to exhibit individual innovativeness behaviors in order to be extraordinary and to create a difference among their colleagues in an increasingly competitive environment.

Within the scope of this study, it was attempted to reveal the innovativeness approaches of secondary school teachers, to determine the underlying reasons of their category of innovativeness behavior, and to examine the factors affecting their individual innovativeness. As a result of the study, it was concluded that the majority of teachers regarded themselves as either low-level innovator ($n=191$; $\bar{X}=58.85$) or high-level innovator ($n=138$; $\bar{X}=75.86$) depending on the individual innovativeness scores.

It was found that the majority of teachers were in the category of “early majority” ($f=223$; 54.25%) based on their individual innovativeness scores and the following categories were “early adopters” ($f=99$; 24.08%), “innovators” ($f=39$, 9.48%), “late majority” ($f=50$, 12.16%).

According to another research finding, teachers had the highest mean in the sub-dimension of “openness to experience” ($\bar{X}=3.91$) and the lowest mean in the sub-dimension of “resistance to change” ($\bar{X}=2.53$) and it was followed by the sub-dimensions of “opinion-leading” ($\bar{X}=3.43$) and “risk-taking” ($\bar{X}=3.75$).

The participating teachers in the study were addressed the question of what were the factors affecting their individual innovativeness behaviors and the obtained findings were presented under the sub-categories of individual factors, organizational factors, environmental factors and professional factors. It was realized that teachers’ personality traits, problem solving skills, willingness to learn new things and entrepreneurship characteristics were individual factors affecting innovativeness.

Based on the overall evaluation of the obtained results, it can be alleged that in today’s world where change and knowledge production is rapid, the teachers should also have innovative personality traits besides being self-learning individuals as the individual. Innovativeness of teachers will be a discriminating feature among their colleagues. Educational organizations are asked to assume more responsibility in social change especially within the framework of the 21st century education reform initiative. Herein, teachers are both supposed to be a positive role model for the students and to have a high level of innovativeness in improving the quality of education.

Keywords: Educational Administration, Innovativeness, Innovative Behavior, Innovative Trends, Teacher

Öz: Bu çalışmada, ortaokullarda görev yapan öğretmenlerin bireysel yenilikçilik düzeylerini ortaya koymak ve yer aldıkları yenilikçilik kategorisindeki davranışların nedenleri ve bireysel yenilikçiliklerini etkileyen faktörlerin neler olduğu üzerine derinlemesine bir inceleme yapmak amaçlanmıştır. Araştırma, nicel ve nitel araştırma tekniklerinin birlikte kullanıldığı karma yöntem araştırması olarak tasarlanmıştır. Nicel boyuttaki veriler “Bireysel Yenilikçilik Ölçeği”, nitel bölümdeki veriler ise araştırmacı tarafından oluşturulmuş yarı yapılandırılmış görüşme formu ile toplanmıştır. Araştırmanın nicel bölümündeki çalışma grubu 411 ortaokul öğretmeninden, nitel bölümündeki çalışma grubu ise nicel araştırmanın katılımcıları arasından maksimum çeşitlilik örnekleme yöntemine göre belirlenmiş 20 öğretmenden oluşmaktadır. Nicel verilerin analizinde betimsel istatistikler, nitel verilerin analizinde ise içerik analizi yöntemi kullanılmıştır. Araştırma bulgularına göre öğretmenlerin, bireysel yenilikçilik puanlarına bağlı olarak, çoğunluğunun kendilerini düşük düzeyde yenilikçi olarak gördükleri ve yenilikçiliğin sorgulayıcı kategorisinde yer aldıkları sonucuna ulaşılmıştır. Bireysel yenilikçiliğin geleneksel kategorisinde ise kimsenin yer almadığı bulgulanmıştır. Ayrıca öğretmenlerin, bireysel yenilikçiliğin deneyime açıklık alt boyutunda en yüksek ortalamaya, değişime direnç alt boyunda ise en düşük ortalamaya sahip oldukları görülmektedir. Öğretmenlerin, kendilerini kategorize ettikleri yenilikçilik kategorisinin nedenlerinin ise araştırmacı olma, lider olarak görülme özellikleri ile yeniliğin getirdiği belirsizlik ve değişime karşı sergilemiş oldukları şüpheli davranışlardan kaynaklandığı sonucu ortaya çıkmıştır. Son olarak ise öğretmenlerin bireysel yenilikçilik davranışlarının, bireysel, çevresel ve mesleki faktörlerden etkilediği sonucuna ulaşılmıştır.

Anahtar Kelimeler: Eğitim Yönetimi, Yenilikçilik, Yenilikçi Davranış, Yenilikçi Eğilimler, Öğretmen

Introduction

The rise in social change and the rapid flow of information have necessitated an effective differentiation in all the living areas of individuals and the alteration of old habits. Therefore,

individuals in the society are supposed to have an understanding of innovativeness in order to comply with the emergent innovations within the scope of change and development. The notion of individual innovativeness is highlighted as the educational organizations, which have been mostly affected by social upheavals, constantly renew themselves in the face of alterations, and the teachers have to be interested in observation and investigation in order to be able to notice and adapt to the emergent changes in the environment. Based on the definition of innovativeness in terms of being new (Turkish Language Association, 2010), it can be alleged that individual characteristics, such as taking risks, leading ideas and being creative may serve as the indicators of how innovative a person is. Furthermore, today's organizations desire to recruit employees who have the skills of accessing the necessary information in any circumstances and solving problems with innovative characteristics (Rogers, 2003). Since the beginning of the 1900s, the concept of innovation has been investigated by a great number of disciplines and exclusively business, from sociology to communication, and education to marketing, and has been the subject of numerous studies (Kılıçer & Odabaşı, 2010). The existing research mostly focused on how individuals perceived innovations, why they internalized a type of innovation earlier than the other ones, and why they adopted innovations rather than the individuals they lived with. Innovativeness is actually the reaction of individuals to the innovations depending on the process of adopting new things. The innovativeness understanding of individuals is substantial in terms of establishing a strong balance after the experienced changes in social and cultural values as well as in other living areas with universal features (Kılıçer, 2011; Adıgüzel, 2012). The concept of individual innovativeness is defined as innovativeness, willingness to try new things (Hurt, Joseph & Cook, 1977) and the degree of willingness of individuals or institutions in situations that differ from present condition (Rogers, 2003) in the process of adopting change (Braak, 2001). On the other hand, Yuan and Woodman (2010), explained it as developing, adopting or implementing an innovation. The conceptualization of the concept of individual innovativeness handles the individual's reactions to new things under three different approaches which are behavioral, global personality trait and domain-specific personality trait. The behavioral approach describes innovativeness to be the process between adopting an innovation or not and the period of adapting to innovativeness. Global personality trait approach, on the other hand, refers the individual's reactions to innovations to the personal characteristics stemming from one's cognitive structures and behavioral patterns. Domain-specific personality trait approach deals with innovativeness as a personality trait with a similar perspective to global personality trait (Goldsmith & Foxall, 2003).

As different perspectives of people may lead to differentiation in their innovativeness, Rogers (2003), identified five distinct categories of individual innovativeness: innovators, early adopters, early majority, late majority and laggards.

Innovators: They are individuals who are willing to try new ideas and take risks, vision holder, daredevil, sociable, well-educated, travel to retrieve safe information and to find new applications, trust scientific knowledge, competent in technology use, have high level of thinking skills and love to help their surroundings. In addition, innovators are active, helpful and friendly people in social relations (Kılıçer, 2011; Özgür, 2013).

Early Adopters: They are individuals who inform and guide the others in society about innovations, technology-oriented, change supporter, vision holder, willing to take risks and try. In addition, early adopters are depicted to be opinion leader, vision holder, technology-oriented, highly educated people who use mass media intensively.

Early Majority: They are individuals who are cautious about innovations, not absolutely willing to take risks, have an average age, education and socio-economic level, and make moderate use of mass media. The early majority come after the early adopters in adopting innovations and they are always cautious. They contemplate about the possible consequences for a long time before trying a new idea.

Late Majority: They are individuals who adopt a skeptical and shy manner towards innovations, expect the majority of the society to adopt innovations, with low level of education and high average of age, make use of mass media to a lesser degree, and prefer interpersonal communication. Individuals in the category of late majority are in the need of external support, particularly to take advantage of technological innovations.

Laggards: They are individuals who prejudiced against change, tend to adopt innovations most recently, wait for others to try innovations and to observe the results before adopting innovation, need too much support on technological issues, and dislike like taking risks. Therefore, when laggards adopt a novelty, individuals in other categories mostly adopt and start using another one.

Gardner (1990) argues that the problems with innovativeness often arise from ignoring the emergent innovative ideas rather than not having the new ones. Similarly, Drabness (2002) also thinks that the individual's constant feeling of pressure within the group may negatively affect the innovative qualities. In addition, personal characteristics preventing innovativeness can be listed as the individual's fear of the unknown, worry of failure, difficulty of learning new things, narrow point of view, difficulty in giving up habits and the problematic previous experiences. In the review by Parzafall, Seeck and Leppänen (2008), the factors affecting the innovative behaviors of the employees were classified to be the individual factors, work-related factors, team-related factors and organizational factors.

It can be claimed that today's increasing competition condition make it necessary to develop for the organizations and individuals and that adaptation to innovations has become an essential part of life. However, the tendency of adapting to the innovations differs among individuals. Individual differences should be determined by considering how long the individual will adopt to innovation, how eager the person is to implement the change, attitudes or risk-taking during the uncertainties brought about by the changes (Rogers, 2003). As information and communication technologies occupy a large place in all areas of our lives, educational institutions assume a crucial role in accessing new information and adopting to innovations. In similar vein, it is hoped that people will have high levels of innovativeness in order to use technology and access new information (Kaya, 2017). Innovative thoughts and practices force teachers to improve themselves constantly regarding education and training, and to transfer their modern and innovative knowledge into lessons (Xu & Chen, 2010). That's why, workers who have the ability to use new strategies, techniques, methods and materials and can adapt to developing science and technology in line with the social changes are required in the field of education. Undoubtedly, being sensitive to innovations and developments, and renewing oneself constantly are among the fundamental teacher characteristics (Celep, 2004; Çelikten, Şanal & Yeni, 2005; Şişman, 2006). In this regard, teachers should be active and open to innovations during the education and training in order for educational institutions to raise innovative individuals. On the other hand, the innovative teacher may improve the number of activities that the students can participate in line with the curriculum, try new approaches and ways of presenting information, use different methods together to increase student participation and acquire new skills by changing own habits through professional development (Ritchhart, 2004). All these make it important to reveal the innovativeness approach of prospective teachers. In this context, the main aim of this study was to reveal the individual innovativeness levels of secondary school teachers, and to conduct an in-depth examination on the reasons of the behaviors in their category of innovativeness and on the factors that affected their individual innovativeness.

Method

The present study was designed with mixed method research method. According to Johnson & Christensen (2008), the study in which qualitative and quantitative research techniques, methods, approaches or concepts are used through blending or combining in a single scientific work is called mixed method research. In this study, sequential descriptive mixed research pattern was used to

cross-verify the accuracy of the data and to provide more in-depth examination regarding the subject matter. In addition, Gaziantep University Social and Human Sciences Ethics Committee gave the necessary permission in the meeting number 6, dated 20.05.2020, in order to conduct the study.

Study Groups

The universe of the study consisted of teachers working at secondary schools in the city center of Gaziantep. According to the 2019-2020 data of Gaziantep Provincial Directorate of National Education, 7565 teachers work in 336 secondary schools in city center. The study group included 411 teachers picked according to simple random sampling method by considering Yazıcıoğlu and Erdoğan's (2004: 40) ability to represent .95 and .05 error margin rules for the universe-sample calculation. Among the participants, 54.7% were women and 45.3% were men. In terms of level of education, 93.9% of the participants have B.A and 6.1% have M.A degrees. 12.4% of the participants were aged 24 and under, 30.2% of them aged between 25-34, 40.4% of them aged between 35-45, and 17% of them aged 46 and over.

The participants of qualitative data consisted of 20 teachers determined according to maximum diversity sampling method. The participants with the highest scores from each of the five innovativeness categories were included in the study to ensure maximum diversity. Pseudonyms were used for each school and participant during quantitative data collection procedure in order to identify those with high scores in innovativeness categories (S1=P1, S2=P1, S3=P1 etc.).

Data Collection Instruments

The quantitative data of the study were collected through the "Individual Innovativeness Scale" developed by Hurt et al. (1977) and adapted to Turkish by Kılıçer and Odabaşı (2010). The scale consisted of 20 items, 12 of which are positive and 8 of which are negative. The Individual Innovativeness Scale (IIS) has a four factors namely "Resistance to change", "Opinion-leading", "Openness to experience" and "Risk-taking". The internal consistency coefficient for the overall Turkish version of the scale was estimated to be $\alpha = 0.82$ and for each factor $\alpha = 0.81$, $\alpha = 0.73$, $\alpha = 0.77$ and $\alpha = 0.62$, respectively. The innovativeness score is determined by adding 42 points to the score obtained by subtracting the total score of the negative items from the total score of the positive ones. The range of the scale varies between the minimum 14 and the maximum 94 points. The respondents can be classified into innovativeness categories based on the overall scale scores. Accordingly, the respondents with above 80 points are called to be innovators, those with between 69 and 80 to be early adopters, those with between 57 and 68 to be early majority, those with between 46 and 56 to be late majority, and those with below 46 to be laggards. In addition, it is possible to assess the innovativeness levels of individuals on a general basis based on the overall scale score. Accordingly, the respondents with a score above 68 are considered to be highly innovative while those with a score between 68-64 are moderately innovative, and those with a score below 64 are low in innovativeness. The Cronbach Alpha reliability coefficient of the scale was found to be .72 within the scope of the present study. The reliability coefficients of the factors of the scale varied between .60 and .74.

Qualitative data were collected using a semi-structured interview form consisting of eight interview questions, five main and three probe questions, based on the items in the quantitative data collection instrument. In the semi-structured interview protocol, the questions were addressed to examine why the participants considered themselves in the innovativeness cluster that they had categorized and to determine the factors affecting their innovativeness behavior. After developing, the interview form was submitted to the experts in the disciplines of educational administration and assessment and evaluation to receive feedback. The interview form was finalized after the pre-interviews with five teachers to test the comprehensibility of the questions before starting the interviewing procedure.

Data Analysis

Quantitative data of the study were analyzed through SPSS 22.00 software package. Descriptive statistics (mean, standard deviation, percentage, frequency) were used to estimate demographic variables and innovativeness scores.

Qualitative data were analyzed through content analysis method. Content analysis is a method that allows the researcher to reveal the content in any source of communication (Neuman, 2010). Research data was coded by two distinct researchers using ATLAS.ti 8 qualitative data analysis software package and the coded texts were grouped under the themes and sub-themes that the researchers were in agreement.

In order to increase the credibility of the study, the researcher gave information about the subject during the preliminary interviews with the participants and attempted to create a long-term interaction environment. In addition, it was attempted to make the participants answer the questions sincerely during the interviews by stating that their information would be kept confidential during the research and data analysis processes. In qualitative research, another way to increase credibility is to get the consent of the participants. Accordingly, the interviews were first recorded and then transcribed into the text. The transcribed texts were sent to the participants to be approved. The data collection and analysis procedures were explained in detail to ensure transferability. For the consistency of the study, the research data were coded by a field expert, apart from the researcher.

Findings

In individual innovativeness scale, the respondents with a score above 68 are considered to be highly innovative, those with a score between 68-64 are moderately innovative, and those with a score below 64 are low level of innovative (Hurt, Joseph & Cook, 1977). Descriptive statistics for the individual innovativeness levels of teachers were given in Table 1.

Table 1: Descriptive Statistics for The Individual Innovativeness Levels of Teachers

Level of Innovativeness	f	Minimum	Maximum	$\bar{X}$	Ss
High	138	69	94	75,86	6,41
Moderate	82	64	68	65,89	1,42
Low	191	50	63	58,85	3,53

The examination of Table 1 proved that 138 teachers were highly innovative with a mean score of $\bar{X}=75.86$, 82 of them were moderately innovative with a mean score of $\bar{X}=65.89$ and 191 of them were low level of innovative with a mean score of 58,85 based on the individual innovativeness scores. It was concluded that the majority of teachers were low-level of innovative by and large.

The respondents with above 80 points were categorized to be innovators, those with between 69 and 80 points to be early adopters, those with between 57 and 68 points to be early majority, those with between 46 and 56 points to be late majority, and those with below 46 points to be laggards according to the total scores of individual innovativeness (Hurt et al., 1977). In Table 2, the descriptive statistics regarding the frequency, percentage, mean and standard deviation for the individual innovativeness categories of teachers.

Table 2: Descriptive Statistics for The Individual Innovativeness Categories of Teachers

Innovativeness categories	f	%	Minimum	Maximum	$\bar{X}$	Ss
Innovators	39	9,48	81	94	84,89	3,56
Early adopters	99	24,08	69	79	72,31	2,72
Early majority	223	54,25	57	68	62,60	2,96
Late majority	50	12,16	50	56	53,68	1,88
Laggards	0					

According to Table 2, it can be observed that the majority of teachers were in the category of “early majority” ($f=223$; 54.25%) based on their individual innovativeness scores. The following ones were the categories of “early adopters” ($f=99$; 24.08%), “innovators” ($f=39$, 9.48%), “late majority” ($f=50$, 12.16%). It was clear that there was no one in the category of “laggards” ($f=0$).

Descriptive statistics for the teachers’ overall individual innovativeness and its sub-dimensions were submitted in Table 3.

Table 3: Descriptive Statistics for The Individual Innovativeness Sub-dimensions of Teachers

Sub-dimensions	n	$\bar{X}$	Ss
Resistance to change	411	2,53	,65
Opinion-leading	411	3,43	,71
Openness to experience	411	3,91	,54
Risk-taking	411	3,75	,79
Total	411	3,22	,35

The examination of Table 3 yielded that teachers had the lowest mean in the sub-dimension of “Resistance to change” ($\bar{X}=2.53$) and the highest mean in the sub-dimension of “Openness to Experience” ($\bar{X}=3.91$).

The workers’ own evaluation for their categories of innovativeness and the reasons of the categorization are important in order to develop, recommend and apply new methods in accordance with the nature of the job. In this regard, the opinions of teachers about the category of innovativeness in which they places based on their scores of the individual innovativeness scale and the factors that affected their individual innovativeness behaviors were thoroughly examined in the qualitative phase of the study. The opinions of teachers on the individual innovativeness category that deemed appropriate for themselves were given in Table 4.

Table 4: The Opinions of tTachers on Individual Innovativeness Categories

Category	Sub-category	Codes	n
Innovators	Openness to experience	Investigator	5
		Experiencer	4
		Excited	3
		Entrepreneur	3
Early adopters	Opinion-leading	Authentic	2
		Leader	5
		Creative	4
		Adviser	3
		Responsible	3
		Trustworthy	3
		Promoter	2
Early majority	Not taking risk	Uncertainty	5
		Perfectionist	4
		Disclaimer	4
		Curiosity	3
Late majority	Resistance to change	Caution	5
		Suspicion	4
		Reluctant	4
		Abused	3
		Abstainer	3
		Habits	3

As clear in Table 4, the teachers in the category of innovators uttered that they were open to try new things, had an investigative approach for new methods and ideas, always cared to be unique and to make a difference and everything new was excited them. Some of the participants expressed their views as follows:

"Success or failure is not very important to me, the important thing is to try new things, to be the initiator of something new. Therefore, I like sophisticated readings and out-of-field research..." (P:1)

"Especially something difficult is exciting. Though it is difficult for many people to start with new methods and practices, I usually prefer to try new things about my job and reflect my own values and beliefs in practice..." (P:3)

"I have always been flexible about trying new things. So, I have no conservative side. First of all, I trust in myself, I research on the subject matter. My job excitement rises as I do search..." (P:4)

The teachers in the category of early adopters defined themselves as people who lead and supported their colleagues and had creative ideas during the implementation of innovations, and were often consulted, trusted and responsible when something new occurred. Some of the participants voiced as follows:

"One of the most important goals of education is to train productive and creative individuals who do not repeat themselves. Thus, I think that teachers should exclusively be creative, risk-taking and innovative..." (P:1)

"I have always been supportive to my friends. When something new happens, I have rhetoric that "If you are ready, I am in." They care about my thoughts..." (P:2)

"I read a lot about my field. I am the person to be consulted when new thing happens, especially since I am curious about new methods, practices, and course materials. I encourage and support my friends in innovations..." (P:3)

"When I tell them about the contribution of whether my own new ideas or managerial innovative offers, my colleagues usually say, "We trust you, let's work together" ... " (P:4)

"I am open to innovations. I do not give up until I reap the fruits of my attempts and I try to do it in the best way. As my friends know this characteristic of me, they usually assign me as the coordinator of team work, and they trust me..." (P:5)

The teachers in the category of early majority indicated that uncertainty and incomprehension about taking possible risks of trying something new made them nervous, so they did not accept everything easily, they were perfectionists, and they constantly asked questions by wondering what the potential risks would be. Some of the participants articulated that:

"I can say that. I don't accept everything immediately, I think about, wonder and figure out the possible risks..." (P:1)

"Uncertainties have always frightened me. I have to analyze the things clearly. That's why, innovation means change. Every change brings uncertainties, so I don't like taking risks much ... " (P:3)

"If there is risk, I do not take risks in innovation. In general, let me see the results of others who try first. This leads incomprehension and loneliness for me among my colleagues..." (P:4)

"I have some perfectionism, so I question the differences, think about the risks, and then decide whether to apply or not. Because I think that taking actions without considering the possible risks usually result in failure..." (P:5)

The teachers in the category of late majority pointed out that they were cautious and skeptical about trying new practices, and they often tended to continue their reluctance, abstention and old habits as innovation meant compulsory alteration. Some of the participants expressed their opinions as follows:

“New things have always made me nervous. So, I think much but rarely act, so I'm cautious...” (P:1)

“There are constant changes in Ministry of National Education, something new comes before we get used to the current one. This, frankly, makes me abstain from and reluctant to innovations...” (P:3)

“When there is an innovation, the colleagues often learn from each other. Nobody tells what and how to do. In this case, I think the oldest methods I know are the best...” (P:4)

“Trying new things means quitting old habits and behaving differently, which is not so easy to adopt. That's why, innovation brings along some difficulties. When I think in this way, I abstain and wonder a lot...” (P:5)

In the qualitative phase of the study, the question of what factors affected the individual innovativeness behavior of teachers was sought apart from their opinions about the individual innovativeness category that they deemed appropriate for themselves. Teachers' opinions about the factors affecting individual innovativeness behaviors were given in Table 5.

Table 5: Teachers' Opinions about The Factors Affecting Individual Innovativeness Behaviour

Category	Sub-category	Codes	n
innovativeness	Individual factors	Personality traits	5
		Problem solving skill	4
		Willingness to learn new things	4
		Entrepreneurial spirit	3
		Managerial support	5
	Organizational factors	Work environment	4
		Resources	3
		Awards	2
		Technology	5
		Social perception	4
Individual behaviour	Environmental factors	Professional interest	5
		Professional education	4

According to Table 5, teachers noted that their personality traits, problem solving skills, willingness to learn new things, and risk-taking entrepreneurship were effective on their innovativeness behaviors. They also highlighted the importance of their managers' attitudes, the suitability of work environment, accessibility to use resources, awards given, technological developments and social perception regarding their professional status. Besides these, they emphasized that their professional interest and training had an effect on individual innovativeness behaviors. Some of the participants uttered that:

“Many other factors such as my enthusiasm for new things, my self-confidence, my willingness to do in-depth research while solving problems, my love of profession, and the support of the school administration have an impact on my innovativeness behavior...” (P:5)

“Considering that technology is in all areas of life today, I think that it is very effective for me to follow new methods and practices, to benefit from technology, to experience the feeling of choosing my profession again if I come back to the world...” (P:9)

“The physical facilities of the school where I work, the attitudes and behaviors of my administrators towards me, my accessibility to course materials and of course the education I receive are quite effective on whether I have an innovative perspective or not...” (P: 11)

“The social status of my profession affects whether my social perception towards my profession is positive or negative. The more valuable I feel, the more I become creative together with increased willingness to search new things. Moreover, having an entrepreneurial spirit in the social

and economic fields also has an impact on my innovativeness behavior. Herein, the proficiencies upskilled by the undergraduate trainings gain importance... ” (P:17)

“Lots of things can be listed here. If I say the first things that come to my mind, for example, the reward for the job done, the attitudes of the managers, the efficiency of the working environment, my own personality characteristics, etc. are effective...” (P:20)

Conclusion, Discussion and Recommendations

It is imperative for individuals to exhibit individual innovativeness behaviors in order to be extraordinary and to create a difference among their colleagues in an increasingly competitive environment. Within the scope of this study, it was attempted to reveal the innovativeness approaches of secondary school teachers, to determine the underlying reasons of their category of innovativeness behavior, and to examine the factors affecting their individual innovativeness. As a result of the study, it was concluded that the majority of teachers regarded themselves as either low-level innovator ($n=191$; $\bar{X}=58.85$) or high-level innovator ($n=138$; $\bar{X}=75.86$) depending on the individual innovativeness scores. Individual innovativeness refers to situations where individuals take risks about new occurrences, accept, adapt, tolerate and be open to new experiences (Korucu & Olpak, 2015). In this regard, the participating teachers considered themselves either as fully adaptive, entrepreneur and investigator, or otherwise cautious, suspicious and abstaining from new situations. In their study, Kılıç and Ayvaz Tuncel (2014) revealed that teachers' level of individual innovativeness was low. On the other hand, Demir Başaran and Keleş (2015) concluded that the innovativeness level of teachers was at average level. It is clear that some of the research results are similar to those of the present study and some of them are divergent. The differentiation among the findings is believed to be due to the fact that individual innovativeness behavior is a concept that changes with time and is influenced by the conditions of the day and social necessity. Hirschman (1980) argued that the results obtained with regard to individual innovativeness would differ depending on the variables such as the level of education, professional status and the place of residence.

It was found that the majority of teachers were in the category of “early majority” ($f=223$; 54.25%) based on their individual innovativeness scores and the following categories were “early adopters” ($f=99$; 24.08%), “innovators” ($f=39$, 9.48%), “late majority” ($f=50$, 12.16%). Yuan & Woodman (2010) declared that individuals may have different innovativeness approaches according to their qualities of developing, adopting, applying, taking risks and being open to new experiences. In this regard, it is possible to claim that teachers may be categorized differently in terms of innovativeness depending on the variables of gender, age, education and cultural accumulation. In addition, the finding that the participants are mostly in the category of “early majority” can be explained by the perception that they do not want to be the first to experience a novelty. That's why, those who are in the category of early majority handle the innovations carefully and spend plenty of time thinking before adopting a novelty (Tırpan, 2016). Similarly, the participating group of the research on individual innovativeness in Turkey were mostly in the category of “early majority” (Acarol, 2019; Yılmaz, 2018; Kaya, 2017; Öztürk Yılmaz, 2015). In our study, it was revealed that there was no one in the “Laggards” ($f = 0$) category. Since laggards are firmly attached to their traditions and habits, their process of adopting to innovations is too long (Özgür, 2013). Based on this finding, it can be argued that the teachers in the present study had a cautious approach about accepting any innovation despite not being biased.

According to another research finding, teachers had the highest mean in the sub-dimension of “openness to experience” ($\bar{X}=3.91$) and the lowest mean in the sub-dimension of “resistance to change” ($\bar{X}=2.53$) and it was followed by the sub-dimensions of “opinion-leading” ($\bar{X}=3.43$) and “risk-taking” ($\bar{X}=3.75$). The absence of any participant in the category of laggards supports that teachers are less concerned about change. Similarly, Tuncer (2018) concluded that teachers had the

highest mean in the sub-dimension of openness to experience in her study. In this regard, we can infer that teachers are willing and open to try new ideas and methods. Ritchhart (2004) emphasized that innovative teachers strived to care for professional development, to be open to experience new learning-teaching strategies, and to implement new skills by changing their habits. In addition, it was concluded that teachers were at moderate level of innovativeness according to the mean score for the overall scale ($\bar{X}=3.22$). In support of this result, Demir Başaran and Keleş (2015) reported the moderate level of overall innovativeness in their study asking the question of who innovative is, examining teachers' levels and categories of innovativeness, and investigating the relationship between the categories and certain variables. Similarly, İncik and Yelken (2011) found that pre-service teachers were at moderate level of innovativeness and were in the category of early majority in their study entitled "The Innovativeness Levels of Primary School Teacher Candidates".

The underlying reasons of individuals' attitudes towards innovations and differences have significant role on the type of innovators they categorize themselves. In this regard, interviews were employed with the participants in the category of "innovators" in the qualitative phase of the study. As a result of the findings obtained from the interviews, the teachers were in the category of "innovators" as they were investigators, tried new things, excited about innovations, entrepreneurs and preferred to be authentic in their job. Based on this finding, we can define innovator teachers as people who care about scientific knowledge, focus on their own job and have a vision. It is significant for teachers to exhibit innovative behaviors to raise generations with innovative features. It is because what really creates a difference in student's life is not the lesson but the teacher (Wanger, 2016). From this point of view, we can assert that innovator teachers should be highly motivated and skilled in their profession. Rogers (2003), on the other hand, specified that innovators are the first to adopt innovations in the social structure they belong to, who are not afraid of taking risks, are hasty, brave and entrepreneurial. We can also consider innovators as people seeking opportunities, productive, risk-taking, and synthesizing all their knowledge. In support of this discourse, Kleysen and Street (2001), in their literature review on creativity and innovativeness, identified 17 distinct behaviors such as determining opportunities for innovative and creative behavior, productivity, research for development, supporting-defending, etc. It was concluded that the teachers in the category of "early adopters" saw themselves as leaders, creative, adviser, responsible, reliable and supporter of their colleagues when it came to innovation. Early adopters are the individuals who are respected within the social system. Their reputation enables them to be regarded as experts who gives information and advice to potential adopters in the social system about innovations, and as opinion-leaders to be modelled (Kılıçer, 2011). In this regard, it can be claimed that the participants in the category of early adopters considered themselves as shareholders and opinion-leaders. According to Atlı (2019), the people in the category of early adopters are the ones who can lead their group and are effective in spreading innovations within the group and creating a positive attitude towards innovations. It was deduced that the teachers in the category of early majority viewed innovation to be the source of uncertainty, and therefore they tended to refuse it although they wondered what's new and different, and they took an inquisitive attitude as they regarded themselves as perfectionists. Based on this finding, it can be inferred that the teachers try to have detailed information before accepting an innovation, and they act in line with concrete indicators where they could observe the results clearly as they desire their job to be flawless. Kılıçer (2011) stated that early majority dislikes taking risks and wants to make sure whether it is reliable before adopting innovation. It is reported that those in this group of innovativeness are cautious but take the innovations into consideration after each member of the society accepts, they play an important role in the spread of innovation despite their long adopting process due to their characteristic features, they are active and rarely assume a leadership role in the society (Başaran & Keleş, 2015). It was revealed that the teachers in the category of late majority were cautious, skeptical and reluctant to change and innovation. This finding of our study implies that the teachers in this group have negative thoughts and resist change. Not having enough information about innovation, bias for having little knowledge about innovation

due to lack of investigative characteristic, age, level of education, past experiences, financial problems, reluctance to take risks and skeptical attitudes are the main reasons for approaching innovations with suspicion (Kılıçer & Odabaşı, 2013). It is understood that late majority prefer waiting for the innovations to be adopted before accepting a novelty due to their abstaining and cautious behavior.

The participating teachers in the study were addressed the question of what were the factors affecting their individual innovativeness behaviors and the obtained findings were presented under the sub-categories of individual factors, organizational factors, environmental factors and professional factors. It was realized that teachers' personality traits, problem solving skills, willingness to learn new things and entrepreneurship characteristics were individual factors affecting innovativeness. In the relevant literature, it has been determined that "generating new ideas, analytical thinking, personal characteristics and problem-solving style" affect innovative behavior (Scott & Bruce, 1994; Oldham & Cummings, 1996; West & Sacramento, 2006; Kaya & Lowcan, 2007; İşcan & Karabey, 2007; Parzafall et al., 2008). In this regard, it is clear that teachers' ability to be assertive, to be an investigator and to express themselves are effective on individual innovativeness behaviors. According to the data obtained from the participants, managerial support, the suitability of the working environment, the resources and the organizational awards for the job were the organizational factors affecting individual innovativeness behaviors. Similarly, administrative support has been found to be important for employees to have innovative ideas in the literature (Oldham & Cummings, 1996; Eren & Gündüz, 2002; West et al. 2003; Gilson & May 2005; Amo, 2006; West & Sacramento, 2006; İşcan & Karabey, 2007; De Jong & Den Hartog, 2007; Martin, Salanova & Peiró, 2007; Parzafall et al., 2008). The availability and the usability of suitable resources (working environment, time, money, government support, etc.) especially for innovative activities were also yielded to be highly important for individual innovativeness (Eren & Kılıç, 2013). Based on this finding, it can be inferred that the creative ideas and thoughts of the teachers should be supported by the school administrators during the process of developing new ideas and products, and the importance of providing the necessary resources and the power of rewarding in creating incentives should be realized. In the study, it was deduced that the individual innovativeness of teachers was also affected by environmental factors namely social perception regarding technology and their profession. In support of this result, in their qualitative study, Sönmez & Yıldırım (2014) proved that technological developments affected individual innovativeness behavior in terms of current products and methods and directed people to change. Another factor affecting individual innovativeness behavior was listed to be occupational factors including professional interest and education. The way to be successful is to perform the teaching profession with love and appealingly which requires patience, tolerance, sacrifice, continuous work and following the innovations (Carless & Arnup, 2011; Richardson; Wagner & Imanuel, 2014). In this regard, we can imply that the positive attitudes of teachers and their social perception towards their profession may have an impact on their professional life and individual innovativeness.

Based on the overall evaluation of the obtained results, it can be alleged that in today's world where change and knowledge production is rapid, the teachers should also have innovative personality traits besides being self-learning individuals as the individual innovativeness of teachers will be a discriminating feature among their colleagues. Educational organizations are asked to assume more responsibility in social change especially within the framework of the 21st century education reform initiative. Herein, teachers are both supposed to be a positive role model for the students and to have a high level of innovativeness in improving the quality of education. That's why, it is believed that the teachers who are open to innovations will have higher skills of developing new teaching strategies and making lifelong learning a philosophy of their life. Based on the research results, the followings were recommended:

- Teachers can be supported to develop a positive attitude towards accessing, structuring and implementing information.
- Suitable working conditions can be created where teachers can demonstrate their individual innovativeness.
- Innovativeness behaviors can be promoted through organizational rewards.
- Resistance to new implementations can be prevented by informing the teachers beforehand.
- Teachers can be trained to hold an innovative perspective during both undergraduate and graduate education.

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