

## The Relationship between Learning Styles and Leadership Orientations of Pre-Service Teachers

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### *Abstract*

This research aims to determine the relationship between learning styles and leadership orientations of pre-service teachers. In the research process, the data collection tool consists of "Learning Styles" and "Leadership Orientations" scales and the personal information form was applied to 452 pre-service teachers. Pearson Product Moment Correlation Analysis; to determine the relationship between the variables, and Multiple Linear Regression Analysis; to examine the predictive strength of learning styles on leadership orientations, are used. When examining the results, relationship between Avoidant Learning Style and leadership orientations are negative and relationship between the other learning styles and leadership orientations are positive that is seen. Individuals; adopting Avoidant Learning Style, are passive in learning applications and they obtain incomplete and low quality information so these information is insufficient when they transferred to the experiences of life that may be cause the situation.

*Keywords:* Pre-service teacher, learning styles, leadership orientations

### **Introduction**

Today's living circumstances which are shaped by rapid changes in science and technology is called information society. Abilities as doing research, creative and critical thinking, producing information from knowledge, using generated data, problem solving are accepted as the leading virtues of individuals that form the information society (Özer, 1998). Educational systems are required to focus on access to information, using gained information, creating new information from the ones that are obtained, expanding the created information rather than transferring and memorizing the data while educating individuals (Çömek, 2009). In the establishment process of an educational system, focusing on information, individuals' own abilities that differentiate him/her from others and the important impact of individual learning preferences must be taken into account (Erden & Altun, 2006).

Different learning preferences, which could be viewed as a source of wealth that causes diversity in the methods of individuals' interpretation and utilization of knowledge, are named as the learning styles in the sphere of literature (Babadoğan, 2000; Boydak, 2001; Dunn & Dunn, 1993; Grasha, 1996; Kolb, 1994). The term 'learning style' was first used by Rita Dunn in 1960 and defined as "each learner's usage of unique and different ways in preparation of learning new and difficult information, approaches to learning process and recalling it" (cited by Boydak, 2001). Individuals' usage of unique ways in the learning process which is the basis of the learning styles causes various acquisitions of the data even if the learning takes place in the same environment.

Individuals' learning styles are a dominant factor affecting the variety, quantity and the quality of their learning experiences (Ekici, 2003). The quality of the data that is obtained by individuals is also important in order to transfer these data into real life experiences (Carroll, 1998). The experiences and the data that already exist determine a route map to defeat the troubles that are

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confronted during a lifetime (Tengilimoğlu, 2005). Individuals who focus on problem solving activities are generally the ones that have a leader specialties and the preference of learning styles get affected from this variety of thinking principles. Depending on this situation, it is possible to state that learning activities also get affected from these thinking principles which end up with a different usage of methods for problem solving.

The diversity of the methods that are employed by people in a leadership attitude is defined as 'leadership orientations' by Bolman & Deal (1991). Bolman & Deal (1993) introduced four different leadership orientations in order to maintain proper leading activities after realizing the complex symptoms and turning them into meaningful diagnosis which must be used within a combination to get better results. *Structural Frame* is the ones which state the importance in bureaucratic specialties, chain of command, responsibilities in work division. *Human Resource Frame* stands for the human relations which focus on the emotions of the mankind. *Political Frame* states the unavoidable conflict that takes place within organizations and *Symbolic Frame* which highlights organizational culture and values.

For better understanding and resolution of the problems that are faced in today's educational institutions the most important thing is the existence of educational leaders and supervisors that are aware of the importance of this four sided leadership orientation (Dereli, 2003). On the other hand, it is believed that the resource of the variety of problem solving activities and methods is a consequence of the knowledge and experiences of educational administration. The variety of the experiences that are gained during learning activities is a result of the preference of learning styles which can possibly be defined as the route to knowledge. The source of educational administrators of the future is today's pre-service teachers. In this context, by considering the learning styles of pre-service teachers with a great care, it is possible to bring in the abilities of four sided leadership orientations during the pre-service period. Depending on this reason, with a purpose to create better learning and educational environment, pre-service teachers' learning styles is the main subject of this research.

#### *Learning Styles*

The learning style term was first used by Rita Dunn in 1960, which stands for learners' personal specialties and preferences of learning related to acquiring the data and processing it into information (Şentürk, 2010). ). Dunn defined learning styles as "individuals' approaches to stimuli in terms of sensing, processing, editing and explaining the data in the learning process". According to Dunn, the leading learning styles of individuals' are classified as qualitative variables and they cannot be changed or digitized easily (Şimşek, 2006). Keffe (1979) defined the concept of learning styles as a pattern of the cognitive, emotional and physiological characteristics that determine individuals' perceiving of the learning environments, their interactions with learning environments and their responses to learning environments (cited by Ekici, 2003).

Identifying the learning styles which state the personal preferences of learning can avail to obtain learning outcomes by maintaining a proper learning methodology design that is appropriate for learners (Babadoğan, 1994). According to Given (1996) when appropriate learning activities take place by considering the effect of learning styles, a significant amount of increase can be seen in "positive attitudes towards learning, acceptance of differences, academic success, classroom behaviors and discipline, the quantity of learning and recalling". Approaches oriented to classify learning styles that have these kind of effects on individuals' learning activities are often encountered as "Carl Gustav Jung Learning Types', 'Dunn & Dunn Learning Styles', 'Felder-Silverman Learning Styles', 'Grasha & Reichmann Learning Styles', 'Gregorc Learning Styles', 'Honey & Mumford Learning Styles', 'Jackson Learning Styles', 'Kolb Learning Styles', 'McCarthy's 4 Mat System', 'Reinert Learning Styles' in the field of literature (Woolhouse & Blaire, 2003). Amongst these models, Grasha & Riechmann Learning Styles Model is chosen to be applied depending on the fact that the model focuses on instructional and environmental preferences of individuals' and it is generally preferred to conduct studies in upper educational level students.

### *Grasha & Riechmann Learning Styles Model*

Grasha states that individuals do not born by having all specialties and they gain most of them within the help of their personal experiences. It is also underlined that, while gathering experiences individuals use a variety of methods and some of them prefer to combine these methods to reach the data that they are after (Deveci, 2011). Within this perception, Grasha & Riechmann (1975) developed a new model that determines individuals' preferences of learning within three axes depending on classroom activities. In this model, Grasha (1996) identified new learning styles which are focusing on the social dynamics of the learning process. These are classified as *Avoidant-Participant*, *Competitive-Collaborative* and *Dependent-Independent* learning styles.

*Avoidant Learning Style:* Individuals that have avoidant learning style do not like to take space in learning activities and they bear the lack of will to learn. No interaction takes place between other learners and instructors and what takes place in the learning environment does not bother them. Dislike of interactive courses, reading applications and homework are at a maximum level.

*Participant Learning Styles:* Individuals who have this learning style are fond of active participation in learning activities and they are generally pleased about learning as an outcome of interaction in the classroom. They are eager to get the responsibility of acquiring information out of the classroom and they have positive attitudes to share the knowledge when it is desired from others. They prefer interactive courses, studying materials through analysis and synthesis and they like classical exams that depend on interpreting.

*Competitive Learning Style:* Individuals that have competitive learning style as a leading one have continuous win-lose perspective in learning environment and they show great effort to win. They receive pleasure from competing with other learners for rewards or attracting instructor's attention. They like asking questions and inquiries, but they do not prefer instructor based learning activities.

*Collaborative Learning Style:* Individuals who prefer collaborative learning style like to cooperate with others around and group studies are generally more productive for them. The most effective learning takes place when they find the chance to share their skills and ideas. They like to participate in group-based projects, group presentations, and teamwork in classroom activities and peer assessment applications.

*Dependent Learning Style:* Instructors are generally regarded as the source of information and studying within the instructions are preferred. Intellectual curiosity is at a minimum level and the more the instructor guides the more individuals in this learning style learn. They are up to instructor centered learning activities; preferring summarized data and projects with concrete deadlines.

*Independent Learning Style:* Individuals who prioritize independent learning style generally have a high level of self-confidence and they are more productive when they study alone. Great interest is mostly on their personal thinking and the subjects that they choose, but they show respect to other participants in learning activities. Learner centered methodologies and tasks which help to increase personal development are favored.

### *Leadership*

It is possible to state that, the latest studies related to leadership managed to clarify different identifications of leadership besides determining various leadership styles and orientations. According to these identifications, leadership phenomenon is defined as "being able to present a variety of personal qualifications that are admired", "the art of attracting people intellectually, emotionally and physically" and "creating the future with a team, by well-designed thoughts for the existence of an organization involving purpose, culture, fundamental identities, critical processes" (Erçetin, 2000). If the identifications of leadership are studied, it can be easily seen that it is a political and cultural term away from formal positions and formed mostly by the acquired knowledge, attitudes and accomplishments. Furthermore, leadership is a continuous process involving the desired goals of the organization by effecting the behaviors and attitudes of its members (Bartol & Martin, 1991).

Within this process, there are various power elements that leaders use. Raven & French (1968) identified these power elements as *Legal Power* which is “positions in administrative hierarchy and the power of the authority”, *Reward Power* which is “providing and controlling valuable prizes”, *Pressure Power* which is “the authority to punish when people are not in expected conducts”, *Expertise Power* which is “the authority formed by being an expert in the field”, *Knowledge Power* which is “the control in distribution of organizational work and strategic planning for the future” and *Appreciation (Charismatic) Power* which is “the power acquired by being appreciated and admired by followers” (cited by Çelik, 2007). Amongst these elements legal power, reward power and pressure power are organizational power elements; power of expertise, knowledge power and charismatic power elements are considered as personal power elements and the use of personal power elements highlights importance of personal virtues that must be internalized by leaders of today’s world (Kılınc, 2009).

#### *Leadership Styles*

The rapid changes in organizational structure ended up with newly created leadership visions (Dinçer, 1998). These new leadership styles focus on terms like novelty and innovation in which creativity of leaders is in much importance (Capra, 2002). Autocratic, democratic, laissez-faire, transactional and transformational leadership are the ones formed as a result of this new vision.

*Autocratic Leadership:* The other definition of autocratic leadership is “authoritarian leadership” in which all sorts of authority and power is held by one person. Followers are supposed to obey the rules without questioning and have effect merely on the formation of the group. Followers are generally not aware of the plans and decisions of their leader. Moreover, there is fear, mistrust and timidity towards the leader's authority (Usal & Kusluvan, 2006). Autocratic leaders can make orders and directives according to personal self without relying on any statements or arguments. This kind of leaders generally concentrate on work activities and their communication level with the followers are really low (Sisk & Williams, 1981). Typical autocratic leaders are the people who like to insist, give orders, have strong desires to be in the middle of interest and are generally over confident (Boella, 1988).

*Democratic Leadership:* This sort of leaders desire an amount of participation to problem solving activities in order to use the ideas formed by brainstorming applications (Kılınc, 2009). For this cause, the followers and the leader have an effective social interaction, reciprocal confidence and friendly relationship which help them to go forward as a single social unit (Moiden, 2002). Furthermore, with the help of the empowered groups, leaders can fulfill their management duties (Davis, 1988). Democratic leaders can provide a high level of personal motivation, manage to use followers' knowledge on the process of decision making, create commitment to organizational goals and eliminate potential disputes by using effective communication (Costley & Todd, 1994).

*Laissez-Faire Leadership:* In this leadership style, leaders can give complete freedom to their followers after providing necessary resources required for the business. The main responsibility is generally passed over to followers and leaders' participation can take place only when it is required or consultancy needed (Moiden, 2002). Followers determine objectives relating to work by themselves and solve problems within the group. In this leadership style in which a complete freedom is granted, positive consequences can only be achieved by the entire motivation of followers (Sisk & Williams, 1981). The free working conditions and loose structure help the groups to internalize new changes and this situation can be seen as a motivating aspect, but a lack of coordination of the activities can also likely to happen as a consequence of this loose structure (Costley & Todd, 1994).

*Transactional Leadership:* The relationship between leaders and followers are important and to fulfill their duties leaders must be trusted by their followers (Kültür, 2006). Transactional leaders clarify the work to be performed by their followers' and the ways to accomplish these responsibilities with the awards to be given after (Avolio, Waldman & Yammarino, 1991). If the followers successfully accomplish their duties leaders generally give positive feedbacks and prizes, but if they neglect to do

so leaders can apply various sanctions (Kültür, 2006). These sorts of leaders have tendencies to supply their followers' trust and loyalty by using rewards and sanctions (Ingram, 1997). Within this respect, transactional leaders exhibit four kinds of behaviors as; *Contingent Reward*, *Recognition of Laissez-Faire*, *Active and Passive* and *Management with Expectations* (Ceylan, Keskin & Eren, 2005).

*Transformational Leadership*: The idea of transformational leadership was first introduced to the field in 1973 and in 1978, McGregor used it as a term for the very first time. In 1985, Bass generated the transformational leadership theory involving the behavior models and components related to the issue (cited by Simić, 1988). In transformational leadership the relation between the leader and the followers depend on the values of the leader and his/her ability to supply the needs of the followers (Bresctick, 1999). This sort of leadership involves attracting the followers by an impressive vision of the leader, encouraging the followers to get over the problems successfully, acceptance of the organizational goals and participation to personal development applications (Çetinkaya, 2011). Bass & Avolio (1995) identified four behavioral components for transformational leadership as idealized effect, motivating by prompting, intellectual stimulation and personal reinforcement.

#### *Leadership Orientations*

Leadership orientations are formed by Bolman & Deal (1991) in order to help leaders to study the organizational problems from different point of views depending on a holistic approach enable to use various organizational resources in an appropriate manner. In the basement of Leadership orientations, there is an idea which underlines a set of activities that concentrates on formatting various complex symptoms into a meaningful identification which helps a better understanding of a problem summing with a suitable solution (Dereli, 2003). In this context, four different leadership orientations as *Structural Frame*, *Human Resource Frame*, *Political Frame* and *Symbolic Frame* were determined depending on three primary roots as "Every position can be coherent, condensed and powerful", "Combination of the perspectives can be much more comprehensive than any other perspective" and "If an individual has multiple positions, he/she can only hold the chance to study the issue from different point of views" (Bilir, 2005).

*Structural Frame*: Bureaucratic specialties, chain of command, work division and the role responsibilities are emphasized in this perspective. The precedence of the leadership is to be certain about the followers' level of understanding related to the field. In this frame, leadership has two dimensions as *an analytic dimension* in which "the details are of much importance and the problems are carefully analyzed" and *organized dimension* in which "meaningful policies are developed and conducted".

*Human Resource Frame*: Individuals' needs and importance of their motivation is emphasized. Leaders acquire the trust and commitment of their followers by showing interest into problems of other people and by supplying participation in decision making processes. This frame consists of *a supportive dimension* in which "others are supported and cared" and *participatory dimension* in which "new ideas are always welcome to empower decision making process".

*Political Frame*: Conflict between individuals is regarded as an unavoidable issue and believed to be the main specialization of an organizational culture. Leaders generally use negotiation and bargaining techniques to come over existing conflicts. This frame has two dimensions as *a powerful dimension* in which "effective agreement procedures take place to obtain support" and *skillful dimension* in which "organizational discrepancies are solved".

*Symbolic Frame*: Organizational culture and values are highlighted within a purpose to decrease uncertainties in understanding and identifying organizational activities. By shared values and meaningful regulations symbols rule out behaviors. In this frame, there are two dimensions as *charismatic dimension* in which "a strong will is structured by a strong vision" and *inspiring dimension* in which "enchanted behaviors take place and the organizational culture is handled with care".

### *Learning Styles and Leadership Orientations*

The traits approach, which has the vision of “ individuals are born as leaders, they cannot become leaders” was the leading one amongst the leadership approaches until 1940s, but in time this idea has changed in the way to be believed as leadership behaviors can be learned (Şimşek, 2003). This opinion supported that the leading virtue which forms leaders’ behaviors was their knowledge and experiences that are obtained by their ability of learning (Cronin, 1993) and it is stated that in order to expand their qualifications leaders must have a continuous desire to learn (Korkmaz, 2008). According to this point of view, it is possible to say that learning styles of the leaders are of great importance in order to improve their leading abilities with the help of desired knowledge and experiences.

She (2005) describes learning styles as “the methods that are preferred by individuals in the learning process” and states that these styles can affect the quantity and the quality of knowledge that is acquired. Depending on this expression, it is possible to denote that learning styles can also have an effect on leaders’ problem solving capabilities and adaptation to new challenges in their leadership orientations. Furthermore, some individuals whose learning styles come forth amongst others are believed to acquire the specialties related to leadership more easily than the others. These learning styles are Kolb's *Accommodating Group* in which “interrelations take much importance than technical resolutions in the learning process” (Aşkar & Koyunlu, 1993) and Grasha & Riechmann's *Competitive Learning Style* in which “leading control of orientations take place within classroom activities” (Şentürk, 2010).

When the recent studies in Turkey are examined within the light of this information, the relations between learning styles and efficacy perception and problem solving skills were studied by some scholars (Alaçayır, 2011; Budakoğlu, 2011; Deveci, 2011; Şentürk, 2010; Uysal, 2010) and only one study related to leadership orientations examining the primary level school administrators’ leadership orientations were found out in the field of literature (Dereli, 2003). Also, it is found out that abroad studies (Mcardle, 2008; Poniatowski, 2006; Shum & Cheng, 1997; Thomas, 2002) are broadly centered on school administrators or educational leadership of higher education administrators’ leadership orientations related to gender, age, job commitment, attitudes towards job, academic success are the primary topics of inquiry. Thus, this research is expected contribute the field of literature as its purpose is to “analyze the relationship between learning styles and leadership orientations of pre-service teachers”.

## **Method**

The research was conducted in survey model which is depicted as “the approach of examining a situation that occurred in the past or still takes place, by determining the situation, event, individuals or objects within their own conditions” by Karasar (2007) purporting to identify the relations between Learning Styles and Leadership Orientations of pre-serving teachers. For this purpose, following questions were answered in the study:

1. Are there significant relationships between pre-service teachers' learning styles and leadership orientations?
2. Are pre-service teachers' learning styles significant predictors of their leadership orientations?

### *Population and Sample*

The population of the research consisted of 4419 pre-service teachers who were studying at the Faculty of Education in Çanakkale Onsekiz Mart University in 2011-2012 Academic Year. The sample was 452 pre-service teachers, who were chosen according to the learning domains with sufficient number of students and determined by disproportionate cluster sampling technique according to their grade levels. The pre-service teachers in the sample constitute 10.23% of the population.

Descriptive statistics of pre-service teachers that took place in the sample depending on age, gender, type of high school graduated, class, study area and GPA are reflected in Table 1.

Table 1.

*Frequency and Percentage Distribution of Pre-Service Teachers in the Sample Belong to Their Various Features*

Features		1	2	3	4	5	6	7	8	9	Total
Age		18-19	20-21	22-23	24-...						
	n	74	197	146	35						452
	%	16.37	43.58	32.30	7.75						100
Gender		Man	Woman								
	n	165	287								452
	%	36.50	63.50								100
Type of high school graduated		Common	Anatolian	Anatolian Teacher	F.Language intensive	Techn.& Vocat.					
	n	128	165	46	65	48					452
	%	28.32	36.50	10.18	14.38	10.62					100
Class		1.	2.	3.	4.						
	n	110	116	120	106						452
	%	24.34	25.66	26.55	23.45						100
Study Area(*)		Ger.	Eng.	Jap.	Pre-Sch.	Class	Sci.	Turk.	Comp.	PCG	
	n	52	52	55	56	50	52	52	48	35	452
	%	11.50	11.50	12.17	12.39	11.06	11.50	11.50	10.62	7.76	100
GPA		1.00-2.49	2.50-4.00								
	n	108	344								452
	%	23.89	76.11								100

(\*) Ger.=German Teaching; Eng.=English Teaching; Jap.=Japanese Teaching; Pre-Sch.=Pre-school Teaching; Class.=Classroom Teaching; Sci.=Science and Technology Teaching; Comp.=Computer Teaching; PCG=Psychological Counseling and Guidance

*Data Collection Tools*

As data collection tools, a questionnaire which composed of Grasha & Reichmann’s (1975) “Learning Styles Scale” consisting 60 items, Bolman & Deal’s (1991) “Leadership Orientations Scale” consisting of 32 items and personal information form, organized by researchers to determine various information belonging to pre-service teachers, was used.

*Learning Styles Scale:* Grasha & Reichmann’s (1975) “Learning Styles Scale” designed as a 5 point Likert scale. The scale’s validity analysis was made by Uzuntiryaki, Bilgin & Geban in 2003 and found out that it involves 6 dimensions as *Avoidant, Participant, Competitive, Collaborative, Dependent* and *Independent* Learning Styles. Furthermore, Uzuntiryaki, Bilgin & Geban (2003) identified the reliability coefficient as  $\alpha=.73$  after observing that the answers provided by the scale are coherent.

*Leadership Orientations Scale:* Bolman & Deal’s (1991) Leadership Orientation Scale’s translation into Turkish was made by Dereli (2003). Bolman & Deal (1991) examined the validity of their 5 point Likert scale and found out 4 leadership orientations, each ones within 2 sub-dimensions. Bolman (2010) identified the reliability coefficients of 4 dimensions as  $\alpha=.92$  for *Structural Frame* consisted of *Analytical* and *Organized* dimensions,  $\alpha=.93$  for *Human Resources Frame* consisted of *Supportive* and *Participant* dimensions,  $\alpha=.91$  for *Political Frame* consisted of *Power* and *Skills* dimensions and  $\alpha=.93$  for *Symbolic Frame* consisted of *Inspiring* and *Charismatic* dimensions.

As a result of the analysis within the research, the reliability coefficients of Grasha & Reichmann’s (1975) “Learning Styles Scale” and Bolman & Deal’s (1991) “Leadership Orientation Scale” with their sub-dimensions are presented in Table 2.

Table 2.

*Reliability Coefficients and Descriptive Statistics of Learning Styles and Leadership Orientations Scale*

Scales	Number of Items	Cronbach Alpha ( $\alpha$ )
<b>Learning Styles</b>		
<i>Avoidant Learning Style</i>	10	.73
<i>Participant Learning Style</i>	10	.77
<i>Competitive Learning Style</i>	10	.81
<i>Collaborative Learning Style</i>	10	.73
<i>Dependent Learning Style</i>	10	.60
<i>Independent Learning Style</i>	10	.66
<b>Total</b>	60	.85
<b>Leadership Orientations</b>		
<i>Structural Frame</i>	8	.70
<i>Human Resource Frame</i>	8	.79
<i>Political Frame</i>	8	.76
<i>Symbolic Frame</i>	8	.77
<b>Total</b>	32	.91

*Data Analysis*

The questionnaire forms used as data collecting tool were applied to the sample by researchers and obtained data's analysis were carried out with SPSS 18.0 program. In the data analysis process, primarily data collection instruments were answered by pre-service teachers and scored with 5-point Likers system as "Never=1, Rarely=2, Sometimes=3, Frequently=4 and Always=5". Then, to determine relationships between pre-service teachers' Learning styles and Leadership Orientations, Pearson Product Moment Correlation Analysis was applied. Finally, research's predictor variables were accepted as Learning Styles [(i) Avoidant, (ii) Participant, (iii) Competitive, (iv) Collaborative, (v) Dependent and (vi) Independent] and predicted variables accepted as Leadership Orientations [(i) Structural Frame, (ii) Human Resource Frame, (iii) Political Frame and (iv) Symbolic Frame] and values of regression coefficients, semi-partial correlation coefficients, multiple correlation, R<sup>2</sup> (determination coefficient) and adjusted R<sup>2</sup> which were standardized by Multiple Linear Regression Analysis were determined to examine Learning Styles' predictive power on Leadership Orientations.

**Findings**

The first research question is that "Are there significant relationships between pre-service teachers' learning styles and leadership orientations?" In line with this question, results of Correlation Analysis which were made to determine relationship between pre-service teachers' Learning Styles and Leadership Orientations are listed in Table 3.

Table 3.

*Correlation Matrix between Pre-service Teachers' Learning Styles and Leadership Orientations*

Variables	1	2	3	4	5	6	7	8	9	10
1. Avoidant Learning Style	1.00									
2. Participant Learning Style	-.39**	1.00								
3. Competitive Learning Style	-.07	.50**	1.00							
4. Collaborative Learning Style	-.15**	.52**	.31**	1.00						
5. Dependent Learning Style	-.17**	.57**	.39**	.48**	1.00					
6. Independent Learning Style	-.04	.38**	.25**	.39**	.30**	1.00				
7. Structural Frame	-.14**	.49**	.34**	.44**	.38**	.56**	1.00			
8. Human Resource Frame	-.21**	.44**	.15**	.52**	.42**	.49**	.66**	1.00		
9. Political Frame	-.10*	.39**	.33**	.39**	.24**	.48**	.64**	.60**	1.00	
10. Symbolic Frame	-.15**	.41**	.27**	.40**	.24**	.47**	.66**	.60**	.76**	1.00

\*p<.05; \*\*p<.01



According to data in Table 3; it is seen that there are significant positive relationships between *Structural Frame* and *Participant* ( $r=.49$ ;  $p\leq.01$ ), *Competitive* ( $r=.34$ ;  $p\leq.01$ ), *Collaborative* ( $r=.44$ ;  $p\leq.01$ ), *Dependent* ( $r=.38$ ;  $p\leq.01$ ) and *Independent* ( $r=.56$ ;  $p\leq.01$ ) learning styles, and there is a significant negative relation between *Structural Frame* and *Avoidant* ( $r=-.14$ ;  $p\leq.01$ ) learning style in pre-service teachers' Leadership Orientations. There are also significant positive relationships between *Human Resource Frame* and *Participant* ( $r=.44$ ;  $p\leq.01$ ), *Competitive* ( $r=.15$ ;  $p\leq.01$ ), *Collaborative* ( $r=.52$ ;  $p\leq.01$ ), *Dependent* ( $r=.42$ ;  $p\leq.01$ ) and *Independent* ( $r=.49$ ;  $p\leq.01$ ) learning styles, and a significant negative relationship between *Human Resource Frame* and *Avoidant* ( $r=-.21$ ;  $p\leq.01$ ) learning styles. While there are significant positive relations between *Political Frame* and *Participant* ( $r=.39$ ;  $p\leq.01$ ), *Competitive* ( $r=.33$ ;  $p\leq.01$ ), *Collaborative* ( $r=.39$ ;  $p\leq.01$ ), *Dependent* ( $r=.24$ ;  $p\leq.01$ ) and *Independent* ( $r=.48$ ;  $p\leq.01$ ) learning styles, there is a significant negative relationship between *Political Frame* and *Avoidant* ( $r=-.10$ ;  $p\leq.05$ ) learning style. Additionally, there are significant positive relationships between *Symbolic Frame*, another one of leadership orientations, and *Participant* ( $r=.41$ ;  $p\leq.01$ ), *Competitive* ( $r=.27$ ;  $p\leq.01$ ), *Collaborative* ( $r=.40$ ;  $p\leq.01$ ), *Dependent* ( $r=.24$ ;  $p\leq.01$ ) and *Independent* ( $r=.47$ ;  $p\leq.01$ ) learning styles, and there is a significant negative relationship between *Symbolic Frame* and *Avoidant* ( $r=-.15$ ;  $p\leq.01$ ) learning style.

Regression analysis results related to the second research question, Are pre-service teachers' learning styles significant predictors of their leadership orientations?, is given in Table 4.

Table 4.

*Multiple Regression Matrix between Pre-service Teachers' Learning Styles and Leadership Orientations*

Variables		Structural Frame	Human Resource Frame	Political Frame	Symbolic Frame
		[R=.65; R <sup>2</sup> =.43]	[R=.65; R <sup>2</sup> =.42]	[R=.56; R <sup>2</sup> =.32]	[R=.56; R <sup>2</sup> =.31]
		F <sub>(6-445)</sub> =54.72; p=.00	F <sub>(6-445)</sub> =54.03; p=.00	F <sub>(6-445)</sub> =34.06; p=.00	F <sub>(6-445)</sub> =33.55; p=.00
<i>Avoidant Learning Style</i>	$\beta$	-.02	-.09	-.00	-.05
	<i>t</i>	-.38	-2.24	-.10	-1.22
	<i>p</i>	.70	.03*	.92	.22
<i>Participant Learning Style</i>	$\beta$	.20	.12	.16	.18
	<i>t</i>	3.67	2.17	2.61	2.96
	<i>p</i>	.00**	.03*	.01**	.00**
<i>Competitive Learning Style</i>	$\beta$	.07	-.14	.15	.06
	<i>t</i>	1.71	-3.38	3.15	1.39
	<i>p</i>	.09	.00**	.00**	.17
<i>Collaborative Learning Style</i>	$\beta$	.12	.28	.17	.19
	<i>t</i>	2.75	6.31	3.50	3.92
	<i>p</i>	.01**	.00**	.00**	.00**
<i>Dependent Learning Style</i>	$\beta$	.60	.17	-.10	-.09
	<i>t</i>	1.30	3.60	-1.91	-1.77
	<i>p</i>	.19	.00**	.06	.08
<i>Independent Learning Style</i>	$\beta$	.40	.32	.34	.34
	<i>t</i>	9.85	7.83	7.73	7.61
	<i>p</i>	.00**	.00**	.00**	.00**

\* $p\leq.05$ ; \*\* $p\leq.01$

According to the data in Table 4; *Structural Frame*, pre-service teachers' Leadership Orientations, and Learning Styles show significant relationship ( $R=.65$ ;  $p\leq.01$ ). These predictor variables explain variance belonging to *Structural Frame* as 43%. According to standardized regression coefficients, importance order of Learning Styles on *Structural Frame* is; *Dependent* ( $\beta=.60$ ), *Independent* ( $\beta=.40$ ), *Participant* ( $\beta=.20$ ), *Collaborative* ( $\beta=.12$ ), *Competitive* ( $\beta=.07$ ) and *Avoidant* ( $\beta=-.02$ ). T-test results related to significance of regression coefficients analysis display that *Participant* ( $t=3.67$ ;  $p\leq.01$ ), *Collaborative* ( $t=2.75$ ;  $p\leq.01$ ) and *Independent* ( $t=9.85$ ;  $p\leq.01$ ) learning styles are significant predictors for pre-service teachers' *Structural Frame* in Leadership Orientations.

According to Table 4; there is a significant relation between learning styles and *Human Resource Frame*, one type of leadership orientations, of pre-service teachers ( $R=.65$ ;  $p\leq.01$ ). These predictor variables explain 42% of variance of *Human Resource Frame*. The importance order of learning styles on *Human Resource Frame* is; *Independent* ( $\beta=.32$ ), *Collaborative* ( $\beta=.28$ ), *Dependent* ( $\beta=.17$ ), *Participant* ( $\beta=.12$ ), *Avoidant* ( $\beta=-.09$ ) and *Competitive* ( $\beta=-.14$ ). Moreover, *t*-test for the significance of the predictors shows that the learning styles, *Competitive* ( $t=-3.38$ ;  $p\leq.01$ ), *Collaborative* ( $t=6.31$ ;  $p\leq.01$ ), *Dependent* ( $t=3.15$ ;  $p\leq.01$ ) and *Independent* ( $t=7.83$ ;  $p\leq.01$ ) are the predictors of *Human Resource Frame* in Leadership Orientations.

The data in Table 4 presents a significant relationship ( $R=.56$ ;  $p\leq.01$ ) between pre-service teachers' Learning Styles and *Political Frame* from Leadership Orientations. These predictors explain 32% of variance of *Political Frame*. According to standardized regression coefficients, importance order of Learning Styles on *Political Frame* is; *Independent* ( $\beta=.34$ ), *Collaborative* ( $\beta=.17$ ), *Participant* ( $\beta=.16$ ), *Competitive* ( $\beta=.15$ ), *Avoidant* ( $\beta=-.00$ ) and *Dependent* ( $\beta=-.10$ ) learning styles. According to *t*-test results for significance of regression coefficients, *Participant* ( $t=2.61$ ;  $p\leq.01$ ), *Competitive* ( $t=3.15$ ;  $p\leq.01$ ), *Collaborative* ( $t=3.50$ ;  $p\leq.01$ ) and *Independent* ( $t=7.73$ ;  $p\leq.01$ ) learning styles are significant predictors for *Political Frame*.

Analysis results in Table 4 reveals that there is a significant relationship ( $R=.56$ ;  $p\leq.01$ ) between learning styles and *Symbolic Frame*, one of the leadership orientations. These predictor variables explain 31% of variance of *Symbolic Frame*. Importance order of learning styles on *Symbolic Frame* is; *Independent* ( $\beta=.34$ ), *Collaborative* ( $\beta=.19$ ), *Participant* ( $\beta=.18$ ), *Competitive* ( $\beta=.06$ ), *Avoidant* ( $\beta=-.05$ ) and *Dependent* ( $\beta=-.09$ ) learning styles. Significance order of predictors decided by *t*-test for *Symbolic Frame*, are *Participant* ( $t=2.96$ ;  $p\leq.01$ ), *Collaborative* ( $t=3.92$ ;  $p\leq.01$ ) and *Independent* ( $t=7.61$ ;  $p\leq.01$ ).

### Conclusion, Discussion and Recommendations

In this research, relationship between Learning Styles and Leadership Orientations of pre-service teachers who are the leaders of future education was examined. The results gained by the research confirm that there is a significant relationship between pre-service teachers' Learning Styles and Leadership Orientations. The literature review shows that there is only one study examining school principals' leadership orientations (Dereli, 2003) even though many studies related to Learning Styles in Turkish literature can be found (Alaçayır, 2011; Budakoğlu, 2011; Devci, 2011; Şentürk, 2010; Uysal, 2010). Besides, there is no study made abroad mentioning the relation between learning styles and leadership orientations although lots of studies which are related to leadership orientations can be found (Mcardle, 2008; Poniatowski, 2006; Shum & Cheng, 1997; Thomas, 2002).

On the other hand, Cronin stated that one of the most important features of the leaders, "the people who can mobilize people to perform shared objectives", is learning skills they use to improve themselves (cited by Çetinkaya, 2011). It is also expressed that leaders who tend to create possibilities to increase through learning and followers' learning try to realize this situation as a part of the culture in organization by creating a learning climate and to perform a transformation towards a learning organizations (Barnett & Corners, 2001; Erçetin, 2000). Leaders moving in this direction are mostly from *Accommodating Group* that is formed by curious and researcher individuals according to Kolb (1984), and for Grasha (1991), they are the ones who prefer *Competitive Learning Style* that becomes prominent on individuals who always tend to win.

According to the results of this research, it is seen that there is only a negative relation between *Avoidant Learning Style* and leadership orientations, and there is a positive relationship between other learning styles and leadership orientations. In other words, as internalizing levels of learning for pre-service teachers who adopt learning styles except *Avoidant Learning Style* increase, their tendency to show behaviors in leadership orientations also increases. For this inference, individuals' preference of *Avoidant Learning Style* affects their levels of using *Structural*, *Human Resource*, *Political* and *Symbolic* leadership orientations negatively on the process of overcoming the problems. Individuals having *Avoidant Learning Style* are passive in learning environments, so the

information they get is incomplete and inadequate, which can be considered to cause this information to be inefficient for the real life.

Additionally, Learning Styles predict 43% of *Structural Frame*, and *Dependent, Independent* and *Participant Learning Styles* have predicting power on *Structural Frame* more than other learning styles. From this point, individuals who adopt *Dependent, Independent* and *Participant Learning* ways more often prefer to use *Structural Frame* of Leadership Orientation consisting of “bureaucratic features, the gain of command, division of labor and responsibilities in roles”. Hence, this situation is caused by leaders who prominent *Dependent, Independent* and *Participant* learning styles mostly focusing on current procedures, physical elements and numbers for analyzing encountered situations.

*Independent, Collaborative* and *Dependent Learning Styles'* predictive power on *Human Resource Frame* of Leadership Orientations are more than other learning styles, and they provide to predict 42% of *Human Resource Frame*. Thus, individuals who prefer *Independent, Collaborative* and *Dependent* learning styles adopt an approach taking human resource based elements into consideration on solving problems. It can be interpreted that performing reciprocal ideas and skills through listening others, participating cooperative works, using guidance provided by others, etc. cause *Human Resource Leadership Orientation* preferred by individuals.

Learning Styles predict 32% of *Political Frame Leadership Orientation*, and *Dependent, Collaborative* and *Participant* learning styles have more prediction power on *Political Frame*. Therefore, individuals who prefer *Independent, Collaborative* or *Participant* learning styles see conflicts as inevitable and accept them as the base of organization life, and they use *Political Frame* more effective in leadership applications to overcome difficulties. It can be thought that people who use these learning ways and having experiences, can be result of working with more than one person in information process, about conflicts cause them to prominent *Political Leadership Orientation*.

Learning Styles predicting 31% of *Symbolic Frame* and *Independent, Collaborative* and *Participant* learning styles' being strong predictors for *Symbolic Frame* are another result of the research. This conclusion states that individuals who featured *Independent, Collaborative* and *Participant* learning styles use *Symbolic Frame* more effectively on solving current problems than individuals who prefer other learning ways. It can be interpreted that individuals realizing common rules, cultural elements and purposes in shared learning environments with others can use *Symbolic Leadership Orientation* more effectively.

In conclusion, individuals who are leaders in educational institutions can overcome encountered problems much more effectively by using all of leadership orientations. Therefore; some courses such as educational leadership, instructional leadership and student leadership or in-class applications like case study, problem solving, discussion groups, etc. for getting knowledge and usage skills of leadership orientations can be included in pre-service education of teacher candidates who are the basis of future educational leaders. Considering that leadership orientations which are much more favorable to apply together on solving problems are affected by information and experiences gained by individuals' learning experiences, learning activities based on group work in pre-service education can be ensured for using other learning styles by candidate teachers who prefer *Competitive* and *Avoidant* learning styles. Also, researches which mention leadership orientations and learning styles, and their relations with various concepts can be performed by different research methods on different sample groups.

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