



Evaluation of Collective Teacher Efficacy from the Perspective of Four-Frame Leadership Model

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Abstract

Collective teacher efficacy, as an important factor for school effectiveness, can be improved by leader behaviors in schools. Unlike the sum of individual teachers' efforts, the concept of collective teacher efficacy points to a greater impact on student achievement when teachers unify their efficacies. Therefore, examining the leadership orientations that play a role in the development process of collective teacher efficacy was seen worth for study. In this context, the purpose of the study is to find out the relationships between teachers' perceptions about four-frame leadership orientations of principals and collective teacher efficacy. 452 primary school teachers participated in the study in which Leadership Orientation Scale and Collective Teacher Efficacy Scale were used. The teacher perceptions showed that leadership frames preferred by school principals are, respectively, structural, political, human resource and symbolic frame. It was also found that the collective teacher efficacy perceptions of teachers were influenced by seniority of teachers and settlement location of schools. Controlling for the variables of seniority and settlement location of school, all leadership frames were found to be predictors of the collective teacher efficacy. Accordingly, while the strongest predictor was the symbolic frame, the weakest predictor was the structural frame.

Keywords

Collective efficacy
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Introduction

Primary education is not only a basic right but also an important education level at shaping of human life. For this reason, the quality of primary education maintains its place on the international arena. A significant part of efforts in developing primary education focus on individual efficacies of teachers. However, increasing the quality of education includes complex and extensive actions that teachers cannot carry out with their own independent autonomous efforts (OECD, 2009, p. 101). This circumstance requires collective actions and positive beliefs about collective teacher efficacy (CTE).

CTE is associated with teachers' perceptions that they can be effective on students when they work together (Goddard, Hoy, & Hoy, 2000). It has a significant importance in educational researches due to its positive effects on school outcomes. Empirical studies have shown that CTE is an important factor at increasing student achievement (Cybulski, Hoy, & Sweetland, 2005; Fancera & Bliss, 2011; Casanova & Azzi, 2015; Tschannen Moran & Barr, 2004). So, it has become the focus of reports related to improving student achievement and creating an effective learning environment (Donohoo & Katz, 2017; Mulford, 2003; OECD, 2009).

These positive outcomes of CTE have brought a new research topic into field of educational administration. With this agenda, researchers have begun to work on how CTE can be improved in schools. One of the main issues at improving CTE is leadership. Previous studies show that instructional, transformational, transactional, shared and supportive leadership styles have an effect on CTE (Akan, 2013; Çalık, Sezgin, Kavgacı, & Kılınç, 2012; Demir, 2008; Fancera & Bliss, 2011; Goddard, Goddard, Kim, & Miller, 2015; Kurt, 2009; Ninkovic & Floric, 2018; Ross, Hogaboam Gray, & Gray, 2004; Ross & Gray, 2006).

These studies provided important evidences that CTE can be improved with different leadership types. However, schools are social organizations with technical, social, cultural and political aspects. Indeed, as Bolman and Deal (2008, p.19) stated that no single story is comprehensive enough to make an organization truly understandable or manageable. Effective managers need multiple tools, the skills to use them, and the wisdom to match frames to situations. Because of responding to the complex structure of school life as a whole, Multi/Four-frame Leadership Orientations (MLO) is regarded as a suitable tool for understanding of school leadership (Goldman & Smith, 1991). For this reason, the starting point of this study was the idea of examining the concept of CTE with MLO. In this context, we wondered whether MLO could improve the CTE and which leadership frame would be more effective on CTE at the level of primary education.

Collective Teacher Efficacy (CTE)

The conception of CTE refers teachers' perception about how much they can improve student achievement when they act as a whole. According to this concept, most objective-oriented actions in social systems require interdependent efforts. For this reason, group members have to unify their competencies and work together (Bandura, 1993, 2000). From this viewpoint, CTE was conceptualized in the field of education after Bandura discovered the positive relationship between teachers' perceptions about collective efficacy and student achievement in the 1990s (Donohoo, 2017).

CTE is defined as the perceptions of teachers in a school that the efforts of the faculty as a whole will have a positive effect on students by Goddard et al. (2000, p.480). In parallel with this definition, some empirical studies show that the collective teacher efficacy is an important factor on student achievement (Goddard et al., 2000; Casanova & Azzi, 2015; Tschannen Moran & Barr, 2004). Besides, CTE was found to explain school achievement differences (Goddard et al., 2015; Richardson, 2014). The other studies examining the relationship between CTE and student achievement show that CTE has

positive effects on student achievement when controlling socio economic status and prior achievements of students (Cybulski et al., 2005; Goddard, 2001).

In another definition CTE refers to the collective self-perception that teachers in a given school make an educational difference to their students over and above the educational impact of their homes and communities (Schechter & Tschannen Moran, 2006, p.481). In other words, CTE emphasizes creating an educational difference regardless of students' social status (Parker, Hannah, & Topping, 2006). CTE focuses on the impact of teachers on student achievement as a whole, not on an individual basis (Ramos, Silva, Pontes, Fernandez, & Nina, 2014). For this reason, CTE is an important organizational characteristic that expresses teachers' beliefs about their achievement at the group level. (Berebitsky & Salloum, 2017; Klassen, 2010). Previous empirical studies have shown that CTE has a more significant influence on student achievement than the socio-economic situation (Adams & Forsyth, 2006; Goddard et al., 2000; Moolenaar, Slegers, & Daly, 2012; Parker et al., 2006). In addition to this, Gibbs and Powell (2012) found that there is a negative correlation between collective efficacy beliefs and numbers of children who are excluded due to deleterious effects of socio-economic deprivation. So it is possible to say that, CTE may also help to reduce academic failure because of social injustice in schools.

According to the social cognitive theory on which collective efficacy is based, behavioral patterns arise from interactions of different variables. In this mechanism, cognitive, emotional and biological properties and all environmental phenomena influence each other bidirectionally. In other words, both individual and environmental / organizational factors are linked to each other by a mutual causality relationship (Bandura, 1988, 1993, 1999). The formation of collective efficacy as the result of interaction of individual and environmental factors constitutes the theoretical basis for the development of CTE.

CTE is influenced by some individual and environmental factors. Some of the individual factors associated with CTE are affective status, mastery and vicarious experiences and professional seniority. Also, self-efficacy is an important determinant of individual behaviors within the group (Bandura, 1999; Goddard, Hoy & Hoy, 2004). In parallel with this theory, many studies show that self-efficacy has an effect on CTE (Demir, 2008; Dimopoulou, 2014; Goddard et al., 2000; Gürçay, Yılmaz, & Ekici, 2009; Kimav, 2010; Yılmaz & Turanlı, 2017; Zabrina Anyagre, 2017). On the other hand, according to previous studies, some of the environmental factors affecting the CTE are the settlement location of school, school opportunities, administrative structure and leader behaviors (Cybulski et al., 2005; Donohoo, Hattie, & Eells, 2018; Goddard & Skrla, 2006; Kurt, 2012; Schechter & Tschannen Moran, 2006). In related studies, it was found that there was a significant relationships between the funds allocated for student services in the school, the financial resources to strengthen the teaching efforts of teachers and CTE (Cybulski et al., 2005). In addition, it is determined that having rural or urban facilities in terms of the region where the school is located is one of the factors that play a role on the CTE (Schechter & Tschannen Moran, 2006). However, school facilities, allocated resources and the school's rural or urban facilities are not sufficient for defining the CTE alone. In addition, leadership behaviors that provide an environment of trust in school, focus teachers on student success and support teachers to create a vision focused on school success are also of great importance (Donohoo et al., 2018; Kurt, 2012). When the ethnic and socio-cultural structure of the school has an impact on the collective proficiency beliefs (Goddard & Skrla, 2006), leadership behaviors come into play. Therefore, it is important that school leaders respect the cultural values of individuals and create a positive school culture within this framework. In this context, it is possible to say that the management structure and leadership behaviors of the school are among the important factors in the development of the CTE processes and therefore, the leaders have an important role to play.

As it seen, administrative structures of schools and leadership applications are important factors for CTE. If a school principal wants to create permanent developments at student outputs, he/she has to provide opportunities to increase collective actions (Carter, 2017). Furthermore, talking to teachers about the meaning of collective action for reaching achievement goals is seen as an effective leader behavior at development process of CTE (Donohoo et al., 2018). Indeed, one of the important characteristics of strong leaders is convincing teachers to work together in a sense of a common purpose (Bandura, 1993). So it is possible to say that, CTE can be greatly influenced and improved by leadership behaviors.

Multi-frame Leadership Orientations (MLO)

In the MLO model, Bolman and Deal (1984, 2008) examined organizations in four distinct areas as bureaucratic-structural, human resource, political, and cultural-symbolic. Researches that evaluate school leadership on the basis of MLO model has increased for the last decade (Al-Omari, 2013; Hwee Joo, 2014; Tanrıöğen, Baştürk, & Başer, 2014; Chibani & Chibani, 2013; Özdemir, 2018; Özdemir & Koçak, 2018; Özmen & Şentürk, 2018; Pennix, 2009; Pourrajab & Bin Ghani, 2016; Şimşek & Garipağaoğlu, 2016). This increase stemmed from MLO model's success at explaining the multidimensional nature of schools. Because, schools are completely human-oriented organizations with their technical, social, multi-cultural and political aspects (Goldman & Smith, 1991). In parallel with this view, Bolman and Deal (1992) state that symbols and cultures play a central role in schools and this model matches up to schools more than other organizations. For this reason, MLO offers a suitable model for multi-dimensional structure of schools.

The bureaucratic-structural frame in the model is associated with the most effective managing of structure for reaching organizational goals (Bolman & Deal, 2008). According to the structural frame, organizations are established to achieve specific goals in line with the rules. In addition, organizational goals should be preferred rather than individual goals (Bolman & Deal, 2008). At this point, leaders must provide clear instructions on how to do things, hold employees responsible for the consequences of works and operate an effective supervisory process (Bolman & Deal, 1992). Previous studies show that the most commonly used frame by leaders is structural frame (Al-Omari, 2013; Oumer & Kejela, 2017; Higgins, 2008; Bolman & Deal, 1991). However, Nguyen, Chang, Rowley, and Japutra (2016) found that the structural frame did not play a role on organizational citizenship behavior. In another study, it was found that the structural frame did not have an effect on job satisfaction as much as human resource and symbolic frame (Higgins, 2008). Additionally, according to the study by Özdemir and Koçak (2018) this frame predicted only "surface acting" that one of the emotional labour's dimensions, but did not predict "deep acting" and "genuine emotion". However, as Goldman and Smith (1991, p.4) said, "Although the essence of education has never been defined by bureaucracy, regulations, files, and schedules provide an ever-present backdrop for virtually every educational organization". In fact, Tanrıöğen et al. (2014) found that structural frame had a great importance at creating an aim-oriented culture for school leaders. So it is possible to say that, this frame is effective, but not enough to carrying out schools.

According to human resource frame, organizations are set up to meet human needs and organizations and employees need each other. This frame is related to being sensitive to employee needs, strengthening them, sharing leadership, supporting participation, student achievement and growth (Bolman & Deal, 1992, 2008). In a study, it is found that teachers expected from their leaders to be mostly use the human resource frame (Al-Omari, 2013). Because this frame contains leader support. In fact, Hwee Joo (2014) found that human resource frame was a predictor of supportive role perceptions.

According to the political frame, organizations are political arenas which are under the influence of political relations among coalition groups. So, the most critical decisions in organizations are related to allocation of scarce resources (Bolman & Deal, 2008). The studies show that dysfunctional conflicts in schools arise from unbalanced allocation of resources and power (Bayar, 2015; Plessis & Cain, 2017; Sucuoğlu, 2015; Tshuma, Ndlovu, & Bhebhe, 2016). So, school leaders should distribute resources fairly and manage the negotiation process between teachers effectively.

The cultural-symbolic frame is associated with creating a shared culture in schools. According to this frame, leaders must develop a strong vision and create common meanings. Within this frame, leaders try to creating common symbols and meanings based on respect for cultural differences (Bolman & Deal, 2008). This frame is a significant predictor of social needs satisfaction and organizational citizenship behavior (Hwee Joo, 2014; Nguyen et al., 2016). In parallel with these findings, Higgins (2008) found that teachers were more satisfied with the leaders behavior associated with symbolic and human resource frames. However, some previous studies show that the least used frame is the symbolic frame (Bolman & Deal, 1991; Dereli, 2003; Higgins, 2008; Özdemir & Koçak, 2018).

The Relations between CTE and MLO

Teachers' willingness to collectively integrate their efficacies for a common purpose in schools seems to be closely related to the leadership practices of school leaders. In other words, it is possible to say that the leadership styles used in development of collective efficacy perceptions in schools play an active role. As a matter of fact, there are significant and positive relationships between different dimensions of effective leadership practices and CTE (Cansoy & Parlar, 2018). Previous studies show that multi-frame leadership orientations are in positive relations with teachers' positive work attitudes, being in decision making process, sense of efficacy and organizational citizenship (Özmen & Şentürk, 2018; Shum & Cheng, 1997). These outcomes are considered as determinants of CTE (Bandura, 1999; Darrell, 2010; Goddard et al., 2004; Kurt, 2009).

CTE emphasize collaboration among teachers for student achievement, working together and commitment their common purpose. In fact, Oumer and Kejela (2017) revealed that, there were positive relationship between structural, symbolic, human resource frames of leadership and teacher collaboration, unity of purpose, collegial support. Similarly, Cheng (1994) found that when human, structural, political, symbolic frames of leadership were strong, then intimacy among teachers, professionalism and positive feelings about job meaning were also strong. So, these findings indicate that MLO will be able to effective on CTE.

According to the previous studies, CTE improves when school leaders develop a common mission consciousness, create a collaborative environment, empower teachers and display transformational leadership behavior (Baleghizadeh & Goldouz, 2016; Demir, 2008; Kurt, 2009; Ninkovic & Floric, 2018; Nordick, 2017; Ross & Gray, 2006; Voelkel & Chrispeels, 2017). In other words leadership practices that is related to human resource and symbolic frame create a development on CTE. In fact, Ross et al. (2004) found that shared school goals, school-wide decision making, and empowering others have an effect on CTE.

Effective leaders with multi-frame capacity can "network different types of people and groups" (Shum & Cheng, 1997). They can also make teachers willing to work together despite educational difficulties (Bandura, 1993). One of these difficulties is resource shortage. An effective political frame leader refers to fair resource allocation (Bolman & Deal, 2008). In this way, leaders will be able to contribute to the development of CTE. As a matter of fact, providing resources adequately makes CTE stronger (Kurt, 2009).

Structural frame requires managing organizations effectively in line with the rules (Bolman & Deal, 2008). In this frame, leaders must provide clear instructions on how to do things, hold employees responsible for the consequences of works and operate an effective supervisory process (Bolman & Deal, 1992). So, this frame also may be able to develop CTE.

Purpose of the Study

The purpose of the study is to find out the relationships between teachers' perceptions about four frame leadership orientations of principals and collective teacher efficacy. Within the scope of this purpose, we sought to answer the following research questions:

1. What are the levels of multi-frame leadership orientations of principals according to teachers' perceptions?
2. What is the level of teachers' perceptions about CTE in their schools?
3. Do the multi-frame leadership orientations of principals predict CTE?

Method

In this study, the relationships between all frames of MLO and CTE were described. The study was designed in a correlational research model. Within this scope, the data collected from primary school teachers were analyzed with quantitative techniques.

Participants

This research was conducted with teachers working in public primary schools in province of Uşak in Turkey. According to the figures taken from the Uşak Provincial Education Directorate, 1210 primary school teachers are working in 2017-2018 school year. Hence, 1210 primary school teachers were identified as the population of this study. The number of the teachers in the sample is determined from the sample size chart. According to the chart, the population of 1210 is represented by 297 teachers with an error rate of 5% (Krejcie & Morgan, 1970). Participants were determined by random sampling method from the city center and all districts of the city. Taking into account possible problems, the study was conducted with 500 teachers. After all, we obtained 452 scales from 54 different schools that were completely filled out. Table 1. provides general information about participants.

Table 1. Descriptive Statistics of Sample

	City Centre	District 1	District 2	District 3	District 4	District 5	TOTAL
Population	777	141	130	84	39	39	1210
Number of school in the study	15	12	14	7	3	3	54
Sample	211	80	83	31	16	31	452
Settlement location of school	<i>City Centre</i>			<i>Surrounding Districts</i>			452
Gender							
Female	126	41	44	18	7	17	253
Male	85	39	39	13	9	14	199
Seniority							
0-5 years	30	15	14	1	2	6	68
6-10 years	38	16	20	11	6	3	94
11-15 years	38	19	17	8	5	9	96
16 years and above	105	30	32	11	3	13	194

As shown in Table 1, this study was conducted with 452 teachers working in 54 different public primary schools. 253 participants were female and 199 of them were male. While 211 of teachers participated from schools located in the city center, 241 of them from other districts of the city.

Data Collection Tools

The Leadership Orientation Scale used in this research was rearranged by Thompson (2005) on basis of Bolman and Deal's (1991) scale for measuring employees' perceptions about their leaders' leadership orientations. The teachers' collective efficacy perception was measured by the Collective Teacher Efficacy Scale developed by Goddard et al. (2000). Psychometric properties of the relevant scales are explained below.

Leadership orientation scale (LOS): The teachers' views on the MLO of school principals were identified by LOS consisting of 32 items and four dimensions (structural, human resource, political and symbolic frames). The 5-point Likert-type scale was adapted to Turkish by Özcan and Balyer (2013). In the adaptation study, the four-factor structure of the scale was tested by confirmatory factor analysis (CFA). The goodness of fit indexes were reported as [$\chi^2= 973.31$; $df = 458$; $\chi^2/df= 2.13$; $GFI= .79$; $AGFI= .76$; $RMSEA= .07$; $CFI= .99$; $NFI= .98$]. Reliability studies of the scale showed that the Cronbach Alpha coefficients are .92 for structural frame, .93 for human resource frame, .91 for political frame and .90 for symbolic frame. As a result of the validity and reliability studies, it was determined that the 32-item and 4-factor scale was a useful tool for Turkish culture (Özcan & Balyer, 2013). We also tested the validity of the scale with CFA for our sample. The goodness of fit index results were: [$\chi^2= 1051.14$; $df=458$; $\chi^2/df =2.29$; $GFI= .87$; $AGFI= .85$; $RMSEA= .05$; $CFI= .99$; $NFI= .99$]. For the reliability analysis of the scale, we calculated the Cronbach Alpha coefficients. Results are as follows: [structural frame: .94; human resource frame: .96; political frame: .95 and symbolic frame: .97]. As a result, it is concluded that the LOS is a valid and reliable tool that could be used in this study when compared with the ideal values in the literature (Kline, 2011) and considered all values as a whole.

Collective teacher efficacy scale (CTES): The collective efficacy perceptions of teachers were determined by the 6-likert type CTES developed by Goddard et al. (2000). The adaptation of the scale to Turkish was carried out by Kurt (2009). In the adaptation process, validity study necessitated doing exploratory factor analysis (EFA). Consequently, 21 items was reduced to 16 items. As a result of the EFA, it was found that one-factor scale explained 31% of the variance. And it was reported that the Cronbach Alpha coefficient was .80. As a result it is stated that the 16-items and one-factor scale was valid and reliable in Turkish culture (Kurt, 2009). We did CFA to determine the validity of the scale for the sample of this study. The goodness of fit index results were [$\chi^2= 306.16$; $df=88$; $\chi^2/df= 3.47$; $GFI= .92$; $AGFI= .88$; $RMSEA= .07$; $CFI= .99$; $NFI= .99$]. The Cronbach Alpha coefficient that we calculated for reliability was .96. As a result, it is concluded that the 16-items CTES is a valid and reliable tool that could be used in this study when compared with the ideal values in the literature (Kline, 2011) and considered all values as a whole.

Procedures and Data Analysis

This research was carried out with the teachers working in public primary schools in Uşak. For this reason, necessary legal permissions was obtained. The data collection process of the study was carried out with 452 teachers working in 54 primary schools. The data were collected by researchers in three months. The data collection process was carried out by face to face on voluntary basis. Filling the scales took about 10 minutes. Before the main analysis, missing data and extreme value analyses were done. In addition, the normality of the data were tested. For this, the kurtosis/skewness coefficients and

distribution graphs were examined. The coefficients were found to be between -1 and +1, and the graphs indicated normal distribution. We started main analysis after the preliminary analyzes were completed.

In the analysis process of the study, descriptive statistics (arithmetic mean and standard deviation) were used. Interval values are calculated to facilitate interpretation of arithmetic averages. The range for the 5-likert type LOS is determined as follows: if the range was between 1.00 and 1.79: 'very low level'; 1.80 and 2.59: 'low level'; 2.60 and 3.39: 'moderate level'; 3.40 and 4.19: 'high level'; and 4.20 and 5.00: 'very high level'. For the 6-likert types CTES, the ranges were interpreted as follows: if the range is between 1.00 and 1.19: 'very low level'; 1.20 and 2.39: 'low level'; 2.40 and 3.59: 'moderate level'; 3.60 and 4.79: 'high level'; and 4.80 and 6.00: 'very high level'. In addition, Pearson correlation coefficients were calculated to reveal the relations between variables. To determine the role of MLO on CTE, the simple linear regression analysis (enter model) was performed. Based on literature, seniority (1-15 years and 16 years and above) and settlement location of school (city center and other districts of city) were entered as control variables in the first step of the analysis.

Results

In line with our purpose, we first identified descriptive statistics for CTES and LOS. Primary teachers' arithmetic means and standard deviation scores for these two variables and the correlation coefficients between them are given in Table 2.

Table 2. Summary of Inter Correlations, Means and Standard Deviations for Research Variables

Scale	Factors	M	SD	1	2	3	4	5
LOS (5-point Likert type)	1. Structural frame	4.06	0.81	-				
	2. Human resource frame	3.90	0.92	.71*	-			
	3. Political frame	3.94	0.82	.72*	.81*	-		
	4. Symbolic frame	3.81	0.98	.63*	.85*	.79*	-	
CTE (6-point Likert type)	5. CTE	4.71	0.98	.29*	.54*	.46*	.65*	-

Note: N=452, * $p < .01$

As seen in Table 2, the views of primary school teachers show that school principals display leadership practices "at a high level" in all four frames. According to results of the analysis, the mean score for structural frame is 4.06; for human resource frame it is 3.90; for political frame it is 3.94 and for symbolic frame it is 3.81. Correlation coefficients between MLO and CTE showed that there are positive correlations between these variables. According to this, there is a positive but low correlation between CTE and structural frame ($r_{\text{structural frame-cte}} = .29$; $p < .01$). Correlation coefficients also indicate moderate-level and positive correlations between CTE and the other three frames [$r_{\text{human resource frame - cte}} = .54$; $r_{\text{political frame - cte}} = .46$; $r_{\text{symbolic frame - cte}} = .64$ $p < .01$].

In this study we conducted simple linear regression by using enter model to examine the role of each leadership orientations on CTE. We entered control variables (seniority and settlement location of school) in the first step in the regression analysis. These variables were coded as dummy (for seniority of teachers: 0-15 years (0), 16 years and above (1) / for settlement location of school: other district: (0), city center: (1)). We entered the four frames leadership orientations in the second step. The results of each of four regression analyses that aimed the predictive power of MLO on CTE are presented in Table 3.

As seen in Table 3, the control variables alone explained 3.3% of the variance in CTE ($F= 7.713$, $p< .05$). Therefore, the teachers who were more senior (16 years and above) and working in central schools were found to be more likely to perceive CTE at a higher level. Controlling for the variables of seniority and settlement location of school, structural frame predicted the CTE positively ($F= 21.200$, $p< .05$) and it alone explained 9% of variance. Likewise, human resource frame ($F= 72.404$, $p< .05$), politic frame ($F= 47.577$, $p< .05$) and symbolic frame ($F= 120.560$, $p< .05$) were significant predictors of CTE. Controlling for the variables of seniority and settlement location of school, the human resource frame alone explained 20.3% of the variance in CTE. While this value was 21% for the politic frame, it was 31% for the symbolic frame.

Table 3. KÖY'ün Yordanmasına ilişkin Regresyon Analizleri

	CTE				CTE				CTE				CTE				
	β	t	R^2	ΔR^2	β	t	R^2	ΔR^2	β	t	R^2	ΔR^2	β	t	R^2	ΔR^2	
Seniority	.135	2.873*			.135	2.873*			.135	2.873*			.135	2.873*			
Settlement location of school	.106	2.270*			.106	2.270*			.106	2.270*			.106	2.270*			
			.033	-			.033	-			.033	-			.033	-	
Structural Frame	.306	6.827*			Human Res. Frame	.543	13.968*			Political Frame	.458	11.095*			Symbolic Frame	.644	18.297*
			.124	.091			.327	.293			.242	.208			.347	.314	

Note: N=452, * $p < .05$

[Control variables were coded as dummy. Seniority: 0-15 years (0), 16 years and above (1) / Settlement location of school: District: (0), City Center: (1)]

Discussion

The perceptions of primary school teachers showed us that the leadership orientations for all of the frames were high. In other studies, based on teacher opinions, it was also found that all leadership orientations were high (Al-Omari, 2013; Tanrıoğen et al., 2014). In another study, school principals stated that they used all the frames effectively (Özdemir, 2018). These findings show us that the school principals know the importance of all leadership frames and they can display the behaviors of them. So this is a very pleasing finding for elementary schools. Indeed, in the model of Bolman and Deal (2008), each frame responds to a different function. For this reason, only one frame is insufficient to understand and explain the structure of human-oriented social systems. Naturally, the most influential leaders are those who can use all frames. In this context, Chibani and Chibani (2013) state that school principals should know the differences among four leadership orientations and use the all frames in the right place at the right time.

Our findings show that structural frame is the most used type of leadership. On the other hand, the lowest used leadership frame is symbolic frame. This ranking for structural and symbolic frames is similar to some research findings (Al-Omari, 2013; Higgins, 2008). However, the rankings of all leadership orientations show differences in various studies (Dereli, 2003; Özdemir & Koçak, 2018; Tanrıoğen et al., 2014). These differentiations may be due to the school environments. In other words, we think that leadership orientations are significantly influenced by the context of the schools. As a matter of fact, Pennix (2009) found that leadership orientations differ according to school size, school location and some personal characteristics of the principals. According to our study, the most common used leadership orientation was structural frame. The reason for this may be the centralized structure of the education system in Turkey. In this context, school leaders have to follow the instructions and directives from the center and to carry out the procedures required by the bureaucracy (Akgün & Şimşek, 2011). This situation limits them to respond to the interests and needs of teachers (Keser & Gedikoğlu, 2008). So, principals may be influenced by the central structure of educational system and may tend to display the leadership behaviors of structural frame. In addition, the structural frame may require less effort and emotional labour than the other frames in terms of views of school principals. But the schools based entirely on human relations cannot administrated solely by rules and bureaucracy (Goldman & Smith, 1991).

Another finding in this study showed that the CTE perceptions was high. Previous studies at primary schools showed that the levels of CTE were high or almost high (Cybulski et al., 2005; Çalık et al., 2012; Duman, Göçen, & Duran, 2013; Gürçay et al., 2009; Parker et al., 2006). On the other hand, the level of CTE perception is relatively lower at high school and university levels (Kimav, 2010; Yılmaz & Turanlı, 2017). In another study, CTE perceptions of primary school teachers were found to be significantly higher than branch teachers (Duman et al., 2013). One of the reasons of this may be more family support and higher family participation at primary education level. As a matter of fact, Dauber and Epstein (1993) point out that family participation at primary school level is higher than other levels. Moreover, severe discipline problems, bullying and violence in primary schools in Turkey are relatively low compared to upper levels of education (Hoşgörür & Orhan, 2017). This may also strengthen the primary school teachers' collective actions that enable to work at full capacity. In fact, Goddard et al. (2000) evaluated the disciplinary problems and family support among the determinant factors of CTE.

According to CTE literature, it is influenced by individual and environmental factors. In this study, we have seen that the seniority and settlement location of schools had a significant role on CTE. More senior teachers tended to have a higher perception of CTE. Previous studies provided the evidences that is parallel with this finding of our research (Dimopoulou, 2014; Duman et al., 2013; Goddard & Skrla, 2006). It is stated in the literature that teachers' mastery and vicarious experiences are effective on CTE. Especially, successful experiences have been evaluated as an empowerment factor of individual and collective efficacy perceptions (Goddard et al., 2004). In this context it is possible to say that, the more teachers' seniority increases, the more their efficacy perceptions increase due to their experience of mastery.

Another finding of our research showed that CTE perceptions vary depending on settlement location of school. According to this, CTE perceptions of the teachers working in the city center tended to be more positive. In other studies, it was determined that the teachers working in urban schools had a higher CTE perception than those working in the rural areas (Duman et al., 2013; Goddard & Skrla, 2006; Schechter & Tschannen Moran, 2006). There is knowledge in the literature that schools in rural areas are more disadvantaged in terms of educational materials, school size and building structure, working environment, technology, financial support and number of teachers (Lawless, 2009; OECD, 2013). So, the higher CTE perceptions in the central schools can be explained with their conditions and opportunities which are more sufficient than in rural schools'. The studies suggesting that school opportunities and environment impact on CTE support our inference (Cybulski et al., 2005; Duman et al., 2013; Goddard et al., 2000; Zabrina Anyagre, 2017).

According to this study, there were positive correlations between MLO and CTE, and all leadership orientations were found to be significant predictors of CTE. It is determined that the strongest relation and predictability belong to the symbolic frame. The symbolic frame was followed respectively by the human resource frame, the political frame and the structural frame.

The symbolic frame, which is the highest predictor on CTE in this study, has great importance in creating a culture of collective success in schools. In fact, perceived CTE refers common beliefs about achieving high success at school. Tanrıöğen et al. (2014) found that there was a significant relationship between using of symbolic frame by school leaders and school achievement culture. Similarly, this frame was found to have an effect on teachers' emotional labour (Özdemir & Koçak, 2018). In this context, the symbolic frame creates an energy that unites people for a purpose and enables them to reach their goals (Bolman & Deal, 2008).

According to this research, the second highest predictor of CTE is human resource frame. Leaders who are competent in this frame count employees in decision making processes and strengthen them (Bolman & Deal, 1992). Short, Rinehart, and Eckley (1999) found that teachers feel more empowered in schools where human resource frame leadership orientation is high. Additionally, teachers can only question each other and the procedures in an environment where they feel safe (Hoy, 2003). Therefore, teacher participation to collective activities increase in the schools where the human resource frame practices are displayed effectively. Previous studies also showed that the CTE is high in schools where teachers are strengthened, their participations to decision processes are supported, an effective communication environment is established, motivation and rewarding system are applied (Çalık et al., 2012; Goddard et al., 2004; Nordick, 2017; Zabrina Anyagre, 2017). In other words, the leadership practices of the human resource frame affect the CTE positively.

Our study findings showed that the two most effective frames on CTE were symbolic and human resources. Similarly, Higgins (2008) found that teachers are more satisfied with principals who preferred symbolic and human resources frames to political and structural frames. Previous studies also shows us that leader behaviors of symbolic and human resources like as creating common mission and collaboration among teachers, empowering them and providing participatory decision making process are effective on CTE (Baleghizadeh & Goldouz, 2016; Demir, 2008; Kurt, 2009; Ninkovic & Floric, 2018; Nordick, 2017; Ross et al., 2004; Ross & Gray, 2006; Voelkel & Chrispeels, 2017). Therefore, we can say that school leaders need to pay attention to these two frames in the development process of the CTE.

The third strongest predictor of CTE was the political frame. It is particularly concerned with power relations, conflicts management between coalition groups and resource allocation. Studies show that teacher conflicts and groupings result from distribution of school resources and management of power relations (Bayar, 2015; Plessis & Cain, 2017; Sucuoğlu, 2015; Tshuma et al., 2016). In this context, the resolution of the conflicts between teachers and the effective negotiation management have a great importance in development process of collective actions. In fact, it is found that principals in rural areas are more likely to use this frame than in urban areas (Pennix, 2009). This may be due to lack of resources in rural areas. So it is possible to say that the politic frame leadership behaviors are prerequisite for teachers to be able to work together. As a matter of fact Shum and Cheng (1997) stated that, multi-frame leadership refers to ability to networking different types of groups or peoples. This helps improving the CTE.

Finally, we found that structural frame was the weakest predictor of CTE. In parallel with this finding, Akan (2013) found that there was a weak relationship between transactional leadership and CTE. However, at this point Tanrıöğen et al. (2014) found a positive relationship between structural frame leadership orientation and goal-oriented culture in school. So we can say that this frame is important for fulfilling the tasks and achieving the aims, but not enough to understand antecedents of collective actions in schools.

Conclusion and Suggestions

CTE identifies how much effort they will devote to school goals. Strengthening the CTE depends on implementations of school principals. The four-frame leadership orientations that respond to each of the structural, political, human resources, and symbolic dimensions of schools are remarkable determinants of CTE. Especially the symbolic and human resource frame have stronger impacts on CTE. This is quite natural for people-oriented social systems. On the other hand, the structural frame leadership is important for the existence of the organization, but it is not adequate for explaining schools as a whole.

Based on these findings, a school principal who wants to improve the CTE in his/her school should pay attention to professional, academic and affective needs of teachers, and create common meanings that would hold all teachers together. In particular, they should review their symbolic frame leadership practices, discover their application shortcomings, try to eliminate them and create social environments to develop common consciousness.

CTE is one of the organizational feature influenced by individual and environmental factors like as seniority and settlement location of school. For this reason, school leaders should provide self-improving professional experiences to the teachers who are new in the profession, and encourage them in achievement. Similarly, new resources should be created in the schools which have limited

opportunities, and teachers should be motivated to use them in the most effective way. In other words, school leaders should make an effort to create new resources on the basis of compliance with law and distribute these resources fairly. These mean that the human resource and political frame leadership behaviors must be displayed effectively by principals.

This research was conducted with primary school teachers. Given the differences between the levels of education, it may be beneficial to carry out this study in other education levels. In this study we evaluated the relationship between leadership orientations of school principals and collective teacher efficacy according to the perceptions of teachers. So, conducting future research with school principals and evaluating these relationship from their perspective can contribute to the field. Also we tried to determine the relationships between MLO and CTE with a quantitative methods. Future research needs to find out the relationship between these variables by qualitative methods for schools with different problematical conditions.

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