Predictors of Leadership Effectiveness for Turkish Secondary School Teachers

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ABSTRACT. The aim of this study is to find out leadership behaviours of secondary school teachers in the classroom. For this purpose, 300 secondary school teachers were asked to complete Integrated Competing Values Framework (ICVF) questionnaire in order for us to explain leadership behaviour in this context. Repeated measures ANOVA and multiple regression analysis techniques were used in analysing the data. Multiple regression analysis revealed that the Deliverer, Developer and Broker were the strongest predictors of effectiveness. Furthermore, according to the results there was no gender differences found in the roles displayed. All six operational roles of the ICVF – Deliverer, Developer, Innovator, Broker, Monitor and Integrator– were displayed, with the Deliverer displayed significantly more than the Monitor.

Keywords: Integrated Competing Values Framework, leadership, effectiveness.

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ÖZET

Amaç ve Önem: Öğretmen liderliği, öğretimsel vizyon geliştirerek ve paylaşarak sınıf etkinliklerini etkin olarak düzenleyebilme ve okul etkinliklerinde de işlevsel düzeyde roller üstlenebilme ve geliştirebilme yeterliğidir. Etkili bir lider olarak öğretmen, vizyon geliştirme, vizyonunu paylaşma ve tüm öğrencilerin gelişimine ve bireysel farklılıklarına uygun öğrenme yaşantıları düzenleme sorumluluğuna sahiptir. Öğretmenler liderlik rollerini gerçekleştirirken hem okulda hem de sınıf içinde bu rolleri oynamaktadırlar (Can, 2006). Sınıf içinde öğretmen liderliği, öğrencinin başarısını pozitif yönde etkilemede ve öğrenciyle pozitif ilişkinin kurulmasında oldukça önemli bir yer almaktadır (Argyris and Schon, 1996). Liderlik alanyazınında öğretmenin sınıf içinde liderliği ile ilgili çok az çalışmanın olduğu görülmektedir (Can, 2006; Cheng, 1994; Çağlar, Yakut ve Karadağ, 2005; Branson, 2007; Begley, 2007). Bu çalışma, öğretmenlerin sınıf içinde liderlik davranışlarının etkililiğini araştırmaktadır. Bu kapsamda öğretmenlerin sınıf içinde liderlik davranışları, Bütünleştirilmiş Rekabet Değerleri Çerçevesi (Integrated Competing Values Framework= ICVF) ölçeğinden yararlanılarak incelenmiştir.

Yöntem: Bu araştırmada Vilkinas ve Cartan (2001, 2006) tarafından geliştirilen Bütünleştirilmiş Rekabet Değerleri Çerçevesi ölçeği kullanılmıştır. Bu boyutlar "kurtarıcı, geliştirici, yenilikçi, girişimci, gözlemci ve bütünleştirici"dir. Ölçeğin orijinali İngilizce olduğu için Türkçeye uyarlaması yapılmıştır. Bu kapsamda eğitim yönetiminde uzmanlar ile İngilizce dil bilgisi konusunda uzmanlar ölçeği Türkçeden İngilizceye daha sonra İngilizceden Türkçeye çevirmiştir. Birbirinden bağımsız olarak çevrilen ölçme araçları birbirleriyle karşılaştırılmış ve uzmanların ortak görüşleri doğrultusunda ölçme aracına son şekli verilmiştir. Ölçeğin geçerlik ve güvenirlik çalışmasında açımlayıcı ve doğrulayıcı faktör analizlerinden yararlanılmıştır. Bu araştırma Aydın ilinde çalışan 300 ortaöğretim öğretmeni ile gerçekleştirilmiştir. Verilerin analizinde Anova ve çoklu regresyon analizi kullanılmıştır.

Bulgular: Araştırmanın bulgularına göre etkili liderlik boyutlarından olan kurtarıcı ve gözlemci boyutları arasında anlamlı farklılıklar bulunmaktadır. Ortaöğretim öğretmenlerinin gösterilen rollerde cinsiyetlerine göre anlamlı farklılık tespit edilmemiştir. Çoklu regresyon analizinin sonucunda kurtarıcı, geliştirici ve girişimci boyutları en güçlü liderlik belirleyicileri olarak tespit edilmiştir.

Tartışma ve Sonuçlar: Bu araştırma öğretmenlerin sınıf içindeki rollerinin oldukça karmaşık olduğunu göstermektedir. Bu araştırmanın sonuçlarına göre, ortaöğretim öğretmenleri sınıf içinde öğrencileri etkilemek için kurtarıcı, geliştirici, yenilikçi, girişimci ve gözlemci rollerini kullanmaktadır. Ortaöğretim öğretmenleri en fazla kurtarıcı, geliştirici ve girişimci rollerini tercih etmektedir. Ortaöğretim öğretmenlerinin bu roller arasında oldukça karmaşık davranışlar sergilediği söylenebilir. Araştırmanın bulgularına göre ortaöğretim öğretmenleri sınıf içinde liderlik davranışlarını yansıtırlarken bütünleştirici (Integrator) rolü kullanabilirler. Ayrıca gelecekte yapılacak gelişim etkinliklerinde 360^{0} değerlendirme süreci etkili olabilir. Buna bağlı olarak akademisyenler öğretmenlerin hizmet- içi eğitimlerine (örneğin ICVF gibi) sınıf içinde liderlik davranışlarına yönelik programlar dâhil edebilir.

Türkiye'de Ortaöğretim Okul Öğretmenlerinin Etkili Liderlik Belirleyicileri

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ÖZ. Bu çalışmanın amacı sınıf içinde ortaöğretim öğretmenlerinin liderlik davranışlarını incelemektir. Bu amaçla, Bütünleştirilmiş Rekabet Değerleri Çerçevesi (Integrated Competing Values Framework) ölçme aracı 300 ortaöğretim öğretmenine uygulanmıştır. Verilerin analizinde tekrarlı ölçümler için ANOVA ve çoklu regresyon analizi kullanılmıştır. Çoklu regresyon analizinin sonucunda; Kurtarıcı, Geliştirici ve Girişimci boyutları en güçlü etkili liderlik belirleyicileri olarak bulunmuştur. Bu araştırmanın bulgularına göre cinsiyete göre liderlik rollerinde anlamlı farklılık bulunmamaktadır. Araştırmada Bütünleştirilmiş Rekabet Değerleri Çerçevesi'nin altı işlevsel rolü olan Kurtarıcı, Geliştirici, Yenilikçi, Girişimci, Gözlemci ve Bütünleştirici boyutları gösterilmiş, Kurtarıcı ile Gözlemci boyutları arasında anlamlı farklılık tespit edilmiştir.

Anahtar Sözcükler: Bütünleştirilmiş Rekabet Değerleri Çerçevesi, liderlik, etkililik.

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INTRODUCTION

Teacher leadership is the ability of arranging classroom activities effectively, taking active roles in school activities and improving these activities by constituting and sharing an instructional vision. Teacher as an effective leader has responsibilities such as improving and sharing a vision and giving opportunities fort he improvement of all students by providing individualistic learning environments. While the teachers were implementing leadership roles, they were playing roles both school and classroom (Can, 2006). Furthermore, teacher leadership in the classroom is crucial for the building of positive relationships that have a significant positive impact on students' achievements (Argyris and Schon, 1996). Few studies (Cheng, 1994; Çağlar, Yakut and Karadağ, 2005; Branson, 2007; Begley, 2007) have attempted to explain this leadership behaviour by analysing it within the context of leadership literature. There are two exceptions: Pounder (2006), who used the transformational leadership literature to explain the leadership behaviour of teachers, and Davies and Coates (2005) who used the Competing Values Framework to explain school leadership. This study has used the Integrated Competing Values Framework (ICVF) to explore teachers' leadership behaviour in Turkey. The ICVF is a dynamic, theoretical framework that focuses on the process of leadership, its associated behaviours and effectiveness (Vilkinas and Cartan, 2001). While it has not been used previously in this context, it can be argued that theoretical frameworks developed for organisations also have application to the classroom (Cheng, 1994; Luechauer and Shulman, 2002; Vilkinas, Leask and Rogers, 2007). There has been extensive research on the leadership of organisations that can be used to enlighten the limited research undertaken to explain leadership in the classroom.

During the last two decades of the 20th century, Robert Quinn developed and then, with the help of his associates, extended the Competing Values Framework (CVF) to explain the various managerial roles required for personal effectiveness in complex organisational environments (Quinn and McGrath, 1998; Quinn and Rohrbaugh, 1983; Quinn et al., 2007). He was one of the first researchers in the field of management to recognise the inherently paradoxical nature of effective management, which must at once be adaptable and flexible, yet stable and controlled, and which must be strategic and goal-oriented while also being pragmatic and attending to human resources and risk management. Since Quinn's initial work, the model has been applied in a number of settings. Of particular interest in this paper is the work of Vilkinas and Cartan (Vilkinas and Cartan, 2001; Vilkinas and Cartan, 2006), who modified the CVF as well as including an additional role, the Integrator. Vilkinas and Cartan labelled this

modified version the Integrated Competing Values Framework (ICVF). They have used the modified framework to explain not only the behaviour of managers and executives but also that of program directors (Vilkinas, Leask and Rogers, 2007) and supervisors of doctoral students in universities (Vilkinas, 2007).

According to the findings of the study related to teacher leadership skills and the developmental degrees of these skills, Can (2007) expressed that teachers show classroom centered behaviors instead of school centered ones and other behaviors which are appreciated by the school administrators. Yet, according to the results of the same study the majority of the teachers do not show such skills as having occupational roles in instruction and being interested in educational researches. Teacher leadership behaviours requires undertaking roles in formal and informal educational activities and periods; forming independent projects; affecting the environment; nourishing his / her colleagues' improvement   and building confidence among them.

The purpose of the present study was to identify the leadership behaviours that are associated with effectiveness for Turkish teachers. None of the earlier research has investigated the application of the ICVF to teachers' leadership behaviours in accordance with the literature. In addition to identifying the predictors of effectiveness, the researchers were also interested in determining if there were gender differences.

The Integrated Competing Values Framework (ICVF)

At the heart of the ICVF is the observation that there are two key dimensions to effective management: a people-task dimension and an external-internal focus dimension (Vilkinas and Cartan, 2006). This model is a development of an earlier framework by Quinn and his colleagues (Quinn and Rohrbaugh, 1983; Quinn, 1984; Quinn, 1988; Quinn et al., 2003). The model uses these two dimensions to create a four quadrant model (Figure 1).
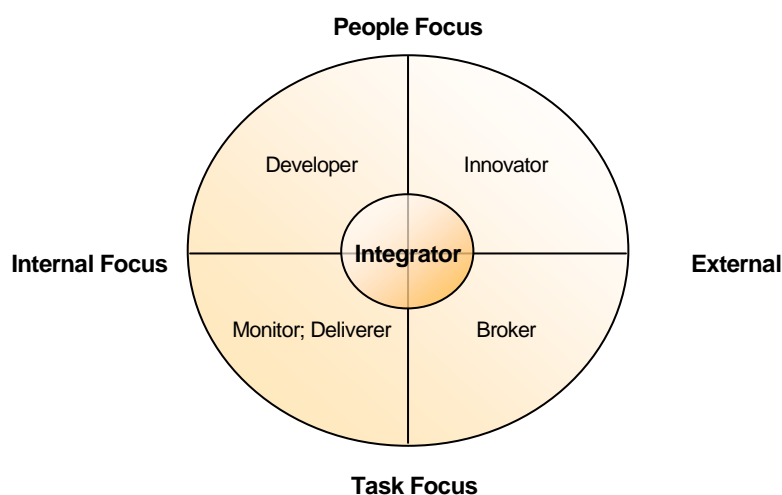
Figure 1. *Integrated Competing Values Framework*

Reference: Vilkinas, T and Cartan, G. (2001). The behavioural control room for managers: The integrator role. *Leadership and Organisation Development Journal,* 22(4), 175-185. Vilkinas, T and Cartan, G. (2006). The integrated competing values framework: Its spatial configuration. *Journal of Management Development,* 25(6), 505-521.

Within the quadrants, Vilkinas and Cartan (2001, 2006) locate five operational roles for academic coordinators: Innovator, Broker, Deliverer, Monitor and Developer. A brief description of the behaviours associated with each of these roles is provided in Table 1.

Under the ICVF model, the five operational roles are paradoxical in nature (Vilkinas and Cartan, 2001; Vilkinas and Cartan, 2006); that is, the role of the manager exhibits inherent and necessary dichotomies which lead to tensions and potential conflict for the individual (Robertson, 2005). That is, managers need to deliver a range of activities that are inherently contradictory: caring for the individual and dealing with their personal issues (Developer role) whilst at the same time demanding that the individual completes their assignments (Deliverer role); finding the balance between liberty and regulation and autonomy and restraint (Johnson, Lee and Green, 2000); and finding the balance between creativity and criticism (Fraser and Mathews, 1999). The role of the manager is undoubtedly complex. As Robertson (2005) argued, individuals need to be able to integrate these paradoxical behaviours so that they are not disabled by the role's conflicting demands. Managers also need to integrate these paradoxical behaviours productively (Robertson, 2005). They need to experience generative paradoxes instead of exhausting conflicts if they are to be effective managers.

Table 1. *Description of each of the ICVF's five operational roles*

Role	Managerial application*
Innovator	–Is creative
	– Encourages, envisions and facilitates change
Broker	–Develops, scans and maintains networks
	– Acquires needed resources
Deliver	–Is work focussed
	–Motivates behaviour
	–Sets goals
	–Clarifies roles
	– Does scheduling, coordination and problem-solving
Monitor	–Sees that rules and standards are met
	–Collects and distributes information
	–Checks on performance
Developer	–Is aware of individual needs and facilitates development
	–Develops teams

Some managers may avoid the difficulty of dealing with paradoxical demands confronting them by focusing on a single role. Conversely, as Robertson (2005) has argued, they may allow two roles to co-exist and take turns using them, a compartmentalised paradoxical approach. However, this can reduce their effectiveness, as different situations require different approaches. For example, there is no point being a task master (Deliverer) if the staff member has a major emotional issue; the Developer is required. It has been noted by Robertson (2005) that not all individuals are capable of holding 'two opposed ideas in the mind' (p. 182). That is, they are not capable of using a generative paradoxical approach where the operational roles are integrated by the manager in a 'mutually productive, synergizing way (p.188)' (Robertson, 2005). There is a sixth role under the ICVF, the Integrator. This role has previously been described as the behavioural control room for the other five operational roles (Vilkinas and Cartan, 2001). The Integrator role has two parts: critical observer and reflective learner. The purpose of the former is to decipher which of the operational roles is required at any particular time in response to any environmental stimuli. In this way it assists in initiating the appropriate execution of the chosen role. It ensures a 'fit' between context and behaviour (Vilkinas and Cartan, 2001).

The purpose of the second part, the 'reflective learner', is to reflect on past and current usage of the operational roles and to learn from those experiences. Rogers (2001) reports that the most common definition of reflection was one that allowed individuals to 'integrate the understanding gained into one's experience in order to enable better choices or action in the future as well as enhance one's overall effectiveness' (p. 41). Booth and Anderberg (2005) argue that reflection underpins an individual's development. When reflective, the manager demonstrates a heightened and more accurate self-awareness. This introspection and self-awareness provide a manager with opportunities to learn from previous experiences and to inform future behaviours. They need to be able to critically assess their own performance, reflect on their assessment and learn from it (Ash and Clayton, 2004), thus constantly improving their leadership capability. This process is similar to the action learning cycle (Kolb, 1984)] and is consistent with the work of Argyris and Schon (1996). That is, a well developed Integrator will enable the behavioural complexity required of managers to deliver on the competing demands they face. Behavioural complexity is the ability to move between the five roles with ease and deliver any of the five roles depending on which is most appropriate (Hooijberg, Bullis and Hunt, 2004; Hooijberg and Quinn, 1992; Hooijberg, 1992; Denison, Hooijberg and Quinn, 1995).

The Integrator is the linchpin that allows managers to move easily between the five operational roles (Vilkinas and Cartan, 2001). As Robertson (2005) argued, using 'harmony, synergy and integration' (p. 482) can mean that managers are able to deal with the contradictory demands as a generative paradox rather than suffer paralysing conflict. That is, managers need to be able to 'productively integrate fundamental contradictions' in their role (Robertson, 2005). Ash and Clayton (2004) highlight the fact that such a reflection facilitates 'academic mastery, personal growth, civic engagement, critical thinking, and the meaningful demonstration of learning.' (p. 137) and is essential to the development of higher order thinking (Fisher, 2003). Vilkinas and Cartan (2001) had 100 middle managers participate in a 360-degree feedback program that sought responses from 530 of their significant others. The results indicated that the Integrator was a pivotal role for managers. Those managers with a stronger Integrator displayed each of the ICVF's roles more and were more effective than were those with a weaker Integrator. This role was also found to be a strong predictor of effectiveness. Previously, (Vilkinas, 2006), in her study of 509 managers, 127 of whom were females, had reported that when the gender of the managers and that of their significant others (staff, peers and boss) were taken into account there was no significant difference reported in the extent to which the pivotal operational roles were displayed or in the effectiveness level of male and female managers. The results of this study indicate that the gender of the

manager does not impact on how they were perceived by their significant others. Rather, it was how effective they were as managers that determined their significant others' perceptions.

Applications of the ICVF

The CVF, upon which the ICVF was based, has been used to describe several organisational phenomena: organisational commitment (Quinn and Spreitzer, 1991), CEO (Chief Executive Officer) leadership (Hart and Quinn,1993; Wyse and Vilkinas, 2004), human resource management (Parker and Bradley, 2000), military leadership (Hooijberg, Bullis, and Hunt, 2004), organisational culture (Harris and Mossholder, 1996; Howard, 1998; Parker and Bradley, 2000; Lamond, 2003) and leadership of orchestras (Hunt, Stelluta and Hooijberg, 2004).

In addition to the research undertaken with managers and executives (Vilkinas and Cartan, 2001, 2008; Wyse and Vilkinas, 2004), the model has been used to explain the behaviour of supervisors of doctoral students within universities. Vilkinas (2008) reported that when supervising their research students, academics were unable to deliver all of the roles identified as part of the ICVF. That is, they did not display the behavioural complexity which is needed if they were not to be effective in such a role, nor did they critically observe or reflect on their behaviour. In another study, the ICVF was used to explain the behaviour of program directors. This study used a 360-degree developmental interview process (Vilkinas, Leask and Rogers, 2007). Program directors, their Heads and Deputy Heads of School, teaching and support staff and other senior administrative staff were interviewed.

The application of the ICVF and its predecessor, the CVF, in both organisational and university settings suggests that it might also have application to the leadership behaviour of teachers in the classroom. The work of the Cheng (1994) and Luechauer and Shulman (2002) provide further support for the application of leadership theories such as the ICVF to explain leadership behaviours in the classroom. In addition, the transformational leadership literature has been applied by Pounder (2006). He posits that teachers need to display transformational leadership behaviours to be effective. That is, they need to display behaviours associated with the Innovator and Developer under the ICVF. Davies and Coates (2005) use the ICVF's predecessor, the CVF, to explain leadership behaviours in schools. Some of the previous research on teachers' leadership behaviours found that teachers do display some of the operational roles identified under the ICVF. For instance, Harvey and Beauchamp (2005) reported that music teachers are innovative and visionary (Innovator) and collaborative (Developer). Support for the use of the Integrator by teachers has also been reported. There has been a sparsely of research

investigating the leadership behaviours of teachers in the classroom. The only study has been that of Telli, den Brok and Cakiroglu (2007), who examined the interpersonal skills (Developer) of teachers' leadership behaviours in the classroom. They emphasise the importance of teacher-student relationships and note that, in the main, teachers are very cooperative and only moderately dominant. Given the support for the application of leadership theories to the leadership behaviours of teachers in the classroom, the ICVF was adopted in this study to explain such behaviours.

Purpose of the research

The purpose of this study was to use the ICVF to explain the leadership behaviour of Turkish secondary school teachers. In particular, the study was interested in determining:

- which leadership behaviours the teachers displayed

- how effective teachers were as leaders in the classroom

- which leadership behaviours were predictors of effectiveness

- If there were any gender differences.

METHOD

Participants

Aydin Province is located in upper rows in terms of the students' success in higher education placement exams. According to the results of 2009 SSPE / OSYS (Student Selection and Placement Exam), Aydin Province takes the first row in rankings in Turkey. In addition, Aydin also takes the first row with its 15.583 students getting 143 points or more in the university entrance exam, catching a success which can be expressed as a percent of 94.88. There is no doubt that the secondary school teachers played an important role in this éclat. It is because of this fact that the secondary school teachers who work in the boundaries of Aydin Province were preferred in the frame of this study. This study was composed of 300 secondary school teachers who worked in the boundaries of Aydin province. The number and demographic features of the secondary school teachers participated in the research can be seen Table 2.

Table 2. *Demographic characteristics of teachers*

		N	%			N	%
Gender	Female	128	42,7	Branch	Social sciences	124	41.3
	Men	172	57,3		Applied sciences	59	19.7
School type	General secondary school	126	42,0		Mathematics	40	13.3
	Anatolia secondary school	49	16,3		Foreign languages	43	14.3
	Vocational secondary school	14	4,7		Fine arts	34	11.3
	Fine arts secondary school	27	9,0	Seniority	1-5 years	26	8.7
	Science secondary school	19	6,3		6-10 years	73	24.3
	Multiple program secondary school	51	17,0		11-15 years	87	29.0
	Social science secondary program	14	4,7		16-20 years	58	19.3
					21-25 years	56	18.7

Of the 300 participants in the study, 172 (57.3%) were male, with an average age of 42.7 years. The average age for women was significantly younger at 30.6 years. The majority of participants (42%) worked in a general high school, with the remainder working in a range of different vocational high schools. The disciplines in which they worked covered social sciences (41.3%), science (19.7%), mathematics (14%), foreign languages (13.7%) and art sciences (11.3%). Twenty-nine percent of them had been in their current job for 11 to 15 years, with 24.3% having been there for six to 10 years, 19.3% for 16 to 20 years and 18.7% being there for 21 to 25 years. Only 8.7% had been there for

five years or less. In the main, men had been in their job for an average of 13 years, while the average for women was 10 years.

The Development of Integrated Competing Values Framework's Questionnaire

The Process of Translation

The original version of the Integrated Competing Values Framework (ICVF) was first translated from English into Turkish and then translated from Turkish into English. Bilingual committee approaches were used as a way of improving direct translation, three bilingual psychologists and three education scientists were contacted and requested to review the translations. The experts were first requested to examine and evaluate the initial translation independently. An effort was made to translate the feeling connotations of the items rather than literal meaning of the original words (Brislin, 1980). This work subsequently discussed with them in committee approach, smaller modifications were used.

Questionnaire

The questionnaire administered to the teachers measured the six operational roles using scales developed by Vilkinas and Cartan (2001, 2006) and based on the original work of Quinn et al. (2003) and Denison *et al*. (1995) original work (see Appendix A). Vilkinas and Cartan (2001) used these scales in the study of 100 managers discussed earlier. They reported that the measures for each of the six roles are separate. Each scale for the operational roles presented two or more descriptive phrases that could be used to describe the effectiveness of a manager in a certain role. In the role of Innovator, for example, responses were sought to the phrases, 'Comes up with inventive ideas', and, 'Experiments with new concepts and ideas'. Responses were recorded on a seven-point Likert scale ranging from 1, anchored by almost never, to 7, anchored by almost always. Mean scores were used for each of the six operational roles for their realized degrees. The scores for the items associated with for each role were summed and divided by the number of items to give the mean score for that role. A similar measure for the Integrator role was developed by Vilkinas and Cartan (2001). The Integrator scale offered six items for the respondents to consider (see Appendix A). Responses were recorded on the same seven-point Likert scale as used for the five operational roles. For the Integrator role, responses to the six items were averaged to calculate the mean score for that role. For the effectiveness measure (see Appendix B), responses from the manager were summed for the five items and divided by five to produce a mean score.

Reliability and Validity

Due to time constraints, validity and reliability studies of scales had to be made on real data. Reliability analysis was evaluated by Cronbach's alpha coefficient for internal consistency. Internal consistency reliabilities of the innovator, broker, monitor, developer, deliverer and integrator factors were .833, .831, .778, .902, .907 and .885 respectively. According to these results factors showed satisfactory internal consistency reliability. The validity of the scale was examined by using exploratory factor analysis (EFA). The results of the EFA showed that factors explained 82 percent of the total variance. KMO (.97) and Bartlett test (5241.530) results were found to be adequate. The validity of the scale was tested with confirmatory factor analysis and factors of the scale were confirmed. Compatibility indexes were found as $\chi2$= 18.23 (df= 9, p=0.032), GFI=0.98 and AGFI=0.95, RMSEA = .059. These results show that the data are appropriate to be used with six-factor model (Hair, et al., 1998). The means, standard deviations and alpha coefficients for each scale are shown in Table 3. These descriptive statistics illustrate that the alpha coefficients for each of the roles are quite acceptable (Streiner, 2003).

Table 3. *Display role means, standard deviations and reliabilities*

Display Role	Mean	Standard deviation	Alpha
Innovator	5.230	1.453	0.833
Broker	5.303	1.439	0.831
Monitor	5.217	1.396	0.778
Developer	5.269	1.583	0.902
Deliverer	5.376	1.370	0.907
Integrator	5.145	1.294	0.885
Effectiveness*	3.910	0.880	0.937

*Effectiveness was measured on a five-point scale, while the ICVF roles were measured on a seven-point scale.

Data Analysis

SSPS 13.00 (a statics package program for social sciences) was used to analyze the data. When comparing the mean of two groups to test whether there was a meaningful difference or not, t-test was used and when comparing the mean of more than two groups, one-way variance analysis was used. A standard multiple regression was performed on the roles to determine predictors of

teacher leadership effectiveness. This was followed by a stepwise forward regression analysis.

RESULTS

The repeated measures ANOVA found only one significant result, which was for the within-subject factor roles. There was no significant main effect gender or any significant interaction effects. The Wilks' Lambda for Roles was 0.894 [$F_{(5,294)}$ = 6.940, p < .000]. The only significant difference among the operational roles was that the Deliverer was displayed significantly more than the Monitor (Figure 2). There were two significant differences between the Integrator and the operational roles. The Integrator was displayed significantly less than both the Deliverer and Broker.
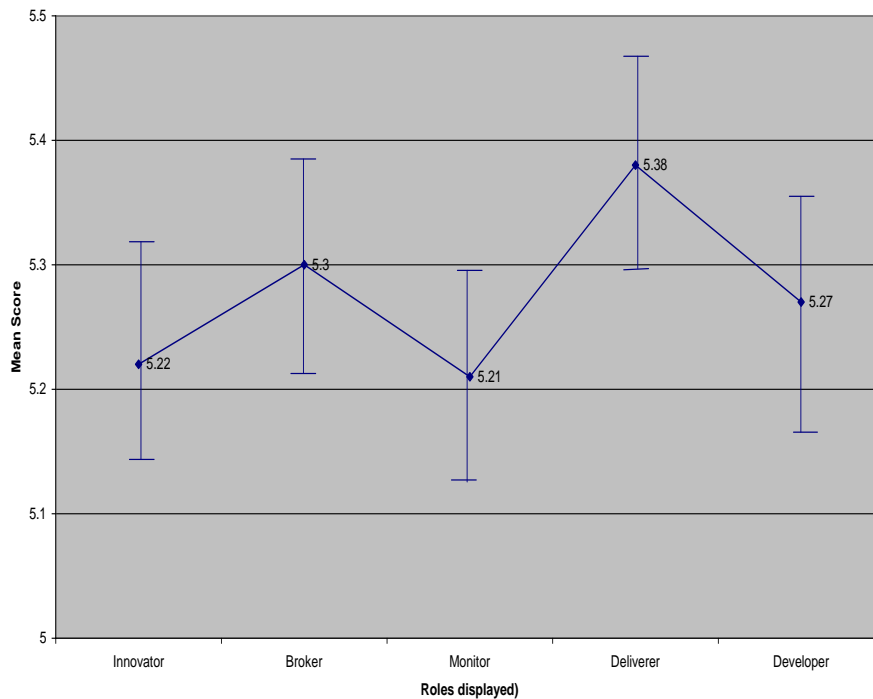

Figure 2. *The significant effects shown graphically*

A standard multiple regressions performed on the roles displayed that only three of the roles, Broker, Deliverer and Developer, predicted effectiveness (Table 4).

Table 4. *Display standard multiple regression*

Variable	Beta	R-square	T(df = 293)	p-level
Innovator	-0.009	0.721	-0.014	0.890
Broker	0.229	0.775	3.090	0.002
Monitor	-0.078	0.758	-1.100	0.273
Deliverer	0.314	0.844	3.540	0.000
Developer	0.284	0.743	4.100	0.000
Integrator	0.155	0.726	1.720	0.086
Dependent variable: Effectiveness				

A subsequent stepwise forward regression showed that the Deliverer was the strongest predictor [$F_{(1,298)} = 421.6$, $p < .000$], accounting for 58.6 % of the variance in effectiveness (Table 5).

Table 5. *Display stepwise multiple regression*

Variable	Multiple R	Multiple R-square	R-square change	F value	P level	DF
Deliverer	0.765	0.586	0.586	421.6	0.000	(1,298)
Developer	0.788	0.621	0.035	27.4	0.000	(2,297)
Broker	0.797	0.636	0.015	12.3	0.001	(3,296)

DISCUSSION and CONCLUSION

According to the results, the teachers in the current study used all five operational roles in the classroom in different degrees for their students. The only significant difference was between the Deliverer and the Monitor roles. It can therefore be assumed that, because the teachers used all five roles, they were able to move between these roles, displaying behavioural complexity. It has been showing earlier research (Hooijberg, Bullis and Hunt, 2004; Hooijberg and Quinn, 1992; Hooijberg, 1992; Denison, Hooijberg and Quinn, 1995) that managers who display behavioural complexity are effective in their leadership role. The teachers' effectiveness scores were 3.91 on a seven-point scale, indicating that they were effective as leaders in the classroom. These findings for teachers are similar to those for managers in other studies.

As noted earlier, three roles – Deliverer, Developer and Broker – were identified as predictors of effectiveness for these teachers. Previously Vilkinas

and Cartan (2001) found the Integrator to be the strongest predictor of effectiveness. However, for Turkish teachers, there is no same situation. Robertson (2005) explains that if an individual is capable of operating in the domain of generative paradox they will gain insights through reflection about their behaviour that will enable them to learn and develop. Previous research (Begley, 2007; Branson, 2007; Muijs and Harris, 2004) with teachers has also stressed the importance of reflection if they are to develop their leadership capability in the classroom. Yet this group of teachers did not associate reflection with effectiveness. The reasons are not clear and need to be further researched. No gender difference in the roles displayed was found. These results support the earlier work of Vilkinas (2000) for managers.

The results indicated that the teachers displayed behavioural complexity in the classroom. That is, they delivered all five of the leadership roles. There were no gender differences. Three of these roles, Deliverer, Developer, and Broker were predictors of the effectiveness. However, while previous research indicated that the Integrator was the strongest predictor, this was not the case in this study; further research is needed to determine why this was so. The ICVF has been shown to explain the leadership behaviour of teachers in the classroom and has value for the development of their leadership capability.

The ICVF could be used by teachers to understand their approach to classroom leadership. They could learn to recognise which quadrant within the ICVF they currently operate in and decide on the appropriateness of that approach. They would need to use the Integrator to reflect on their classroom leadership behaviour. In addition, future training and development activities for teacher could involve 360^0 feedback processes alerting them to what leadership behaviours they currently display. Educators of teachers might also like to include a leadership framework such as the ICVF in their curriculum. Indication of the study's implications is not satisfactory. For instance, the effects of the study's results on teacher training policy, teacher training programs could be discussed. Besides, its effects on teacher training theories could be expressed.

IMPLICATIONS

The ICVF could be used by teachers to understand their approach to classroom leadership. They could learn to recognise which quadrant within the ICVF they currently operate in and decide on the appropriateness of that approach. They would need to use the Integrator to reflect on their classroom leadership behaviour.

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Appendix A

Questionnaire items by role *

1	2	3	4	5	6	7
Almost never	very seldom	Seldom	Occasionally	frequently	Very frequently	almost always

The Innovator Role

Comes up with inventive ideas

Experiments with new concepts and ideas

The Broker Role

Exerts upward influence in the organisation

Influence decisions made at high levels

The Deliverer Role

Gets the unit to meet expected goals

Sees the unit delivers on stated goals

Clarifies the unit's priorities and directions

Anticipates workflow problems, avoids crisis

The Monitor Role

Maintains tight logistical control

Compares records, reports, and so on to detect discrepancies

The Developer Role

Encourages participative decision making in the group

Treats each individual in a sensitive, caring way

Shows empathy and concern in dealing with subordinates

The Integrator Role

Learn after reflecting on your past behaviours as a manager?

Change your behaviour after reflection?

Respond to others in an appropriate manner?

Accurately read the signals in your environment?

Use a range of responses to different situations?

Focus on the most important signals in your environment?

Appendix B

Effectiveness Items *

In this section we would like to know your overall assessment of yourself/the person as a manager. In answering the following questions, please circle the appropriate number.

1.Meeting of managerial performance standards:

Below most standards   1   2   3 4 5 Above most standards

2. Comparison to person's managerial peers:

Worse manager than peers   1   2 3 4 5 Better manager than peers

3.Performance as a role model

Poor role model   1   2   3   4 5   Excellent role model

4.Overall managerial success

A managerial failure   1   2   3 4 5 A managerial success

5.Overall effectiveness as a manager

Ineffective manager   1   2 3   4 5   Effective manager