

*Full Length Research Paper*

# **Multi dimensional organizational intelligence measurements for determining the institutional and managerial capacity of girls' technical education institution (Diyarbakir, Şanlıurfa and Konya/Turkey)**

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**This study aims to measure the level of the organizational intelligence of the Technical Education Institutions for Girls in Diyarbakir, Şanlıurfa and Konya in Turkey. These provinces are studied with the demand of Girls Technical Education Institutions because of the heterogeneous structure they have about organizational intelligence perceptions, in terms of geographical extent, social, economic and cultural dimensions. In this study, "Multi-dimensional organizational intelligence scale" that re-adapted for technical education institutions by Erçetin and Potas was used. In conclusion, perceptions about general organizational intelligence level are intensified in "middle level" choice. Also these perceptions about organizational intelligence do not vary in general according to regions and districts; while they vary between teachers and managers.**

**Key words:** Organizational intelligence, dimensions of organizational intelligence, educational institutions, multidimensionality.

## **INTRODUCTION**

All over the world in all business areas are experiencing rapid growth and development, and these developments are generating new needs. Technological improvements, necessity of constant update of knowledge, increasing knowledge share stem from communication among people cause to change the quality of labor demanded in each sector. In our era, "possessing properties appropriate with the requirements of age, being open to continuous improvement and change, being good at national and international expectations about the job they are working" are the things what is demanded from people. In this sense, fulfilling the requirements of being an intelligent organization is really important for reaching the aims of Girls Technical Education Institutions that grow up labor for several sectors. In this study,

research data collected from the schools managers and vocational lesson teachers. Because of the support supplied during the research, we thank to General Director Emine KIRAÇ of Turkey General Directorate of Technical Education for Girls and expert teacher Fatma Çiçekçi.

## **Problem statement**

Turkish Republic, Girls Technical Education Institutions' and the dependent schools' fulfillment their tasks and responsibilities effectively is a really important topic for our country. Waited things about these duties and responsibilities from the schools dependent to Girls Technical Education Institutions are as follow;

- Creating a harmony between labor demand and manpower both quantitative and qualitative.
- Serving the needed qualified education for improving

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the participation of women to labor and contribution to country economy,

- Growing all individuals in a way appropriate with the necessities of our era and easily adapting to the changes and technology.

The effectiveness of these institutions about fulfilling these duties and responsibilities can be possible by using the skills about organizational intelligence. Reason of this is the requirement of performing different powers of organizations stem from the changing and improvements. The power and the success of the organizations can be measured by their usage of these skills or not.

Studies done by Erçetin (2000) that focus to the terms "intelligence and organizational intelligence", emphasize on the necessity of investigating the intelligence term with different dimensions. Intelligence is described and analyzed by handling with different metaphors. Intelligence is explained with "geographical, cognitive, biological, epistemology, anthropological, sociological and system" metaphors. System metaphor is really important because it evaluates intelligence in terms of so many systems complicated interactions (Erçetin, 2001a). Erçetin and Düzer, who describe intelligence with a different point of view associated intelligence with states of matter; they depicted solid matter as "vegetative and animal intelligence", liquid matter as "humanistic intelligence"; and gas matter as "chaotic intelligence" (Erçetin and Düzer, 2009d).

All studies about "intelligence" not only one definition is investigated, too many different description improved with different point of views are investigated and new definitions created. It is suggested that intelligence has different definitions in all fields, so it should not be thought only cognitive meaning (Erçetin, 2001a; 2005). All intelligence theories in literature investigated and a new theory is added. "Peace Intelligence" is described as a new type of intelligence in ICENAS in 2007 by Erçetin is the water of life for organizational intelligence (Erçetin et al., 2009c).

Erçetin (2000; 2001a; 2009a) in the studies that she has done describes the organizational intelligence as "using the potential about 'making quick and right decisions against the sudden and unexpected situations that happen in the system changes and improves; adapting to these changes; trying to learn permanently, using creativity and showing different skills." In this sense, we can say that the organizations that can use the organizational intelligence successfully are the ones that "use the human resources best, create rational plans to reach the aims, exist the hidden potential and use it and think the organization in system integrity and contribute to its development" (Erçetin, 2000; 2001a).

Gonyea ve Kuh (2009) explained three important dimensions of organizational intelligence. These three dimensions are expressed as "technical and analytical intelligence"; intelligence of understanding based and procedural problems and "context intelligence". Another

important dimension about organizational intelligence is social networks in organizations. It is stressed that the level of organizations being more innovative, collaborative and effective change as dependent to social networks in organizations (Erçetin et al., 2009e). Other things that emphasized for increasing the level of organizational intelligence are creating a common consciousness and the term called "organizational learning" (Templeton et al., 2002; Bradbery, 2007). Organizational learning is also handled as a term that helps to create "organizational consciousness" (Walters, 2008).

Addition to the term "organizational intelligence", "organizational stupidity" is also investigated and the behaviors that block the activation the skills about the organizational intelligence (Erçetin, 2001b, 2005). Kerfoot (2003) also argued the organizations that can't reach information and can't share the knowledge with the term "organizational stupidity".

In the studies done by Erçetin (2004) new description and new point of views are developed about "organizational intelligence" and the skills that help to show organizations behaving in an intelligent way "Operational Dimensions of Organizational Intelligence" are defined. "Multi Dimensional Organizational Intelligence Scale" is composed by based on those dimensions. In the scale different skills that described about organizational intelligence' different operational dimensions are investigated (Erçetin, 2001a; 2004a; 2004b; 2005; 2009a; Erçetin et al., 2007). This scale is adapted to different institutions (universities, public and private schools) for describing the organizational intelligence perceptions for determining the institutional and managerial capacity of organizations and applied to different organizations (Erçetin, 2004a, b, c; Erçetin et al., 2007; Potas et al., 2009b). With these researches level of organizations' about their organizational intelligence abilities are described and recommendations created for the removal of the missing parts. In literature we can see more studies about measuring the organizational intelligence e.g. empirical studies done by Staškevičiūt ve Čiutien (2008) in Universities is one of them.

Erçetin described the operational dimensions of organizational intelligence as "the promptness in action and reaction, adaptation to changing situations, being flexible and convenient in operation, being able to detect and being prudent, being able to use imagination, adaptation to changing situations II, effective communication with stakeholders" (Erçetin, 2009a). Each of these operational dimensions contains different skills. Also all skills that described are investigated in a way that they can be related.

In today's world only intelligent organizations can go on being alive; usage of managerial and institutional capacities-being an intelligent organization- found really important for organizations that would affect the future of our country like Girls Technical Education Institutions. That is why existing the perceptions about the level of the organizational intelligence of schools dependent to Girls

Technical Education Institutions and solving problems become a necessity.

### Purpose of the study

The thing that consist the aim of study is:

The perception of teachers' and managers' about the multi-dimensional organizational intelligence levels that describes the managerial and institutional capacities of schools dependent to Girls Technical Education Institutions in Diyarbakir, Şanlıurfa and Konya provinces, organizational intelligence';

- a. The promptness in action and reaction.
- b. Adaptation to changing situations.
- c. Being flexible and convenient in operation.
- d. Being able to detect and being prudent.
- e. Being able to use imagination.
- f. Adaptation to changing situations II.
- g. Effective communication with stakeholders, describing by investigating in terms of operational dimensions generates.

## METHODS

### Research model

Model of research is survey. In this research we investigated the perception level about the seven sub-dimension of organizational intelligence and in general whether there is a relationship or not, between organizational intelligence level and the regions, province or district that schools take place and task variables.

### Population and sample

The population of the study consists of Diyarbakir, Şanlıurfa and Konya provinces. These provinces are studied with the demand of Girls Technical Education Institutions because of the heterogeneous structure they have about organizational intelligence perceptions, in terms of geographical extent, social, economic and cultural dimensions.

Research data collected from the schools managers (principals and assistant principals) and vocational lesson teachers who work in the schools dependent to Girls Technical Education Institutions in Diyarbakir, Şanlıurfa and Konya.

Eighteen managers and thirty three teachers participated to the research that chosen from the schools dependent to Ministry of National Education, Girls Technical Education Institutions.

### Scale of organizational intelligence

The measurement tool that used in this study is "Multi-Dimensional Organizational Intelligence Scale". This scale is developed by Erçetin (2001; 2004) for the first time. Then it is revised by Erçetin et al. (2007). The adaptation of the scale to university level, from the education organizations is done by Potas et al. (2009). With the demand of National Education Ministry, General Directorate of Technical Education for Girls declared in the act with 29-09-2009 date and 83-3516 number; Erçetin and Potas (2009), re-adapted it

in the context of schools dependent to General Directorate of Technical Education for Girls by taking into consideration the purpose of project. In this scale organizational intelligence investigated in terms of these skills:

- a. The promptness in action and reaction.
- b. Adaptation to changing situations.
- c. Being flexible and convenient in operation.
- d. Being able to detect and being prudent.
- e. Being able to use imagination.
- f. Adaptation to changing situations II.
- g. Effective communication with stakeholders.

This scale is used for describing about the current situation of school managers' and teacher' perception level who work in schools dependent to General Directorate of Technical Education for Girls about the organizational intelligence and operational dimensions of organizational intelligence. At the same time "whether the perceptions about the organizational intelligence and operational dimensions of organizational intelligence level changes between teachers and managers; and regions and schools or not" is another thing that is determined. Scale also can facilitate making managerial evaluations based on these.

Alfa tests results about the reliability of the scale both about each dimension and in general can be seen in Table 1.

The coefficient of  $\alpha$  values of scale and its sub-dimensions show that we can see that reliability coefficients are in high levels.

### Data analysis and interpretation

Analysis of data done according to the order of sub-problems. For realizing the aim of first sub-problem "determining the level of school managers' and teachers' in their organizations both about seven sub-dimension and general" total points collected from each sub-dimension separately and general was divided to the number of question average points about each dimension and general organizational intelligence level were calculated to make it appropriate for five ratings. Average points in five rating scale for four range (5 - 1 = 4) and (4/5-0.80) according to range calculated organizational intelligence levels were determined. According to this:

- 1,00 - 1,80 point range (1) "very low level of organizational intelligence",
- 1,81 - 2,60 point range (2) "low level of organizational intelligence",
- 2,61 - 3,40 point range (3) "middle level of organizational intelligence",
- 3,41 - 4,20 point range (4) "high level of organizational intelligence",
- 4,21 - 5,00 point range (5) "very high level of organizational intelligence" are the levels described.

Then for finding the central tendencies about organizational intelligence mean ( $\bar{x}$ ) and for determining to spread of ideas standard deviations were calculated. Also to resolve the problems stem from the differences in measurement units and large size of observation values in comparison; including the mean, more informative and coefficients of relative changes that they are related series as the mean's percentage  $[V = (ss/\bar{X}) * 100]$  were calculated. And for understanding the agreement in comparisons, mean and standard deviations were investigated with coefficients of relative changes; and it is commented as the groups in which standard deviation values and coefficient of relative changes are lower have higher agreement and groups in which these values higher have lower agreement. About the level of organizational

**Table 1.** Coefficient values of  $\alpha$  about the “multi-dimensional organizational intelligence scale”.

Dimensions	Coefficient of $\alpha$
The promptness in action and reaction	0.93
Adaptation to changing situations	0.91
Being flexible and convenient in operation	0.91
Effective communication with stakeholders	0.95
Being able to detect and being prudent	0.96
Being able to use imagination	0.93
Adaptation to changing situations II	0.95
General organizational Intelligence	0.99

**Table 2.** Test of normal distribution.

Kolmogorov-Smirnov test	Organizational intelligence
N	763
Kolmogorov-Smirnov Z	1.67
P	0.00

intelligence in schools both sub-dimensions and generally frequency and percentages are calculated and the levels with the highest and striking percentage values are the things we emphasized on. Comments done according to this: “middle level of intelligence is acceptable; very low level will damage the organization and it can become a learning barrier. In other sub-problems of the study we aimed to test whether organizational intelligence level related with other variables or not. With this aim first of all we decided that test is going to be used in analysis can be parametric or non-parametric. For this, normality of ideas distribution is tested with the help of SPSS programme Kolmogorov-Smirnov test. Results of can be seen in Table 2.

According to test results in terms of organizational intelligence perceptions group' distribution is not normal ( $p < 0.05$ ) and for the analysis about the differences non-parametric techniques are used. In this terms, organizational intelligence level about its seven sub-dimensions and in general organizational intelligence level' relation with the provinces or regions that schools take place; task, gender, seniority, time they work at the school they are working now, education variables of workers is investigated with the help of SPSS programme and Pearson Relation Test. In the result of test p value is evaluated and in situations that p value is  $\leq 0.05$  relation is interpreted as “meaningful”.

## FINDINGS AND COMMENT

### Perceptions about the general organizational intelligence levels

The perceptions of the managers' and teachers' about the level of the organizational intelligence who work in Diyarbakir, Şanlıurfa and Konya provinces are presented generally and in terms of different dimensions.

According to Table 3, the perception percents of the managers and teachers about the level of the organizational intelligence who work in Diyarbakir, Şanlıurfa and Konya provinces intensify on “very low, low and middle” levels.

The perceptions about the level of organizational intelligence in

these provinces are described as follows:

- Participants from Şanlıurfa have perceptions 34% as “very low and low”; 33% as “middle”; 33% as “very high and high”.
- Participants from Diyarbakir have perceptions 38% as “very low and low”; 37% as “middle”; 25% as “very high and high”.
- Participants from Konya have perceptions 50% as “very low and low”; 20% as “middle”; 30% as “very high and high”.

In Graphic 1 the perceptions of the managers' and teachers' about the organizational intelligence level who work in Diyarbakir, Şanlıurfa and Konya provinces take place. The most perceptions in “very low and low level” can be seen in Konya, in Şanlıurfa perceptions about three of levels almost equal. In Diyarbakir perceptions “very low and low” level are high, while the perceptions “very high and high” level of perceptions are the fewest.

### Investigating the dimensions of organizational intelligence

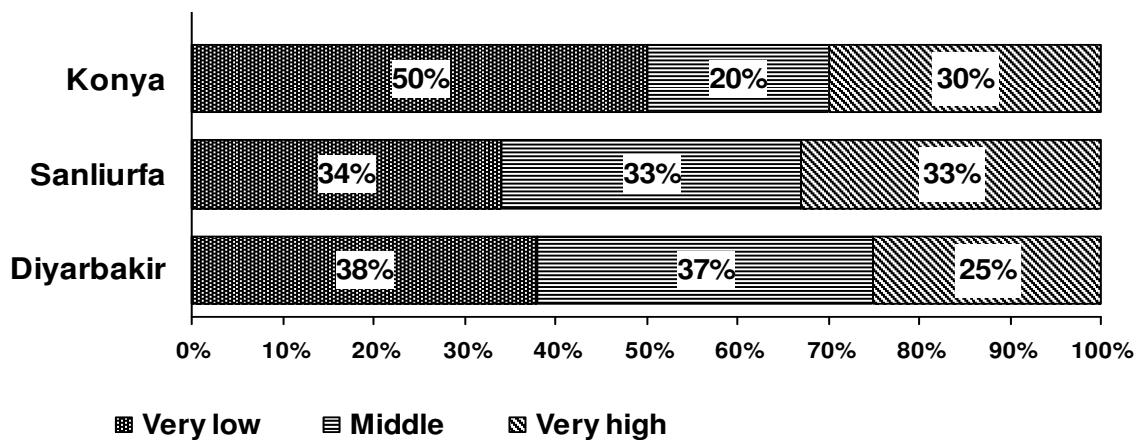
We can see in graphics below, the perceptions of teachers and managers about each level who work in provinces Diyarbakir, Şanlıurfa and Konya that has chosen because of their heterogeneous structure, in terms of geographical extent, social, economic and cultural dimensions and researched with the demand of Girls Technical Education Institutions.

According to Graphic 2, we can sat that: school managers and teachers have “middle” level (2.61 – 3.40 point range) of perception about all operational dimensions of organizational intelligence except “being able to detect and being prudent” dimension in Şanlıurfa. Graphic shows that participants have “high” level of perceptions (3.41 - 4.20 point range) about “being able to detect and being prudent” dimension. Teachers and managers have equal level of perception (3 points) about all dimensions except “being able to use imagination” dimension (3.3 points) in Şanlıurfa.

According to Graphic 3, we can say that: school managers and teachers in Diyarbakir have “middle” level (2.61 - 3.40 point range) of perception about all operational dimensions of organizational intelligence. When we compare all the dimensions we can see that

**Table 3.** The perceptions of the managers' and teachers' about the level of the organizational intelligence who work in Diyarbakir, Şanlıurfa and Konya.

Provinces		Very low	Low	Middle	High	Very high	Total
Diyarbakir	N	1	2	3	1	1	8
	%	12.50	25.00	37.50	12.50	12.50	100
Konya	N	10	10	8	6	6	40
	%	25.00	25.00	20.00	15.00	15.00	100
Şanlıurfa	N	1	0	1	0	1	3
	%	33.30	0.00	33.30	0.00	33.30	100
Total	N	12	12	12	7	8	51
	%	23.5	23.5	23.5	13.7	15.6	100



**Graphic 1.** The distribution of the perceptions about the organizational intelligence level in “very low and low”, “middle”, “very high and high” levels in Diyarbakir, Şanlıurfa and Konya Provinces.

“being flexible and convenient in operation and being able to detect and being prudent” are the dimensions that participants have lower level of perceptions. In graphic we can see that highest perception is about the “adaptation to changing situations” dimension.

According to Garphic 4, these things can be said; school managers and teachers have “middle” level (2.61 - 3.40 point range) of perception about all operational dimensions of organizational intelligence except “the promptness in action and reaction” dimension in Konya. We can understand from the graphic that perceptions are intensifying at “low” level (1.81 - 2.60 point range) at “the promptness in action and reaction”. Addition to this the other thing gets attraction is the low perceptions about “being able to detect and being prudent” dimension.

## RESULTS AND SUGGESTIONS

According to the ideas of managers and teachers who work in Diyarbakir, Şanlıurfa and Konya; the perceptions about the organizational intelligence level of schools dependent to general directorate of technical education

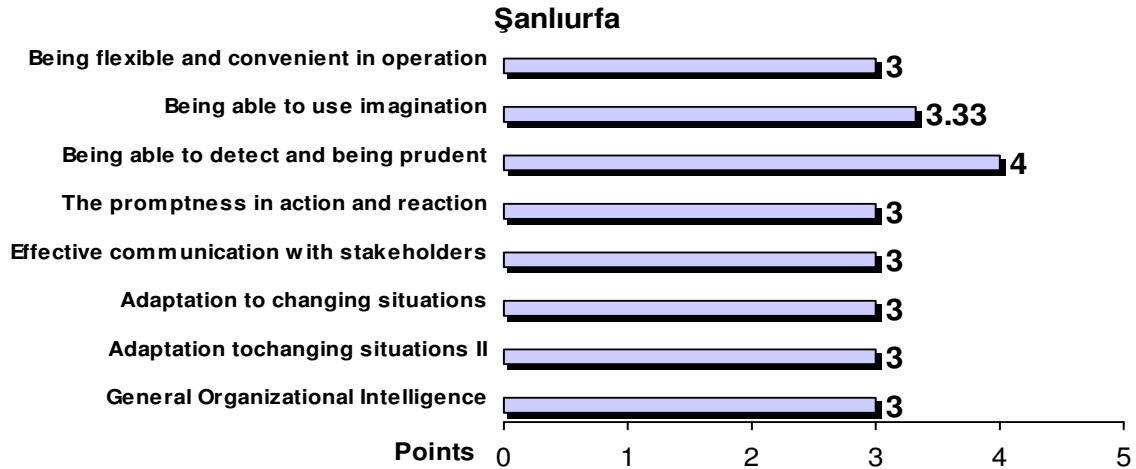
for girls show that organizational intelligence level is intensified in “middle level” choice.

Based on these findings in Table 4, the following recommendations can be made:

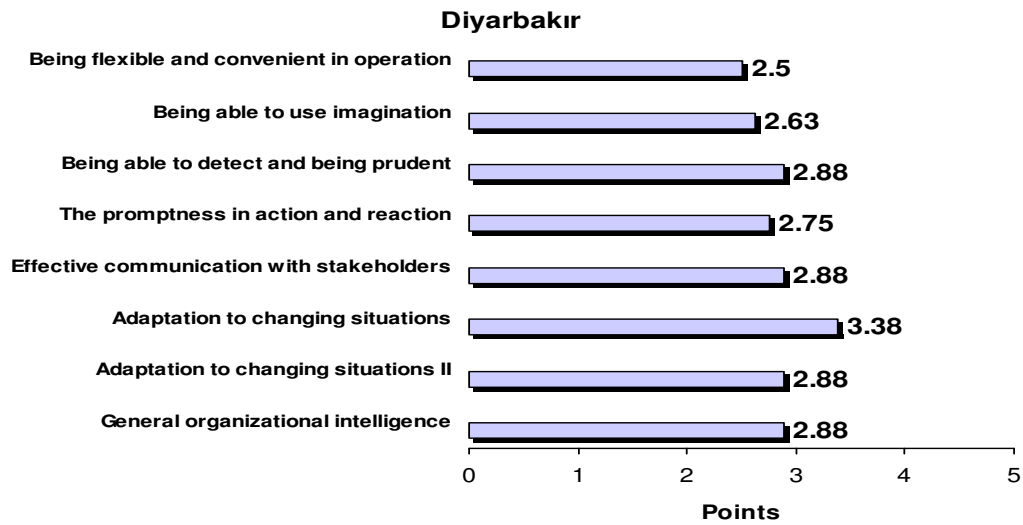
1). Educations can be provided to institutions about improving organizational intelligence and primarily the educations about the low perceived dimensions can be supplied. These topics for each province as follows;

- For Şanlıurfa: Time Management, Effective Implementation of Bureaucratic Processes in Institutions, Process Management, Leadership and Motivation, Change Management.

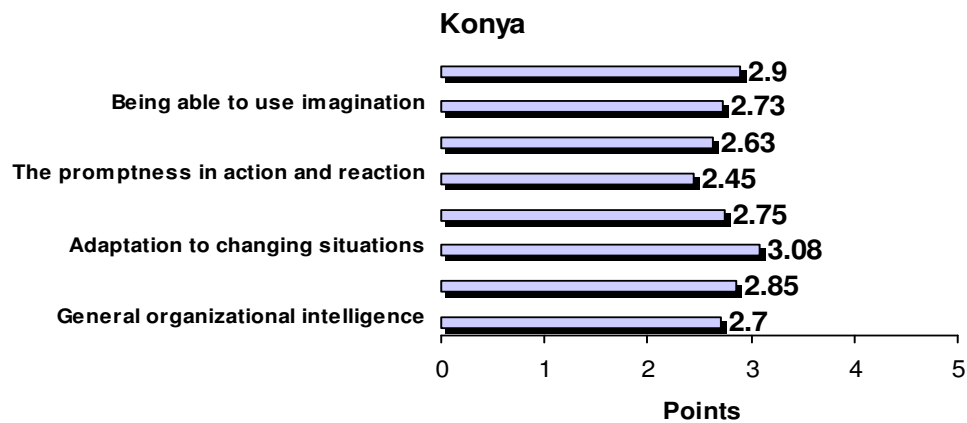
- For Diyarbakir: Leadership and Motivation, Effective Implementation of Bureaucratic Processes in Institutions, Improving the Process of Time Management and Making Decision, Development of Subordinate-Superior Relations.



**Graphic 2.** Operational dimensions of organizational intelligence for Şanlıurfa.



**Graphic 3.** Operational dimensions of organizational intelligence for Diyarbakır.



**Graphic 4.** Operational dimensions of organizational intelligence for Konya.

- For Konya: Leadership and Motivation, Effective Implementation of Bureaucratic Processes in Institutions, Process Management, Development of Subordinate-Superior Relations, Time Management.
- 2). Within certain limits some structural arrangements to remove institutional rigidities can be done in institution.
- 3). "By improving the organizational intelligence more efficient, reliable, satisfying organizational culture and work environment can be created" is the idea can be adopted by all workers.
- 4). Repeating this research in different provinces can be suggested.

## REFERENCES

- Bradbery P (2007). The learning organization: spiritual development and higher consciousness. *Int. J. Hum.* 5(3).
- Erçetin ŞŞ (2000). Organizational intelligence. *Educ. Admin. Theory Appl.* 24: 509-526.
- Erçetin ŞŞ (2001a). Organizational Intelligence. Ankara: Nobel Publishment.
- Erçetin ŞŞ (2001b). Organizational stupidity. *J. Soc Res. Turk.* 5, 1-3.
- Erçetin ŞŞ (2004a). The abilities related to the organizational intelligence and their action dimensions at schools. *Res. Educ. Reform.* 9(3).
- Erçetin ŞŞ (2004b). Organizational intelligence... operational dimensions... private schools... Symposium of Educational Administration in Private Schools-Association of Private Schools. 25-27 January 2004, Antalya.
- Erçetin ŞŞ (2004c). Operational dimensions of organizational intelligence in schools. *Gazi University, J. Turk. Educ. Sci.* 2(1): 1-10.
- Erçetin ŞŞ (2005). Organizational Intelligence and Stupidity. Ankara: Asil Publishment.
- Erçetin ŞŞ (2009a). Organizational Intelligence. ŞŞ Erçetin, (Ed.), Organizational Intelligence in Question. pp. 1-21. USA: Booksurge.
- Erçetin ŞŞ, Çayköylü A, Deniz O (2009c). Water of Life for Organizational Intelligence: Peace Intelligence as a New Type of Intelligence. ŞŞ Erçetin, (Ed.), Organizational Intelligence in Question. USA: Booksurge.
- Erçetin ŞŞ, Çetin B, Potas N (2007). Multi-dimensional organizational intelligence scale (muldimorins). *World Appl. Sci. J.* 2(3): 151-157.
- Erçetin ŞŞ, Düzer A (2009d). A New Metaphor to Analyze Organizational Intelligence: ŞŞ Erçetin, (Ed.), Organizational Intelligence in Question. USA: Booksurge.
- Erçetin ŞŞ, Hamedoğlu MA, Çelik S, Gündüz HB (2009e). Organizational Intelligence in Action Visible in Networks. ŞŞ Erçetin, (Ed.), Organizational Intelligence in Question. USA: Booksurge.
- Gonyea RM, Kuh GD (2009). NSSE organizational intelligence, and the institutional researher. *New Direction for Institutional Research No.* 141.
- Kerfoot K (2003). Organizational intelligence, organizational stupidity: the leader's challenge. *Nursing Econ.* 21(2).
- Potas N, Erçetin ŞŞ, Bayrakçeken S (2009b). Organizational Intelligence II. ŞŞ Erçetin, (Ed.), Organizational Intelligence in Question. USA: Booksurge.
- Staškevičiūtė I, Čiutienė R (2008). Processes of university organizational intelligence: empirical research. *Eng. Econ.* 5(60).
- Templeton GF, Lewis BR, Snyder CA (2002). Development of a measure for the organizational learning construct. *J. Manage. Inf.* 19(2): 175-218.
- Walters J (2008). Management methods building a common consciousness. *Electric Light and Power.* <http://ktogm.meb.gov.tr>. (Last Access: 29 April, 2010).

## **APPENDIX: FACTORS AND SAMPLE ITEMS FROM MULDIMORINS**

### **Factor 1: Adaptability to changing circumstances I,**

Sample items:

- Being empathetic in all the relationship within school.
- Guidance in case of crises.

### **Factor 2: Communication with the stakeholders**

Sample items:

- Sharing the extra course materials with other schools.
- Changing school schedule when needed.

### **Factor 3: Promptness in action and response**

Sample items:

- Setting up a school culture that is open to change.
- Transforming school into a learning organization.

### **Factor 4: Being intuitive and far-sighted**

Sample items:

- Estimating social needs.
- Designing physical setting in a flexible manner.

### **Factor 5: Being able to use the power of imagination and creativity**

Sample items:

- Encouraging the staff and students to produce creative solutions.
- Setting up a shared vision within school and sharing it.

### **Factor 6: Flexibility and comfort in operation**

Sample items:

- Taking successful school as an example.
- Policy-making as to education and instruction by the school administration.

### **Factor 7: Adaptability to changing circumstances II**

Sample items:

- Taking the support of the stakeholders.
- Following local and national press.