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Mental models of the school principals on "leadership"

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Abstract

Mental models are representations of the outside world in individuals' minds. These models represent how we perceive concepts. People's understandings and perceptions of leadership can be defined through the mental models they have developed. The aim of this study is to determine the mental models of the school principals on leadership. In order to collect data, a data collection tool developed by the researchers was used. The study group was asked four open-ended questions and also asked for drawing a picture of a leader and the followers. The study group of the research was 61 school principals who work in the cities of Bursa, Samsun, Trabzon and Istanbul and attend the graduate program in Educational Administration and Supervision department. As a result of the research, the study group expressed the leadership concept mostly "directing", "managing" and "affecting". Behavioral characteristics of the leader associated with the highest rated feature is "innovative", personality traits associated with the highest rated feature is "honesty", the skills associated with the highest rated skills is "communication skills" and physical properties associated with the highest rated feature is the "charismatic". The drawings related to the leader revealed that the principals perceive the leaders mostly male and the one who is positioned in front of his followers to lead them.

Keywords: mental models, leadership, school principals

Introduction

Interest in leadership and related research have noticeably increased over the past century. Leadership is regarded as a key for the survival, regeneration, and success of organizations which is reflected in the literature where we can come across numerous definitions of leadership. According to Senge (2000), leader is a person who is at the forefront. Leaders are able to radically change themselves and apply those changes to their organizations. Eren (2001) describes a leader as "a person who influences his or her followers and motivate them in line with their organization's goals." The common point of all those descriptions is that they emphasize the influencing and

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motivating aspects of leadership and concentrate on the fact that a leader cannot be considered a person isolated from his or her followers.

While different definitions of leadership have common elements, we may come across different leadership expectations if it is analyzed from the social perspective. Leadership may vary culturally and over time. Some cultures want leaders who look down on society and expect respect whereas some other cultures desire modest leaders who are a part of their community (Steer, Sanches & Nardon, 2012; Bass and Bass, 2008). Considering that individuals and their followers are different from each other, expectations and perceptions of a leader also vary. With different perceptions of leadership, people entertain some thoughts about how leadership should be. Such thoughts create a leadership model on a person's mind and he or she compares any person against that model and categorizes him or her as a leader or not (Offermann, John, & Philip 1994: 44). Mental models that people develop permit them to understand and assign a meaning to leadership and a leader just like everything else occurring in their surroundings.

The concept of a mental model was first used by Kenneth Craik in his book entitled *The Nature of Explanation* in 1943 (Badke-Schaub, Neumann, Lauche & Mohammed 2007). Mental models are inner notations that individuals create in order to understand the external world (Greca ve Moreira, 2000). We think and act through our mental models. Those models later constitute a basis for our perceptions, analyses, understanding, and actions (Johnson, 2008). People create a small-scale model of facts through mental models (Craik, 1943; cited by Badke-Schaub, 2007). Mental models, which we create in order to interpret our experiences and to make different phenomena more meaningful, are regarded as absolute truths in spite of the fact that it has been created by our senses rather than being facts.

According to Brewer (1987:189), mental models are special information structures which are organized in order to represent a situation by using general information. Coll (2001) says that mental models are used for deriving simpler forms of concepts and to explain scientific phenomena. According to Jansoon, Coll, & Somsook (2009), mental models mental models show phenomena on an individual's mind so that they can be explained and described. Mental models can be categorized as physical and notional. Physical mental models represent the physical world whereas notional mental models represent more abstract situations (Johnson-Laird, 1983, cited by: Jo, 2012). A look at the relevant fields of study indicates that they mostly focus on mental models intended to understand the physical world. Studies about mental models related to leadership in the field of education management are very scarce. The only study was conducted by Ruff & Shoho (2005) in the United States. This qualitative study focused on the mental models of the principals of three primary schools and emphasized that the mental models demonstrated were different from each other. There are some key characteristics shared by mental models. They (McDaniel, 2003): 1) Contain what people believe to be true, not what is actually true; 2) Are similar to the object or notion they represent in terms of their structures; 3) Allow people to predict the consequences of their actions; 4) Are simpler than what is represented by the objects or notions. They only contain sufficient information.

Mental models affect what an individual see, react, and interpret information. These models are road maps allowing an individual to navigate in an environment that he or she perceives and observes. These road maps emphasize certain elements and pieces of information in an environment while others exclude them (Mathieu Heffner, Goodwin, Cannon-Bowers & Cannon-Bowers, 2000). Mental models serve three key objectives: they help individuals to describe, explain, and predict events in their surroundings (Klimoski and Mohammed, 1994; Mathieu et al, 2000).

The mental model of a person may be incomplete in many ways. It may even contain contradictory, unnecessary, and faulty notions (Werhane et al, 2011; Greca and Moreira, 2000; Norman, 1983). Mental models can be modified, expanded, and improved if desired as they are not inherent in our genes and have not become rigid because of past experience (Werhane et al, 2011; Greca and Moreira, 2000; Badke-Schaub, 2007). Thus, mental models can be regarded as dynamic mental structures. According to Senge (1990: 181), we can cure the major diseases of bureaucracy by understanding how mental models function. Ruff & Shoho (2005 :574) believe that the mental model theory can be used for training the managers of educational facilities because this phemonenon has the potential to increase the communication channels of individuals.

While managers do not always practice what they preach, they act in line with their own mental models (Senge, 2002). Managers' mental models regarding leadership determines their perception of leadership and their interpretation of the notion of leadership. In addition, it can serve as a compass to be used for understanding leadership attitudes. There is no way of knowing the shortcomings and faults of a mental model unless it has been described. This may have a negative effect on their subsequent understanding and practicing of leadership.

Some people may think that focusing on leadership is not conducive to understanding leadership and management because this approach is rarely used for the notion of leadership. Changing a person's way of thinking is harder than changing how they handle things. Despite this challenge, changing people's way of thinking about different situations is the most powerful and useful way of changing people's attitudes toward leadership and organizational results (Pfeffer, 2005).

This study has been organized on the theoretical assumption developed by Senge (1990: 8). "Mental models consist of deeply-seated assumptions, generalizations, pictures or images which affect the way we understand the world and how we should act." The purpose of this study is to demonstrate mental models that school principals, who are expected to act as leaders, have about leadership. We believe that the study will be important for the process of guiding school principals because it may lead to the development of anticipated leadership traits while ensuring the discovery of complicated, incomplete or vague mental models that may be present on the minds of school principals. Thus, the mental models of school principals concerning leadership may be improved by taking the current situation into consideration during the process of mentoring school principals because they can play their leadership roles more effectively and adapt themselves to change more easily and become more empowered to change their environment if they have better mental models. Answers to the following questions were sought in order to achieve the objective of the study:

1) How do school principals describe leadership?
2) What are the characteristics of a leader from the standpoint of school principals?
3) Do school principals believe that leadership can be acquired later?
4) How could a leader contribute to a school from the standpoint of school principals?

2. Methodology

2.1 Research Model

This study has been qualitatively modeled with a view to determining the mental models of school principals regarding the concept of "leadership" and the phenomenologic pattern was used for the study. This pattern focuses on phenomena which people are aware of, but which they do not have comprehensive and detailed information about (Yıldırım and Şimşek, 2004).

2.2 Universe of Study

The universe of the study has been selected by using convenience sampling technique, which is among purposive sampling methods. This technique was used in order to ensure rapid collection of data. In addition, the universe of the study was easily accessible (Yıldırım and Şimşek, 2004). The universe consisted of 61 school principals enlisted in the post-graduate program on Educational Administration and Supervision in Bursa, Samsun, Trabzon, and Istanbul. All the respondents received training in leadership which had been completed prior to this study.

2.3 Data Collection Tool

Data has been collected by means of a data collection tool consisting of four open-ended questions which has been developed by the researchers. Opinions were received from four experts in order to prove evidence about the validity and reliability of the data collection tool and it was finalized in light of suggestions and then applied to the respondents. In addition, the respondends were asked to draw pictures of a leader and his or her followers and they drew pictures on blank papers distributed to them without any intervention by the researcher.

2.4 Data Analysis

The respondents' replies to the questions in the data collection tool were examined and analyzed in order to analyze research data. The purpose of the content analysis was to reach concepts and relationships that could explain the data (Yıldırım and Şimşek, 2004). Data obtained as a result of this analysis was categorized based on their similar characteristics. As regards the analysis of drawings about leaders and their followers, the respondents' drawings were examined based on their common characteristics and similar drawings were brought together and categories were formed. Sample quates from the respondents' replies and drawings were used for analyzing the data in order to provide evidence about the validity of the study.

3. Findings

3.1 Findings obtained about the description of a leader

Replies to the question "What is your understanding of the notion of 'leader'?", the first question on the data collection tool, are presented below.

Table 1: School principals' opinions about the concept of 'leader'

Reply	f	%	Reply	f	%
Steers	22	14.37	Improves his/her organization	6	3.92
Manages	21	13.72	Gives positive energy	3	1.96
Influences	20	13.07	Determinant of organizational climate	2	1.3
Visionary	13	8.49	Role model	2	1.3
Motivates	10	6.53	Initiator	2	1.3
Guides	10	6.53	Leads to a goal	2	1.3
Farsighted	10	6.53	Shapes future	2	1.3
Leads	9	5.88	Artist of his/her organization	2	1.3
Followed by others	9	5.88	Creates synergy	1	0.65
Authoritarian	6	3.92	Consulted	1	0.65
			Total	**153**	**100**

The replies were analyzed and some statements of the participants about the description of leadership are (Steers (K20): "*A leader is a person who steers society.*"; Manages (K52): "*A leader is an individual who ensures that all existing resources are used in the most efficient manner in the best interests of persons receiving services from the agency and that the agency functions without any interruption.*")

3.2 Findings about the hallmarks of a leader

The school principals' replies to the second question i.e. "What are the characteristics of a leader from your viewpoint" have been categorized under four titles. Replies given by the school principals about leadership characteristics were categorized as "*behavioral characteristics*", "*personality traits*", "*skills*" owned, and "*physical characteristics*" and each category is presented on different tables.

Table 2: School principals' opinions about leaders "*behavioral characteristics*"

Sub-category	f	%	Sub-category	f	%
Innovative	15	20.27	Desirous to learn	4	5.40
Takes risks	12	16.21	Open	3	4.05
Solution oriented	10	13.51	Inquisitive	3	4.05
Rational	7	9.45	Democratic	3	4.05
Industrious	5	6.75	Principled	1	1.35
High moral standards	5	6.75	Takes initiative	1	1.35
Tolerant	4	5.40	Recognizes accomplishment	1	1.35
			Total	**74**	**100**

A total of 14 characteristics were listed in "behavioral characteristics" category. "Innovative" ranks first with 20.27% among the characteristics in sub-categories. "Takes risks" ranks second with 16.21% and "solution oriented" comes third with 13.51%.

Table 3: The school principals' opinions about leaders "*personality traits.*"

Sub-category	f	%	Sub-category	f	%
Honest	16	20.77	Self-confident	4	5.19
Fair	12	15.58	Resolved	4	5.19
Trustworthy	9	11.68	Open	3	3.9
Intelligent	7	9.09	Coherent	3	3.9
Frank	6	7.79	Idealist	2	2.6
Courageous	5	6.49	Modest	1	1.3
Creative	4	5.19	Perfectionist	1	1.3
			Total	**77**	**100**

A total of 14 leadership characteristics were listed in "*personality traits*" category. Honesty ranks first with 20.77%, one of the characteristics listed in sub-categories. "Fair" ranked second with 15.58% and it was followed by

"trustworthy" with 11.68%.

Table 4: The school principals' opinions about "*skills*" of leaders

Sub-categories	f	%
Strong communication skills	26	33.33
Strong management skills	21	26.92
Knowledgeable	15	19.23
Visionary	8	10.25
Strong empathy skills	6	7.69
Capable of using technology efficiently	2	2.56
Total	**78**	**100**

A total of six leadership characteristics were listed in "*skills*" category. "Strong communication skills" ranked first with 33.33% among skills in the sub-categories. It was followed by "strong communication skills" with 26.92% and "knowledge" with 19.23%. Based on a review of the responses, some opinions of the respondents about the description of leadership are (Strong communication skills (K18): *"A leader is a good orator and can use his voice and body language effectively.";* Strong management skills (K31): *"He or she can use resources in an effective and efficient manner";* Knowledgeable (K7): *"A leader is a wise person who is knowledgable in his or her field"*.

Table 5: The school principals' opinions about "*physical characteristics"* of leaders)

Sub-category	f	%
Charismatic	22	88.0
Good physical appearance	3	12.0
Total	**25**	**100**

A total of two leadership characteristics were listed in "*physical characteristics*" category. "Charismatic" ranked first with 88.0 % among skills in the sub-categories. It was followed by "physical appearance" with 12.0 %.

3.3 Findings about the possibility of "acquiring" leadership
Responses to the question "Could everybody become a leader? Why?" which was the third question on the data collection tool.

Table 6: The school principals' opinions about the possibility of acquiring leadership

Responses	Reasons cited	f	%
Possible	Leadership is a phenomenon that can be learned.	7	11,5
	Leadership is situational.	2	3,3
Not possible	Leadership is an innate skill.	31	50,8
	Leadership is a personality trait that only a few people have.	13	21,3
	Leaders have superior skills as compared with other people.	8	13,1
	Total	**52**	100

According to responses to question "Could everybody become a leader?", 14.8 % of the respondents said that everybody could be a leader whereas 85.2 % said it was not possible. Some of the responses to the questions are (Everybody can become a leader because: K (34): "*What really matters is the existence of conditions permitting a person to display leadership characteristics.";* K (23): "*Leadership is a phenomenon which is not innate,but acquired during one's lifetime. A person can become a leader if he or she changes and improves his or her abilities.")* (Every one cannot become a leader because: K (6*): "Character is important for leadership and not everyone has a character needed for leadership.";* K (27): "*Leadership is a qualification which can partly be acquired at birth and turn into a fully-fledged trait by hard work and efforts.")*
3.4 Findings about a leader's potential contributions to the school
Responses to question "What are a leader's contributions to a school", the fourth one on the data collection tool, are presented below:

Tool 7: The school principal's opinions about a leader's contribution to a school

Statements	f	%	Statements	f	%
He/she will improve the school.	21	15.10	He/she finds rapid solutions to problems.	5	3.60

He/she manages the school in the best manner.	20	14.38	He/she ends conflicts and ensures harmony.	4	2.88
He/she motivates employees.	18	12.95	He/she initiates innovations at the school.	4	2.88
He/she creates a positive atmosphere in the school.	12	8.63	He/she guides employees.	4	2.88
He/she increases academic achievement.	10	7.19	He/she ensures that democracy takes root at the school.	4	2.88
He/she increases effectiveness and efficiency at the school.	10	7.19	He/she serves as a good role model for teachers and students.	3	2.15
He/she transforms the school.	7	5.03	He/she ensures that teachers improve their professional skills.	2	1.44
He/she develops a vision.	6	4.31	He/she can see the future and takes action before a problem occurs.	2	1.44
He/she creates a culture.	6	4.31	He/she transforms the school into a center of gravity.	1	0.71
			Total	**139**	**100**

In response to the question "How could a leader contribute to a school?", 15.1% of the respondents replied "He/she will improve the school." It was followed by 14.4% who replied "He/she manages the school in the best manner" and 13% who said "He/she motivates employees."

*3.5 Findings related to drawings about the concept of "leader."*

Table 8 shows the categories comprising the school principals' drawings reflecting their mental models about leadership and related distribution of percentages and frequencies.

Table 8: Categories created by the respondents' drawings about the concept of "leader".

Categories	f	%
Leading and guiding	31	50.82
Wields authority	19	31.15
Brain of the organization	9	14.75
Visionary	2	3.28
Total	**61**	**100**

An examination of the table indicates that the drawings made by the school principals in order to explain the concept of "leader" are put into four categories. "Leading and guiding" accounted for 50.8% of the drawings among those categories as compared with "visionary" which was at the bottom of the list with 3.28 %. The percentage of the respondents who pictured the leader as an authoritative person was 31.15 % which is striking.
Some of the drawings are below:
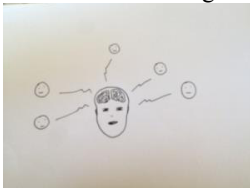
Drawing 1 (K61): Brain of the organization | Drawing 2 (K 37): Visionary | Drawing 3 (K2): Leading and guiding | Drawing 4 (K59): Wields authority

The common characteristics of the drawings were that the respondents pictured a leader noticeably away from his or her followers and taller and physically stronger than them. Another remarkable characteristic of the drawings that was that all the leaders were drawn as men although there were women among their followers. Sample drawings are given below.

4. Conclusion and discussion

An examination of the findings pertaining to the description of leadership indicates that the mental models created by the school principals do not focus on a single point and that they consist of different models. According to Argyris (1993), the accuracy of a mental model created by the members of an organization about the same

phenomenon would not be sufficient. The same mental model should be shared among its members. This fact shows the power of non-verbal communication (Ruff & Shoho, 2005 :558). Thus, different mental models observed among the school principals show they have different opinions about the same phenomenon.

One of the key findings of the study is mental models created by the school principals, which we could describe as "inaccurate." One could say that the term "managing", the second most important characteristic among all, and "authoritarian", which ranked tenth, were different from other descriptions because leadership is different from management and it is a phenomenon based on volunteering and influencing by personal skills rather than authority (Ergeneli, 2006; Kırel, 1998: 185; Hass & Tamarkin, 2000: 83; Erdoğan, 1991: 332; Başaran, 1998: 87 & Benis, 1994: 102-110). Considering that all respondents had received training about leadership, it is a noteworthy finding that those concepts are among the descriptions of leadership. It also shows that there are inaccurate mental models regarding leadership among the school principals.

Another key finding of the study is the finding that it is possible to acquire leadership. An examination of those findings indicate that only a small portion of the respondents (14.8 %) believe that leadership is a characteristic that one could acquire later. Aside from what leadership actually is, this is a fairly problematic situation in terms of the development of schools because educational administrators who have this "inaccurate" mental model should not be expected to display leadership attitudes at their schools in the future if they have not regarded themselves as a leader so far. In addition, they would neither be expected to transfer their leadership behavior to teachers assigned to their schools because mental models result from observation, evaluation, design, and application processes (Kim, 1993:39). School principals can switch to the application phase by using those models that they have created during the process of observation and evaluation. They would act according to that mental model that they have and give that impression in their surroundings.

Another interesting aspect of the respondents' drawing is that the leader is pictured away from his followers. The fact that the leader was drawn as an authoritative figure separated from his followers might have originated from the fact that power distance is high in the Turkish culture (Paşa, 2000) where followers may expect autocratic and protective attitudes from their leaders (Hofstede, 1985).

In conclusion, this study analyzes the concept of leadership based on the assumption of the significance of a mental model and it represents the first step in its field. In the future, it will be possible to take a closer look at the concept of leadership by using the mental model theory and to conduct studies on the effectiveness of mental models and to examine the relationship between a school's efficiency and mental models formed by school principals about leadership. Training programs conducted for educating school principals should include educational events to form accurate mental models. In addition, effort should be made to ensure that those mental models are adapted as common models.

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