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## **ASSESSING THE LEARNING ORGANIZATION PROFILE OF OHIO STATE UNIVERSITY EXTENSION USING THE SYSTEMS-LINKED ORGANIZATIONAL MODEL**

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**Angel Berrio:** Assessing the learning organization profile of Ohio State University extension using the 30 systems-linked organizational model

*Ciencias Sociales Online*, Marzo 2006, Vol. III, No. 1 (30 - 46).

Universidad de Viña del Mar - Chile

## Abstract

The systems-linked organizational model proposed by Marquardt (1996) was used to describe the learning organization profile exhibited by Ohio State University Extension (OSU Extension) personnel (see Appendix A). This framework assesses the learning organization profile based on five sub-systems: a) Learning; b) Organization; c) People; d) Knowledge; and e) Technology. A descriptive-type of research design was used. A questionnaire was mailed to OSU Extension personnel (n=434) at the county, district and state levels during August and September 1999. Instrument validity and reliability were established. OSU Extension personnel expressed a positive belief that OSU Extension represents an organization holding the core characteristics of a learning organization. The analysis of the learning organization profile sub-systems shows that the highest mean score exhibited by OSU Extension personnel was in the organizational transformation sub-system, while the lowest mean score recorded was in the technology application subsystem (see Appendix B). To become a more effective and efficient educational organization, OSU Extension should raise the learning organization profile level of employees. In this regard the institution must initiate an organizational transformation process for learning excellence. This transformation must include developing a shared vision and an organizational learning culture, creation of a powerful strategy for building a learning organization and a structure capable of implementing that strategy, and finally developing a transformational leadership style at the decision making instances to achieve high levels of ethics, motivation, and performance (Covey, 1989; Schein, 1992; Kreitner, 1995; Marquardt, 1996).

## INTRODUCTION

Organizational learning (OL) has been the focus of considerable attention in the literature lately and a great deal of work has been generated on the topic in the last decade. Many academic disciplines have been identified also as contributors to the recent understanding of organizational learning (i.e. psychology, management science, marketing, production management, sociology, and cultural anthropology) (Easterby-Smith, 1997).

Several definitions of organizational learning have emerged from the literature, but the most popular was formulated by Senge (1990): "...organizations where people continually expand their capacity to create results they truly desire, where new and expansive patterns of thinking are nurtured, where collective aspiration is set free, and where people are continually learning how to learn together" (p. 3). On the other hand, Garvin (1993; cited by Kreitner, 1995; p. 276) in an effort to consolidate different thoughts on OL has launched the following definition: "A learning organization is an organization skilled at creating, acquiring, and transferring knowledge, and at modifying its behavior to reflect new knowledge and insight." Garvin's definition of OL relies on the requirements that an organization must satisfy in order to become a learning organization.

Some debate has arisen from an existent dichotomy in the use of the terms "organizational learning" and "the learning organization". Both concepts are so

**Angel Berrio:** Assessing the learning organization profile of Ohio State University extension using the 31 systems-linked organizational model

*Ciencias Sociales Online*, Marzo 2006, Vol. III, No. 1 (30 - 46).

Universidad de Viña del Mar - Chile

intimately related that sometimes they are used interchangeably in the literature. The difference between organizational learning and the learning organization refers to process versus structure. Organizational learning is used to describe certain type of activities that take place in an organization. Organizational learning is a construct, which implies that the entity called an organization actually gets engaged in the process of gathering and processing information, and as a consequence its potential behavior is changed. Learning organization is a construct related to an organization that has a thoughtful philosophy for anticipating, reacting, and responding to change, complexity, and uncertainty. The learning organization refers to a particular type of organization: it is an organization that is good at organizational learning. The consequence of this debate is that the concept of organizational learning always comes first and the learning organization follows, but they are mutually inclusive. This dichotomy also implies that organizational learning is a complex and multidimensional phenomena (Malhotra, 1996; Tsang, 1997).

Organizational learning is the development of new knowledge and insight that have the potential to influence behavior. In this context, learning facilitates change in behavior that leads to improved performance. Therefore, organizations must pursue the integration of learning processes, behavior change, and performance improvement in order to adapt to an ever-changing environment. Some scholars have equated organizational learning with market orientation. Market orientation refers to an organization's effort to generate market intelligence (information), dissemination of that intelligence across departments, and the overall organizational response to that intelligence. For the majority of organizations market orientation is a valuable tool because it focuses the organization on: continuously collecting information about customer needs and competitors capabilities, and using the information to create superior customer value. In this regard, OSU Extension is perceived by its personnel to be an institution devoted to satisfying the needs and wants of its clients through programs that are clearly defined, sensible to public needs, constantly monitored for success, and pro-actively implemented (Jaworsky & Kolhi, 1993; Slater & Narver, 1995; Berrio & Henderson, 1997).

Organizational learning is considered a three-stage process that includes: information acquisition, information dissemination, and shared interpretation. Information acquisition refers to information that comes from direct individual experience, experience of others, and organizational memory. Information dissemination deals with effective dissemination or sharing of information, which increases information value to organizational members. While shared interpretation is the final stage of OL and implies a consensus to the meaning of information and its implications among members of the organization that must be established in order for organizational learning to occur. Organizations driven by this shared vision are said to be prodigious in developing a competitive advantage (Slater & Narver, 1995).

The framework of reference that will be used to assess the learning organization profile of Ohio State University Extension is called "the systems-linked organization model" and was proposed by Marquardt (1996). According to this framework a learning organization is defined as: "...an organization which learns powerfully and collectively and is continually transforming itself to better collect, manage, and use knowledge for

corporate success. It empowers people within and outside the company to learn as they work. Technology is utilized to optimize both learning and productivity” (p. 19).

Figure of appendix A shows a graphical representation of the systems-linked organization model. The model is composed of five subsystems dynamically interconnected and complementary of each other. The subsystems are: learning, organization, people, knowledge, and technology. The heart of the systems learning organizational model is the learning subsystem from which the other four subsystems permeate, but the other subsystems are necessary to enhance the quality of and impact learning has in the organization (Marquardt, 1996).

The following are the core characteristics of each of the subsystems comprising Marquardt’s (1996) systems learning organizational model:

Learning subsystem: in this subsystem, learning takes place at the individual, group, and organizational levels. This subsystem is based on the skills necessary to maximize organizational learning, represented by the six disciplines proposed by Senge (1990). The learning subsystem also refers to several types of learning crucial to the learning organization: (a) adaptive, anticipatory, and generative learning; (b) single loop, double loop, and deutero learning; and (c) action reflection learning.

Organization subsystem: this subsystem is considered the organization itself, the place and physical structure in which learning occurs. The organization subsystem has four components: (a) culture (values, beliefs, practices, rituals, and customs), (b) vision (hopes, goals and future direction), (c) strategy (action plans, methodologies, tactics, and steps toward the vision), and (d) structure (departments, levels and configurations).

People subsystem: the people subsystem includes groups of individuals that are of value in enabling and potentiating learning in the organization. This subsystem includes: (a) employees, (b) managers/leaders, (c) customers, (d) suppliers and vendors, (e) alliance partners, and (f) community groups.

Knowledge subsystem: this subsystem refers to the direction of the acquired and generated knowledge of the organization, in this respect collection and dissemination of information in the organization occurs through diverse channels and during different time frames. This subsystem includes: (a) acquisition (collection of outside information), (b) creation (new knowledge), (c) storage (coding and preserving information), (d) transfer and utilization (information movement).

Technology subsystem: the technology subsystem is the technological network needed to gain access and to exchange information and learning. The subsystem includes: (a) information technology (computer based technology), (b) technology-based learning (multiple audio-visual and computer-based), and (c) “electronic performance support system” (EPSS) (capture, storage and distribution of information)

The systems learning organizational model framework can be used in constructing a learning organization profile. Using Marquardt’s (1996) “learning organization profile” (LOP) instrument, a learning organization profile can be drawn by establishing the organization’s dominant learning characteristics in each dimension of organizational learning. In this respect the LOP is an instrument for intervention and change, and the

purpose of the framework is to make recommendations to take action in becoming a learning organization. The framework proposes a series of 16 steps, which any organization may follow to begin the process of transformation into a learning organization (Marquardt, 1996).

Although the systems-linked learning organization profile is recommended by the American Society for Training and Development (ASTD) (Van Buren & Lucadamo; 1996) as an instrument designed to diagnose and intervene in order to create a learning organization, empirical evidence about testing the framework could not be found in the literature. The only evidence are limited to different case studies which include company efforts in which the framework has successfully operated (e.g., Singapore Institute of Management, Rover Group, National Semiconductor, Pentax, Astra International, Price Waterhouse, DuPont). In this regard Tsang (1997) analyzing this matter has argue that a more rigorous research methodology (quantitative and qualitative) is needed in order to give validity and reliability to OL theories. In the field of organizational learning most of the writers gather information from clients after providing consultancy services. As a consequence consultants and clients in a collaborative effort diagnose and develop solutions to problems; therefore adopting a rough action research process. They often cite real-life cases with the purpose of illustrating where the theories are coming from (ASTD, 1996; Tsang, 1997).

## PURPOSE AND OBJECTIVES

The purpose of this study was to explore and describe the learning organization profile of Ohio State University Extension (OSUE). The researcher was also interested in studying factors that may account for variation among the learning organization profile. The learning organization profile and selected demographic characteristics were analyzed in order to establish a profile of Ohio State University Extension. The study was guided by the following objectives:

- i) Describe the perceived organizational learning profile of OSUE personnel;
- ii) Describe demographic characteristics of OSUE personnel: job title, major program area, sex, age, and length of employment;
- iii) Describe the relationship between the perceived organizational learning profile and demographic characteristics of OSUE personnel.

## METHODOLOGY

The study was classified as descriptive-correlational. The target and accessible populations were Ohio State University Extension personnel distributed in 88 counties within five districts (N=965). A sample was drawn from the population (N=434), composed of the following three personnel categories: professionals (n=357), paraprofessionals (n=347), and support staff (n=261).

The instrument used in data collection was adapted from an instrument called Learning Organization Profile (LOP), developed by Marquardt (1996) to assess the level of organizational learning in five main organizational systems: (a) organization, (b) knowledge, (c) learning, (d) technology, and (e) people. The LOP questionnaire contains statements related to organizational learning pertaining to either public or private organizations. The perception of OSU Extension personnel as a learning organization will be calculated using a mean score on a 50-item, five-point, Likert-type measurement instrument. Each item is rated from 1 (strongly disagree) to 6 (strongly agree). The ratings of the 10 items in each sub-system are summated and a mean score is calculated for the sub-system. The ratings of the 50 items are summated and a mean score of organizational learning is calculated for the organization. A higher score indicates a higher learning organization profile. At the same time demographic information was obtained from five questions about job title, major program area assignment, sex, age, and length of employment in OSU Extension with the objective of summarizing the findings according to the specific group of employees involved.

Content and face validity were established through a panel of experts and a field test respectively. For the LOP questionnaire pertaining to statements about the learning organization profile using a Likert-type scale of measurement, a coefficient of internal consistency using Cronbach's alpha methodology was also calculated. The reliability coefficient for the questionnaire was .96, a value considered to be representative of a reliable instrument (Santos, 1999).

Data were collected by a mail questionnaire using a modification of the procedures recommended by Salant and Dilman (1994). The study was performed between August and September 1999. The first mailing and follow-up postcard resulted in a 53% response rate. After the second mailing an overall response rate of 74% was established, with a 68% usable return rate for the study.

Data were analyzed by the SPSS Base 8.0 (1999) computer program. Descriptive statistics including means, medians, modes, standard deviations, ranges, frequencies, and percentages were calculated for objectives 1 and 2. An analysis of variance was performed for testing differences among demographic groups (location, job title, program area, age and length of employment) on the variable dominant culture type (actual and preferred situations). A t-test for means difference between sex and dominant culture type was also performed.

## **RESULTS**

### Learning organization profile

An analysis of the learning organization profile of OSU Extension personnel is presented in Table B.1 of Appendix B. A summated mean score on a five-point, Likert-type scale pertaining to the 50 items of the Learning Organization Profile (LOP) assessment instrument was computed (Mean=160; S.D.= 26.94). Scores could range from 50 to 250, mean scores values higher or lower than 125 are representative of a positive or negative belief that OSU Extension represents an organization which holds the core characteristics of a learning organization in the five dimensions of the learning organization profile.

The learning organization profile mean score was higher for females (Mean= 163) than for males (Mean= 153). A statistically significant difference was found between males and females on the variable learning organization profile.

The highest learning organization profile mean score was at the district level (Mean= 166) followed by the county level (Mean= 161) and state level (Mean= 151). A statistically significant difference was found among location categories. The post hoc pairwise multiple comparison analysis using Tukey method, revealed that county and district levels had a statistically significant higher mean score of learning organization profile than the state level.

The highest learning organization profile mean score was in the Family & Consumer Sciences program area (Mean= 167), while the lowest learning organization profile mean score was in the Agriculture & Natural Resources program area (Mean= 156). No statistically significant difference was found among program areas on the variable learning organization profile.

The highest learning organization profile mean score was in the paraprofessionals and support staff (Mean= 164) categories, while the lowest learning organization mean

**Angel Berrio:** Assessing the learning organization profile of Ohio State University extension using the 36 systems-linked organizational model

*Ciencias Sociales Online*, Marzo 2006, Vol. III, No. 1 (30 - 46).

Universidad de Viña del Mar - Chile

score was in the professionals (Mean= 156) category. A statistically significant difference was found among job title categories for the variable learning organization profile. The post hoc pairwise multiple comparison analysis using Tukey method revealed that there were not significant differences between pairs of groups, meaning that the significant difference could be between one group and a combination of two other groups.

The highest learning organization profile mean score was in the age group category 51 years (Mean= 162), while the lowest learning organization mean score was in the age group category 41-50 years (Mean= 157). No statistically significant differences were found among age categories on the variable learning organization profile.

The highest learning organization profile mean score for length of employment was in the 06-13 years category (Mean= 163), while the lowest learning organization profile mean score was in the 14 years category (Mean= 156). No statistically significant differences were found among length of employment categories on the variable learning organization profile.

#### Dimensions of the Learning Organization Profile

Five dimensions were analyzed by the learning organization profile instrument using the systems-linked learning organizational model. Table 1.2, shows the highest mean score expressed by OSU Extension personnel in each of the dimensions of the learning organization profile.

The analysis of the learning organization profile dimensions shows that the highest mean score exhibited by OSU Extension personnel was in the organizational transformation dimension (Mean= 33.66), while the lowest mean score recorded was in the technology application dimension (Mean= 30.05).

## **CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS**

The summated mean score in 50 items on a five-point Likert-type scale was 160, indicating a positive perception that OSU Extension represents an organization that holds the core characteristics of a learning organization in the five dimensions of the learning organization profile by OSU Extension personnel. Females had a statistically significant higher mean score (Mean= 163) than males (Mean= 153) on the learning organization profile. The highest mean score on the learning organization profile was exhibited by district personnel (Mean= 166), while county personnel had the second highest mean score (Mean= 161) and state personnel had the lowest mean score (Mean= 151). The post hoc pairwise multiple comparison analysis using Tukey method, revealed that personnel at the county and district levels had a statistically significant higher mean score of learning organization profile than personnel at the state level. The highest mean score of learning organization profile was in the Family & Consumer Science program area (Mean= 167) and the lowest mean score was in the Agriculture & Natural Resources program area (Mean= 156). Paraprofessionals and support staff had statistically significant higher mean scores on the learning organization profile

**Angel Berrio:** Assessing the learning organization profile of Ohio State University extension using the 37 systems-linked organizational model

*Ciencias Sociales Online*, Marzo 2006, Vol. III, No. 1 (30 - 46).

Universidad de Viña del Mar - Chile

(Mean= 164), than professionals with a mean score of 156. OSU Extension personnel over 51 years of age and personnel with 6-13 years of employment had the highest mean scores on the learning organization profile. The analysis of the learning organization profile dimensions revealed that the highest mean score exhibited by OSU Extension personnel was in the organizational transformation dimension (Mean= 33.66), while the lowest mean score registered was in the technology application dimension (Mean= 30.05).

The overall learning organization profile of OSU Extension is slightly high, revealing the organization's belief that OSU Extension represents an institution holding the core characteristics of a learning organization on the five dimensions of the systems learning organizational model proposed by Marquardt (1996). According to these five dimensions, the core characteristics of a learning organization are: (a) learning in the organization takes place at individual, group and organizational levels; (b) an adaptable culture capable of integrating relationships and encouraging learning by enhancing teamwork, self-management, empowerment, and sharing. Vision that captures the goals, objectives, and a sense of direction for the future. Strategy related to action plans, tactics, and methodology used to implement the vision, optimizing acquired, transferred, and utilized learning. And structure that maximizes contact, information flow, local responsibility, and collaboration; (c) organizational groups conformed by employees, managers, customers, stakeholders and community itself are empowered and enabled to learn; (d) information acquisition, creation, transfer and utilization are part of an ongoing and interactive process instead of a sequential and independent process; and (e) technological networks and information tools permits information exchange and learning (Marquardt, 1996).

Females have a higher learning organization profile than males. This conclusion is compatible with documented differences among traits, attitudes, and activities for females and males that can affect organizational learning (Hoyer & Macinnis, 1997). According to research in the field of consumer psychology, in Western societies, males are guided by "agentic goals" which stress mastery, self-assertiveness, and self-efficacy, while women have been guided more by "communal goals" of affiliation and promoting harmonious relations with others. Furthermore, men tend to be more competitive, independent, externally motivated, and more willing to take risks. In contrast, women tend to be more cooperative, interdependent, intrinsically motivated, and risk adverse. The above female characteristics and the fact that women also tend to have stereotypical jobs like those of secretary, nurse, or teacher, help explain the difference in learning organization profile between males and females in the study (Hoyer & Macinnis, 1997).

OSU Extension personnel at the district level have a higher learning organization profile than Extension personnel at the state and county locations. Paraprofessionals and support staff have a higher learning organization profile than professionals. Paraprofessionals and support staff categories combined represent employees whose job descriptions are more connected to the clientele Extension serves through its different programs.

The analysis of the five sub-systems included in the systems-linked organizational learning model revealed that the highest mean score exhibited by OSU Extension personnel was in the organization subsystem. Although the variation between mean scores is negligible, the rank given to the organization sub-system reveals the high importance that OSU Extension personnel gives to the setting where learning occurs and its four key components: vision, culture, strategy and structure. On the other hand, the lowest mean score exhibited by OSU Extension personnel was in the technology subsystem revealing the lesser importance OSU Extension personnel gives to technological networks and information tools used to gain access to information and learning in the organization (Marquardt, 1996).

Although the overall learning organization profile of OSU Extension is slightly high, revealing the organization's positive belief that OSU Extension represents an institution holding the core characteristics of a learning organization, to assure a competitive advantage in the non-formal educational arena an effort has to be made to raise the learning organization profile level of OSU Extension employees. In this regard the institution must initiate an organizational transformation process for learning excellence. This transformation must include developing a shared vision and an organizational learning culture, creating a powerful strategy for building a learning organization and a structure capable of implementing that strategy, and finally developing a transformational leadership style at the decision making instances to achieve high levels of ethics, motivation, and performance (Covey, 1989; Schein, 1992; Kreitner, 1995; Marquardt, 1996). In this regard Kline and Saunders (1998) have proposed a ten step process to become a learning organization. The ten steps are: a) assess your learning culture; b) promote the positive; c) make the workplace safe for thinking; d) reward risk-taking; e) help people become resources for each other; f) put learning power to work; g) map out the vision; h) bring the vision to life; i) connect the systems; and j) get the show on the road. According to the authors of the framework, the first step has already been accomplished by this study with the drawing of a learning organization profile. The next nine steps could be implemented following the author's guidelines to become a learning organization (Marquardt, 1996).

In this organizational transformation process for learning excellence, special attention must be directed toward increasing the learning organization profile level of OSU county and state personnel, and also of personnel in the professional job title category. In this regard the set of steps recommended by Marquardt (1996) to become a learning organization has a great deal of applicability for raising the learning organization profile level of the aforementioned categories of personnel. The steps contained in the author's framework are: a) commitment to become a learning organization; b) connect learning with business operations; c) assess the learning organization profile; d) communicate the vision; e) recognize the importance of system thinking and action; f) leaders should demonstrate their commitment to learning; g) transform the organizational culture to one of learning and continuous improvement; h) establish organizational strategies for learning; i) cut bureaucracy and streamline the structure; j) empower employees; k) take organizational learning to the entire business change; l) capture learning and release knowledge; m) acquire and utilize technology in learning; n) enhance learning at the individual, group, and organizational levels; o) learn about learning organization; and p) exercise continuous adaptation, improvement and learning. The author gives specific guidelines for implementing each step to become a

**Angel Berrio:** Assessing the learning organization profile of Ohio State University extension using the 39 systems-linked organizational model

*Ciencias Sociales Online*, Marzo 2006, Vol. III, No. 1 (30 - 46).

Universidad de Viña del Mar - Chile

learning organization in any public or private institution (Marquardt, 1996). Although the mean score in each of the dimensions of organizational learning are very similar,

attention must be directed toward the importance of technology application in the learning process of OSU Extension personnel. This finding

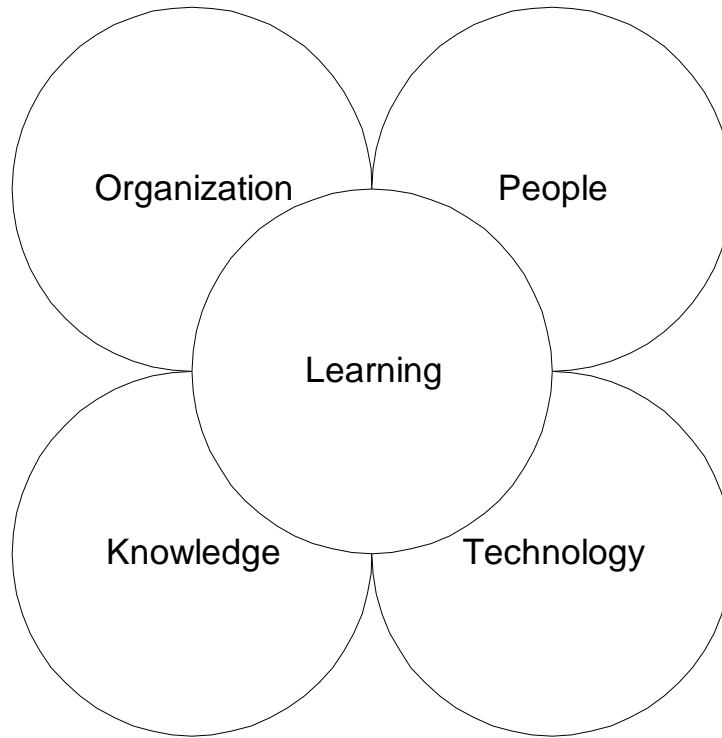


Figure 1.1: Systems learning organization model (Marquardt, 1996).

ng might indicate a need to promote among personnel in the organization, the use of technological networks and information tools to gain access to information and learning (Marquardt, 1996).

#### APPENDIX A: A model of organizational learning

APPENDIX B: Data of research

B.1. Table of learning organization profile of OSU Extension personnel.

Category	n	Mean	S.D.	Median	df	F	p
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Total (Extension)	Group	297	160	26.94				
Sex		96	153	26.12	154	1	8.631	.004*
Male		198	163	26.94	164			
Female						2	4.891	.008*
Location		182	161	27.22	162			
County		48	166	23.79	164			
District		67	151	26.76	152			
State						4	1.873	.115
Program Area		79	156	26.79	156			
Agr.&	Nat.	21	158	33.40	163			
Resources		69	167	24.20	168			
Comm.		74	160	26.40	159			
Development		51	157	28.26	158			
Fam. & Sciences	Con.					2	3.702	.026*
4-H Youth Develop.		147	156	26.69	157			
More than one		64	164	27.50	167			
		86	164	26.11	160			
Job Title						2	.913	.403
Professionals/Admins.		93	161	26.60	159			
Paraprofessionals		114	157	26.31	159			
Support Staff		87	162	28.39	164			
Age						2	1.433	.240
20-40 years		105	161	28.76	159			
41-50 years		92	163	23.67	162			
51 years		97	156	27.93	159			
Length of Employment								
01-05 years								
06-13 years								
14 years								

\* p < .05

Note: Mean scores could range from 50 to 250. A higher mean score indicates a more positive belief that OSU Extension possess the characteristics of a learning organization.

B.2: Table of highest mean score on the learning organization profile dimensions of OSU Extension personnel.

Dimension	n	Mean	S.D.
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**Angel Berrio:** Assessing the learning organization profile of Ohio State University extension using the 42 systems-linked organizational model

*Ciencias Sociales Online*, Marzo 2006, Vol. III, No. 1 (30 - 46).

Universidad de Viña del Mar - Chile

Organizational Transformation	297	33.66	6.39
People Empowerment	297	33.21	6.86
Knowledge Management	297	31.50	6.12
Learning Dynamics	297	31.34	5.30
Technology Application	297	30.05	7.34

Note: Mean scores could range from 10 to 50. A higher mean score indicates the level of importance of the dimension in the organization's learning organization profile.

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**Angel Berrio:** Assessing the learning organization profile of Ohio State University extension using the 44 systems-linked organizational model  
**Ciencias Sociales Online**, Marzo 2006, Vol. III, No. 1 (30 - 46).  
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