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The Relationships among Individual, Team, and Organizational Learning in Taiwan's University and College Libraries

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Abstract:

In the past few decades, organizational learning has become crucial topic for organizational development in a changing environment. Several scholars and experts in the field of librarianship have advocated the importance of creating a learning library for handling changes, such as the rapid development of the Internet and digital technology. However, an effective learning organization relies on a positive learning culture and starts with an individual commitment to learn. Therefore, for this study, the author measures the learning culture at the individual, team, and organizational levels, and examines the relationships among individual, team, and organizational learning within Taiwan's university and college libraries.

A survey instrument based on the Dimensions of Learning Organization Questionnaire (DLOQ) is used for data collection to examine the perceptions of library staffs on how the organization they were employed for supports and uses learning at an individual, team, and organizational level. This study assesses the learning culture of the individual, team, and organizational levels at Taiwan's university and college libraries. The survey population for this study encompasses 162 university and college libraries in Taiwan. Questionnaires were distributed to each library by mail in June and July, 2012. 810 questionnaires were distributed for this study. A total of 478 library staff members responded to the questionnaires, resulting in an overall response rate of 59 %.

Several significant results were obtained in this study as follows: (a) The overall perceived value of the learning culture at the individual, team, and organizational levels are not strong among library staffs

in Taiwan's universities and colleges. (b) Non-managerial staff members with 11 to 15 years of work experience at Taiwan's academic university and college libraries show a lower level of perception on the value of the learning culture at the individual, team, and organizational levels. (c) University and college libraries with a higher learning culture at the individual and organizational levels can predict a higher level of knowledge performance in their organizations. (d) The learning cultures among the individual, team, and organizational levels have a positive interrelationship in Taiwan's university and college libraries.

Keywords: learning culture, individual learning, team learning, organizational learning, knowledge performance

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Introduction

The futurist, Alvin Toffler (1970, p. 367), acknowledged the psychologist Herbert Gerjuoy as saying "Tomorrow's illiterate will not be the man who can't read; he will be the man who has not learned how to learn." Based on this concept, Toffler said famously, "The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn." Obviously, learning is the key for people to become literate in the twenty-first century."

The concept of learning is not only meaningful to an individual but also to an organization. In the past few decades, organizational learning has become an important topic for organizational development in the changing environment. It has also been recognized as a crucial strategy for an organization's survival. Forman (2004, p. 17) assumed that a learning organization can make itself smarter, stronger, and better equipped to adapt to change. Numerous scholars and experts in the field of librarianship have also advocated the importance of creating a learning library to handle certain changes, such as the rapid development of the Internet and digital technology (Rowley, 1997; Gieseck & NcNeil, 1999; Chen, 2006; Su, 2006).

An effective learning organization relies on a positive learning culture, and starts with an individual commitment to learning. People in the organization share their knowledge in groups and throughout the organization. (Marsick & Watkins, 2003, p. 132). Therefore, the orientation toward individual learning may no longer suffice. Cumulative learning among people in teams and organizations has become more important. Accordingly, the individual, the team, and the organization are the three different, but interrelated, foci for learning (Forman, 2004, p. 16).

Based on these concepts, this study aims to measure the learning culture at the individual, team, and organizational levels, and examine the relationship between learning culture and performance in an organization. In addition, this study explores the relationships among individual, team, and organizational learning in university and college libraries in Taiwan.

Literature Review

Definition of learning, individual learning, team learning, and organizational learning

Kolb (1984, p. 38) defined that learning as the process in which knowledge is created through experience. Learning is a relatively permanent change in behavior that occurs because of a person's interaction with an environment (McShane & Von Glinow, 2010, p. 82).

Learning at the individual level is that learning is a selective retention of the experience that is embedded as cognitive reconstructions (Marsick & Watkins, 2003, p. 135). Individual learning is based on numerous factors, such as cognitive capacity, learning styles, interpretive ability, and an individual schema (Murray & Moses, 2005, p. 1187).

The best known early use of the term "team learning" is perhaps in Peter Senge's book, *The Fifth Discipline: the Art and Practice of the Learning Organization*. Senge (1990, p. 236-237) defined that team learning as the process of aligning and developing the capacity of a team to create the results its individual members truly desire. Kayes, Kayes and Kolb (2005) viewed team learning as a function of individual experience and how that experience interacts within the team.

Organizational learning is a process that is increasingly satisfying to its stakeholders. Organizational learning is not only the sum of all the knowledge of its organizational members, but also the collective use of this capability of learning (Dixon, 1994).

In conclusion, organizational learning builds on the processes of individual, team, and organizational learning to transform the group into a successful learning operation. An effective learning organization must be able to learn at the individual, team, and organizational levels to respond quickly to change and generate good performance.

The relationships of individual, team, and organizational learning

In the process of organizational learning, Dodgson (1993) indicated that people are the primary learning entity in organizations and the main source of organizational transformation. O'Hara (1996, p. 38) stated that individual learning is the best approach to help manage organizational change, and effective management development enables people to take responsibility for their own learning. McShane and Von Glinow (2010, p. 87) stated that organizational learning is heavily dependent on individual learning. Organizational learning cannot exist without individual learning, but individual learning does not suffice for organizational learning (Argyris & Schon, 1978, p. 20).

Team learning is enhanced in organizations in order to obtain better organizational performance. Several scholars have emphasized the importance of team learning rather than individual learning. For example, Senge (1990) suggested that team learning is more important than individual learning because most decisions are made in subunits such as teams and divisions. Murray and Moses (2005, p. 1187) argued that the team acts as interlinking

pins between learning at the individual and organizational levels, and the team learning is in the centrality of the organizational learning process. Furthermore, certain empirical studies have supported the positive relationship between team and organizational learning (Edmondson, 1996; Chan, 2003; Senaratne & Malewana, 2011). Therefore, this implies that team learning is affected by the individual level of learning, and affects the organizational level of learning.

In a word, individual and team learning should be transferred to the organizational level. In contrast, Senaratne and Malewana (2011) argued that learning can be transferred from team and organizational level to individuals. Therefore, learning at the individual, team, and organizational level clearly shows an interactive and interlinking relationship.

Organizational learning culture and organizational performance

Having a positive organizational learning culture is important. This improves organizational learning at both the individual and team levels. Leaders and other key people who have learned from experience build the learning climate and culture, influence the learning of others, and create an environment of expectation that shapes and supports desired results that are measured and rewarded (Marsick & Watkins, 2003, p. 134).

Senaratne and Malewana (2011, p. 54) stated that if organizations have a good learning culture, people are encouraged to improve individual learning through collective learning. Therefore, the relationship between learning culture and performance in an organization has gained interest in different disciplines. Overall performance is difficult to measure and diagnose in an organization. Researchers have proposed various approaches for measuring organizational performance.

Organizational learning culture is one of the popular ways for evaluating the performance of an organization. Furthermore, some organizations have adopted and successfully implemented the organizational learning approach to evaluate their knowledge performance (Torres & Preskill, 2001). Certain studies have supported the concept as well. For example, Gill (2009) stated that a culture of learning contributes to continual organizational improvement and knowledge management in nonprofit organizations. An empirical study by Kumar and Idris (2006) concluded that organizational learning culture directly impacts the improvement of knowledge performance in the private colleges in Malaysia. In addition, Imran, Rizvi & Ali (2011) surveyed 110 top managers in Pakistan's banks. That study found that the organizational learning culture shows a correlation with the improvement of knowledge performance in the banking sector.

In conclusion, organizational learning culture can be seen as a key to enhancing organizational knowledge performance and improvement, and it must be managed for knowledge performance at the individual, team, and organizational levels.

Methodology

Research questions and research framework

Based on the literature review and the purposes of this study, the author developed a research framework is shown in Figure 1 and several research questions are stated below.

***Question** 1*:
What are the overall perceptions of Taiwan's university and college library staffs on the value of their organizational learning culture?

***Question 2*:**
Do significant relationships exist between the perceptions on the value of learning culture at the individual, team, and organizational levels and the different characteristics of the library staffs in Taiwan's universities and colleges?

Question 3:
Can learning culture at the individual, team, and organizational levels influence organizational knowledge performance in Taiwan's university and college libraries?

Question 4:
Does the learning culture among the individual, team, and organizational levels have an interrelationship in Taiwan's university and college libraries?

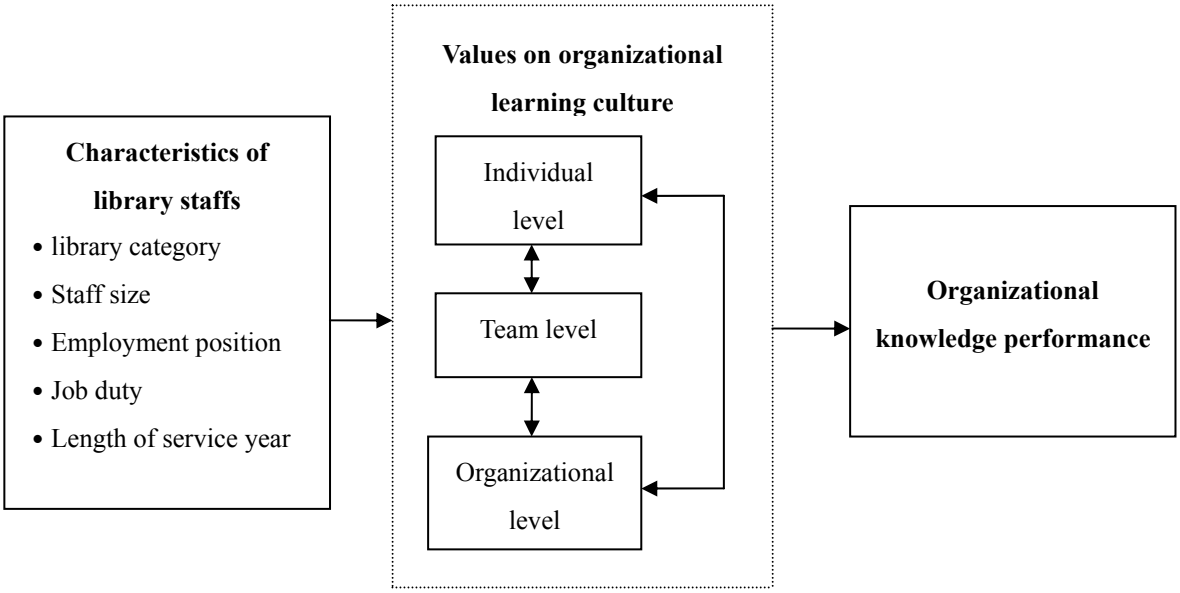

Figure 1: Research Framework

Instrument

The Dimensions of the Learning Organization Questionnaire (DLOQ) was developed by Watkins and Marsick (1993, 1996) and Marsick and Watkins (2003). The DLOQ was built on the notion that change must occur at every level of learning. These changes would occur between individuals, teams and organization. These changes must become new practices and routines that enable and support the ability to use learning to improve performance (Marsick & Watkins, 2003, p. 135). Many for-profit and nonprofit organizations have used the DLOQ to measure how their organizations support and use learning, and tested it to explore the links between learning culture and knowledge performance of an organization (Kumar & Idris, 2006; Lien, 2006; Imran, Rizvi & Ali, 2011; Haley, 2011).

A Chinese version of the DLOQ has been edited and tested by Lien (2006). The composite reliability of all constructs exceeded the benchmark approximately 0.7 or better as recommended by Nunnally (1978). Thus, for this study, the author employed Lien's Chinese version of the DOLQ as a reference for designing the survey instrument.

The questionnaire was divided into three parts. Part I consists of five items of demographic information. Part II consists of 43 questions divided into seven dimensions for measuring the perceptions of respondents for their organizational learning culture at the individual, team, and organizational levels. The content of Part II is listed in Table 1. Finally, a set of 6 questions was adopted to measure the perceptions of the respondents on the changes of the organization's knowledge performance in Part III. This study used six-point Likert-type scale for Part II, ranging from 6 (always), 5 (almost always), 4 (often), 3 (sometimes), 2 (hardly ever), to 1 (never). For Part III, the author also used a six-point Likert-type scale, ranging from 6 (strongly agree), 5 (agree), 4 (slightly agree), 3 (slightly disagree), 2 (disagree), to 1 (strongly disagree).

Table 1

Content summary of the Questionnaire in Part II

Dimension		Question
Individual level	(1) Creating a continuous learning opportunity	1-7
	(2) Promoting inquiry and dialogue	8-13
Team level	(3) Encouraging collaboration and team learning	14-19
Organizational level	(4) Creating a system to capture and share learning	20-25
	(5) Empowering people toward a collective vision	26-31
	(6) Connecting the organization to its environment	32-37
	(7) Providing strategic leadership for learning	38-43

Validity and reliability

The quantitative analysis of the questionnaire used the SPSS (Statistical Package for the Social Sciences) and other statistical analysis methods, including descriptive analysis, the *t*-test, ANOVA, regression analysis, and correlation analysis. The reliability of Parts II and III of the questionnaire in this study had a Cronbach's α of 0.98 and 0.92 respectively, indicating a high level of internal consistency for the entire questionnaire.

Sample and data collection

The author pre-tested the questionnaire by administering it to seven employees of a technological university library in Northern Taiwan. The questionnaire was later slightly refined based on the pretest response and suggestions. The population for this study included all 162 university and college libraries in Taiwan. Five copies of the questionnaire were distributed to each library by mail between June and July of 2012 for a total of 810 questionnaires. Finally, 478 library employees responded, yielding a valid questionnaire response rate of 59 %.

Result and discussion

Characteristics of the responding library staff

Table 2 shows the distribution of the respondents categorized according to the categories of the library, staff size of the library, the employment position of staff members, the duties of staff members, and length of service year of staff members in the library.

Table 2

Distribution of respondents by characteristics of the library staffs

Characteristics		No. of responses	%
Categories of the library	academic university and college library	253	52.9
	technological university and college library	225	47.1
Staff size of the library	1-10	243	50.8
	11-20	128	26.8
	above 21	107	22.4
Employment position of staff members	managerial	131	27.4
	non-managerial	247	72.6
Duties of staff members	user service oriented	181	37.9
	administrative or technical service oriented	297	62.1
Length of service year of staff members	0-5	175	36.6
	6-10	115	24.1
	11-15	82	17.2
	above 16	106	22.2

Note: N = 478

Perceived values of an organizational learning culture by library staff

According to the dimension average score of each level in Table 3, the responding library staffs show a slightly higher level of value to the learning culture at the team level than at the levels of the individual and the organization. Overall, this indicates that the leaders and staffs in Taiwan's university and college libraries encourage group/team work and value the importance of collaboration.

Regarding the mean score of each dimension, the dimension "Promoting inquiry and dialogue" (3.94) at the individual level is strongest. The second strongest dimension is "Providing strategic leadership for learning" (3.92) at the organizational level. This means that library staffs like to communicate, are willing to provide feedback to each other, and that their leaders demonstrate good support for creating a learning climate. In contrast, both the dimensions "Creating a continuous learning opportunity" (3.64) at the individual level and "Creating a system to capture and share learning" (3.67) at the organizational level show a weaker level of value on the learning culture. This tends to indicate that the university and college libraries in Taiwan have not yet established a long-term and multifaceted system that can sufficiently encourage and help their staffs in continuous learning.

The average number for each dimension ranged from 3.64 to 3.94, which is inadequate because 3 indicates "*sometimes"* and 4 indicates "*often"*. This shows that the overall values on the organizational learning culture are not strong. Thus, both the leaders and staffs of university and college libraries in Taiwan might need to focus more on creating a better learning climate and environment for their libraries at the individual, team, and organization levels.

Table 3

The value of the organizational learning culture

Dimension		Mean	Overall average
Individual level	(1) Creating a continuous learning opportunity	3.64	3.79
	(2) Promoting inquiry and dialogue	3.94	
Team level	(3) Encouraging collaboration and team learning	3.84	3.84
Organizational level	(4) Creating a system to capture and share learning	3.67	3.82
	(5) Empowering people toward a collective vision	3.82	
	(6) Connecting the organization to its environment	3.89	
	(7) Providing strategic leadership for learning	3.92	

Relationship between organizational learning culture and the characteristics of responding library staffs

As shown in Table 4, the *t*-test results indicate statistically significant differences in the perception of the organizational learning culture at the individual and team levels between academic and technological university and college library staffs. It appears that the responding library staffs of the technological universities and colleges place a higher level of value on their organizational learning culture compared to their counterparts in academic universities and colleges in Taiwan.

Table 4

The t-test results of the differences between academic and technological university and college libraries

Dimension	Mean		*t*-value
	Academic university and college library	Technological university and college library	
Individual level	3.66	3.89	-2.98**
Team level	3.76	3.93	-2.11*
Organizational level	3.76	3.89	-1.60

Note: N = 478; ** $p < .01$; * $p < .05$

In Table 5, the *t*-test results show statistically significant differences on the perceptions of the learning culture at the individual, team, and organizational levels between managerial and non-managerial library staffs. Overall, it appears that the library staffs with managerial positions place a higher level of value to their organization's learning culture than those without managerial positions in Taiwan's universities and colleges.

Table 5

The t-test results of the differences between managerial and non-managerial library staffs

Dimension	Mean		*t*-value
	Managerial library staffs	Non-managerial library staffs	
Individual level	3.90	3.72	2.10*
Team level	4.02	3.77	2.73**
Organizational level	4.03	3.75	3.11**

Note: N = 478; ** $p < .01$; * $p < .05$

As listed in Table 6, the responding staffs with different lengths of service in the library are shown to have a statistically significant difference on the perceptions of value to their organizational learning culture.

Junior staff members with less than 5 years of work experience obviously placed the highest level of value to their organization's learning culture. In contrast, the library staffs with approximately 11 to 15 years of work experience placed the lowest level of value on their organization's learning culture.

Table 6

ANOVA of the differences among library staffs with varying lengths of service in years

Dimension	Mean				F value	LSD Post Hoc
	0-5 1	6-10 2	11-15 3	Above 16 4		
Individual level	4.00	3.76	3.44	3.67	9.58**	1 > 2, 1 > 3, 1 > 4, 2 > 3
Team level	4.05	3.78	3.45	3.87	8.65**	1 > 2, 1 > 3, 2 > 3, 4 > 3
Organizational level	4.07	3.68	3.39	3.82	12.43**	1 > 2, 1 > 3, 1 > 4, 2 > 3, 4 > 3

Note: N = 478; ** $p < .01$; * $p < .05$

These results show significant relationships between the value of an organization's learning culture and the different characteristics of library staffs (i.e. the categories of the library, employment position of staff members staffs, and the length of service years) in Taiwan's universities and colleges. However, no statistically significant differences were found on the characteristics of both the job duties of staff members and the staff size of the library.

The leaders of Taiwan's university and college libraries should obviously pay substantially more attention to non-managerial employees with 11 to 15 years of work experience. They must spend time understanding their thoughts and needs for learning to organize suitable learning activities for enhancing their learning opportunities and abilities.

The relationship between learning culture and knowledge performance in an organization

The regression analysis results listed in Table 7 show that the F value is statistically significant at the $p < .01$

level. It also shows that the effect size estimated by R^2 is 0.40 (40%). That proved the fitness of the model for the relationships between the dependent variable and independent variable, and that the correlation represents a substantial effect.

The results listed in Table 7 show that the two learning culture dimensions at the individual level and at the organizational level in a learning organization can positively contribute to the enhancement of the organizational knowledge performance in Taiwan's university and college libraries. However, the learning culture dimension at the team level does not have a statistically significant impact on the organization's knowledge performance in this study. This reminds us that the leaders and staffs of Taiwan's university and college libraries encourage group/team work and value the importance of collaboration, but they have to pay more attention to individual learning to accelerate the process and enhance the knowledge performance of their respective organizations.

In conclusion, university and college libraries with a higher learning culture at the individual and organizational levels can predict a higher level of knowledge performance in their organizations.

Table 7

Regression analysis results of the relationship between the learning culture and the knowledge performance of an organization

	Learning culture (Independent variable)	β	*t* value	R^2	F value
Organizational knowledge performance (Dependent variable)	Individual level	0.17	2.50*	0.40	104.59**
	Team level	-0.06	-0.90		
	Organizational level	0.54	8.12**		

Note: N = 478; ** $p < .01$; * $p < .05$

The relationships among the individual, team, and organizational learning

According to Table 8, the learning culture at the individual level has a positive correlation with the learning culture at both the team and organizational levels (r = 0.82 and 0.80 respectively; $p < .01$; r is significant beyond the 1% level). The learning culture at the team level has a positive correlation with the learning culture at the organizational level (r = 0.81; $p < .01$; r is significant beyond the 1% level).

In conclusion, the learning culture among individual, team, and organizational levels has a positive interrelationship in Taiwan's university and college libraries. In other words, a higher level of individual learning culture can lead to a higher team and organizational learning culture. A higher team learning culture can lead to a higher individual and a higher organizational learning culture. A higher organizational learning culture can lead to a higher individual and a higher team learning culture in Taiwan's university and college libraries.

Table 8

Correlation analysis of the learning culture of the individual, team, and organization

Dimensions of learning culture	Individual level	Team level	Organizational level
Individual level	1	0.82**	0.80**
Team level		1	0.81**
Organizational level			1

Note: N = 478; ** $p < .01$

Summary and conclusion

Based on the research purposes and the results of this study, the author reached several conclusions, which are as follows:

1. The overall perceived value of the learning culture at the individual, team, and organizational levels are not strong among library staffs in Taiwan's universities and colleges. However, both the dimensions "Promoting inquiry and dialogue" and "Providing strategic leadership for learning" show a higher level of value on the learning culture. In contrast, the dimensions "Creating a continuous learning opportunity" and "Creating a system to capture and share learning" show a weaker level of value on the learning culture. Therefore, this implies that the staffs in Taiwan's university and college libraries like to communicate and are willing to exchange feedback. In addition, their leaders in the library support a climate of learning. However, most libraries in Taiwan's universities and colleges have not yet built a long-term and multifaceted system that can encourage continuous learning in the organizations.
2. The library staffs with different characteristics have different levels of perception on the value of their organization's learning culture in Taiwan's universities and colleges. For example, (a) The library staffs at the technological universities and colleges show a higher level of value on their organization's learning culture compared to their counterparts at the academic universities and colleges. (b) The managerial library staffs show more interest in their organization's learning culture than do non-managerial library staffs. (c) The staffs with approximately 11 to 15 years of work experience show less interest in their organization's learning culture than junior and senior staff members in the library.
3. University and college libraries with a higher learning culture at the individual level and organizational level can expect a higher level of knowledge performance in their organization. Therefore, creating a learning culture at the individual level is essential for building a learning organization. Establishing a learning culture at the organizational level is the key to achieving an effective performance in Taiwan's university and college libraries.
4. The learning culture among the individual, team, and organizational levels has a positive interrelationship in Taiwan's university and college libraries.

Suggestions

Senge (1990, p. 340) stated that leaders are designers, stewards, and teachers in a learning organization, and that they are responsible for learning. Accordingly, leaders play a key role in establishing the learning culture and climate for their organizations. Thus, several suggestions are proposed for library leaders based on the findings and conclusions in this study:

1. Library leaders should design a long-term and multifaceted learning system to stimulate the motivation of their staffs to learn. First, library leaders can support their staff members to attend different kinds of professional seminars and conferences nationwide and worldwide based on an approved policy. Second, they can arrange some formal and regular on-the-job training workshops and programs in the library either face to face or online that can help staff members to build job-related skills and abilities. Third, they can encourage their staffs to participate in several informal learning activities, such as joining a book club, discussing topics with colleagues or outside professionals, and establishing a mentoring system to facilitate staff training by communicating with other members in the organization. Finally, they need to provide incentives, such as financial supports, rewards and requirements to inspire each staff to learn. When a positive learning culture is built at the individual level in a library, team and organizational learning cultures are easily created. This can further lead to an organization demonstrating a higher level of knowledge performance in libraries.
2. Non-managerial staff members with 11 to 15 years of work experience at academic university and college libraries show a lower level of perception on the value of the learning culture at the individual, team, and organizational levels. This implies that library leaders have to pay close attention to understand the thoughts of this group of staff members and their learning needs. Regular meetings and irregular interviews are necessary conducted with these staff members. These meetings and interviews can probably help library leaders understand these staff members' thoughts and ideas regarding learning and other related issues. The results of these meetings and interviews can be used to organize suitable learning activities for enhancing these staff members' learning opportunities and abilities.

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