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Identifying and Prioritizing Dimensions of the Organizational Learning Model in Teachers of University of Applied Science and Technology

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ABSTRACT

Objective: The purpose of this research was to identify and prioritize the dimensions of the organizational learning model in teachers of university of applied science and technology.

Methods: This research employed a mixed methodology, specifically an exploratory sequential mixed design, which was executed in two distinct phases: qualitative and quantitative. The qualitative aspect of the statistical population comprised the managerial and vice-presidential personnel at Razavi Khorasan Scientific-Applied University, along with university professors and domain experts, who were selected through purposive sampling, totaling 25 individuals. In the quantitative segment, the dimensions and components were derived from the interviews and subsequently formulated into a questionnaire, which was disseminated among the lecturer population of Razavi Khorasan Scientific and Applied University, numbering 3,680 individuals. Based on Morgan's table, a sample size of 351 individuals was determined. Descriptive and inferential statistical methods were employed for data analysis, while the qualitative phase utilized the Delphi method. Ultimately, structural equation modeling was applied to address the primary research question and assess the model's fit to the data.

Results: The results indicated that organizational learning encompasses four dimensions (commitment, continuous learning, empowerment, and knowledge management) and 19 components, with the dimensions of empowerment, commitment, knowledge management, and continuous learning ranked from first to fourth priority, respectively.

Conclusions: Consequently, it is imperative for managers and officials to establish a system that enables professors to remain abreast of contemporary information, knowledge, theories, and research findings.

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Introduction

The significance of continual and robust learning within organizational contexts has reached unprecedented levels of importance. With the advent of phenomena such as globalization and technological advancement, the velocity and intricacy of developments have escalated to a point where organizations are compelled to perpetually acquire new knowledge in order to ensure their survival (Rashman et al., 2009; Timuranjad & Sarihi Sofestani, 2010). Within the higher education framework, the ongoing assessment of university performance is instrumental in identifying both the strengths and weaknesses inherent within the institution, while its leadership, with a forward-looking perspective, actively seeks to discern the factors that detract from or enhance university performance, thereby striving to augment the efficiency of the educational system in an exemplary manner (Dee & Leišytė, 2016). Historically, the founders of universities primarily focused on fostering a culture rooted in scholarly camaraderie and a commitment to truth, a concern that significantly contributed to the preservation and endurance of the university, a perspective that persists to a certain degree; however, in recent years, in response to environmental exigencies, there has been a notable shift in the stance of the Ministry of Science, characterized by a pronounced emphasis on learning rather than mere education, a transformation that encompasses a transition from knowledge creation to education, technological advancement, and ultimately entrepreneurship. It is abundantly evident that the pursuit of enhanced student productivity in the context of sustainable national development necessitates a transformation in the roles of university professors and faculty members, a shift that inherently demands alterations in their values, beliefs, and attitudes, which, in turn, will catalyze modifications in individual, group, and societal behaviors (Ghorbankhani & Salehi, 2017).

The paramount action a manager can undertake to enhance employee efficiency is to facilitate their attainment of personal mastery over specific issues. The successful execution of tasks or resolution of problems engenders a sense of mastery among individuals; thus, it is evident that continuous learning exerts a profound influence on the organizational performance of employees (Marzoghi et al., 2022). Nonetheless, managers possess the capacity to structure work assignments in a manner that enhances individuals' control over their tasks and the outcomes thereof, thereby elevating the comprehension of learning outcomes and fortifying the organization (Sanjari et al., 2020). The possession of contemporary knowledge, information, and innovative behaviors among

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faculty members stands as a principal concern for university administrators. By enhancing the frameworks of knowledge management and organizational learning, university administrators can facilitate the proliferation of innovative approaches and behaviors among faculty, ultimately resulting in augmented productivity for the institution (Araei & Mohammadi Mehr, 2022).

In their scholarly investigation, Hyatt and Williams (2011) delineated factors including collaboration with faculty members, counseling services, delivery of services, research activities, and pedagogical practices as the five fundamental competencies requisite for faculty members. Gomes and Wojahn (2017) argue that four prerequisites must be fulfilled for effective organizational learning: Firstly, the organization's management must establish a robust foundation that supports organizational learning endeavors. Secondly, the presence of collective intelligence is essential. Thirdly, the organization must cultivate organizational knowledge through the processes of knowledge transfer and integration; furthermore, mere adaptation to environmental changes is insufficient. Rather, it should foster innovative learning. Oosthuizen and van der Bijl (2019) conducted an inquiry into the methodologies employed by professors and trainers to sustain knowledge and skills within the industrial sector of technical and professional colleges. Their findings reveal that instructors frequently lack practical experience in authentic environments and tend to refresh their knowledge via informal mechanisms such as academic study and performance. Khunsoonthornkit and Panjakajornsak (2018) engaged in a study investigating the impact of organizational learning on both organizational commitment and performance outcomes. The findings of this investigation demonstrated that the learning organization positively influenced both organizational performance and commitment; however, no direct correlation between organizational commitment and performance was identified. Based on this inquiry, seven dimensions of learning within the organization—namely continuous learning, inquiry and dialogue, collaboration and teamwork, empowerment of employees, establishment of a systemic approach, engagement with the external environment, and strategic leadership—have been articulated. In order to align the human resources of the organization, it is imperative that professional learning occurs continuously through the establishment of a conducive organizational training environment (Gurbani Niti et al., 2020).

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In light of the aforementioned observations and considering that the scientific-applied university and higher education framework of the nation falls short of the scientific benchmarks established by fifth-generation universities, with its foundational infrastructure not being fully realized, it is crucial to acknowledge that the contribution of higher education to the economic, social, technological, and cultural dimensions of the country is pivotal; moreover, the specialized human resources required by society are predominantly cultivated through higher education institutions. In accordance with the elucidations provided, the researcher endeavors to address the inquiry: what are the dimensions of the organizational learning model pertinent in teachers of university of applied science and technology? Additionally, how are the dimensions of organizational learning prioritized among teachers of university of applied science and technology?

Material and Methods

This study is a exploratory mixed design (sequential exploratory mixed research design) that was conducted in two qualitative and quantitative stages. The statistical population of this research includes managers and vice-chancellors of Razavi Khorasan Scientific-Applied University, university professors and experts in the relevant field, considering the qualitative nature of the first part of the study, the purposeful sampling method was used (25 people). In the quantitative part, the dimensions and components were extracted in the form of a questionnaire from the interviews and distributed to the statistical population of lecturers of Razavi Khorasan Scientific and Applied University. The number of scientific-applied universities in Razavi Khorasan province is 55 and the number of their lecturers is 3680. According to Morgan's table, the number of sample was considered to be 351 people. Descriptive and inferential methods were used to analyze the data. In the descriptive part, the description of the studied population, the variables and the questions of the questionnaire were discussed by drawing a diagram and reporting frequency and percentage as well as central tendency and dispersion indicators. Delphi method was used in the qualitative part. In the inferential part, while examining the distribution of data using the Kolmogorov Smirnov test, the assumption of normality was made and appropriate statistical methods were used. Finally, structural equations modeling were used to examine the main research question and fit the model to the data. Excel, SPSS version 24 and PLS software were used to analyze data.

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Results

In the findings of the descriptive statistics of the qualitative part, it was found that the number of male participants in the expert group is 19 and female participants are 6. Of these, 7 people are between 31 and 40 years old, 9 people are between 41 and 50 years old, and 9 people are over 50 years old. In terms of education, 11 people have a master's degree and 14 people have a doctorate. Also, in the quantitative section, it was determined that the number of male participants is 239 and female 112. Of these, 165 people are under 40 years old, 137 people are between 41 and 45 years old, and 49 people are between 46 and 50 years old. In terms of education, 23 people have a bachelor's degree, 174 people have a master's degree, and 154 people have a doctorate.

First stage Delphi method

In the first stage of the Delphi project, the proposed components to measure the identification of the dimensions of the organizational learning model in the lecturers of the scientific-applied university were provided to the group of experts to give their opinion on the importance of the presence of the mentioned items to the researcher. The members of the expert group were asked to present their agreement and disagreement with these issues raised in the research model. In the following, those dimensions that had a positive score higher than 0.70 remained in the study and were included in the study for the second stage of Delphi.

Table 1. The rate of experts' agreement with each of the items

Dimension	Components	Agree		Disagree	
		F	%	F	%
Commitment	Normative commitment	19	76	6	24
	Continuous commitment	19	76	6	24
	Emotional commitment	19	76	6	24
	Management commitment	19	76	6	24
Continuous learning	Coherent learning opportunities	22	88	3	12
	Systemic thinking	25	100	0	0
	Learning space	25	100	0	0
	Competitiveness	25	100	0	0
	Trans organizational learning	25	100	0	0
	Team learning	22	88	3	12
Empowerment	Psychological empowerment	20	80	5	20
	Managerial empowerment	25	100	0	0
	Individual empowerment	25	100	0	0
	Continuous empowerment	25	100	0	0
	Organizational empowerment	22	88	3	12
Knowledge management	Educational knowledge	25	100	0	0
	Knowledge of human resources	25	100	0	0
	Organizational knowledge	25	100	0	0
	Educational knowledge	19	76	6	24

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Second stage of Delphi method

In the first stage of the study, the items were extracted from the review of the related texts. After the important dimensions required for the design of the model were determined from the point of view of the experts, all the dimensions were approved and with slight changes in order, they were placed in the second stage of the Delphi design, which was to examine the dimensions and the proposed components for each of the research variables should be discussed and the required dimensions should be planned and explained according to the opinions and views of the responding experts. In the second stage, a questionnaire with a 5-point Likert scale from very agree to very disagree was considered. Experts answered the questions. The results of these answers are shown in Table 2. All the mentioned components were confirmed and entered in the third stage of Delphi.

Table 2. The percentage of relative frequency of experts' opinions in the second stage of Delphi

Dimension	Components	Very agree	Agree	Moderate	Disagree	Very disagree	Mean	SD	Result
Commitment	Normative commitment	4	5	3	2	1	3.60	0.82	Accept
	Continuous commitment	5	3	1	1	5	3.13	1.04	Accept
	Emotional commitment	8	4	1	1	1	4.13	0.96	Accept
	Management commitment	7	3	2	1	2	3.80	0.71	Accept
Continuous learning	Coherent learning opportunities	6	3	1	2	3	3.46	0.82	Accept
	Systemic thinking	4	3	6	1	1	3.53	0.75	Accept
	Learning space	8	4	1	1	1	4.13	0.99	Accept
	Competitiveness	4	5	4	1	1	3.66	0.92	Accept
	Trans organizational learning	4	5	3	2	1	3.60	0.98	Accept
	Team learning	4	4	5	1	1	3.060	1.08	Accept
Empowerment	Psychological empowerment	6	5	2	1	1	3.93	0.91	Accept
	Managerial empowerment	5	4	4	2	0	3.80	0.96	Accept
	Individual empowerment	5	5	4	1	0	3.93	0.87	Accept
	Continuous empowerment	7	3	4	1	0	4.06	0.82	Accept
	Organizational empowerment	4	3	6	2	0	3.60	0.99	Accept
Knowledge management	Educational knowledge	8	4	1	1	1	4.13	0.99	Accept
	Knowledge of human resources	4	5	4	1	1	3.66	0.92	Accept
	Organizational knowledge	4	5	3	2	1	3.60	0.98	Accept
	Educational knowledge	4	4	5	1	1	3.60	1.08	Accept

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The third stage of Delphi

In order to check the validity, content validity has been used, to check the content validity quantitatively, two coefficients of the content validity ratio and the content validity index are used. To measure the content validity of the questionnaire, it was distributed among 25 experts. To calculate the content validity ratio, the questionnaire was divided into the content validity ratio section, and experts and informants scored the obtained components based on a three-point Likert scale (necessary - useful but unnecessary - unnecessary). Also, to calculate the content validity index of Waltz and Basel method, a quadruple questionnaire (not relevant - relatively relevant - relevant - completely relevant) was distributed, and the following results were obtained.

Table 3. Content validity of Delphi codes of the third stage based on criteria

	Dimension	N of items	Cronbach's alpha	CVR	CVI
Organizational learning	Commitment	8	0.798	0.815	0.897
	Continuous learning	13	0.849	0.799	0.932
	Empowerment	10	0.730	0.764	0.908
	Knowledge management	8	0.731	0.798	0.944

According to Table 3, Cronbach's alpha, content validity ratio and content validity index are more than 0.7, which indicates the validity and reliability of the questionnaire. For the approved components, 19 questions were designed in the form of a questionnaire and for the quantitative part, they were prepared, duplicated, completed, collected and analyzed by the statistical population. Based on this analysis, organizational learning has four dimensions. The factor analysis performed shows the amount of each factor and the value of T (table 4).

Table 4. Identification of dimensions of organizational learning

Dimensions	Factor loading	T value	P	Result
Commitment → organizational learning	0.520	13.805	0.001	Confirmed
Continuous learning → organizational learning	0.496	26.157	0.001	Confirmed
Empowerment → organizational learning	0.592	1.491	0.001	Confirmed
Knowledge management → organizational learning	0.506	5.205	0.001	Confirmed

The factor load shows the ability to measure the variable by the dimension, and the range of this coefficient is between 0 and 1. The closer this amount is to 1, the stronger the ability to measure. The T values between 1.96 and 2.57 indicate a significant effect with more than 95% confidence between the relevant variables. T values equal to and greater than 2.57 indicate a significant effect

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with more than 99% confidence between the relevant variables. According to the obtained results, all the identified dimensions have the ability to measure the variable of organizational learning.

Table 5. Prioritization of dimensions

Dimension	Factorial Loading	Squared Factorial Loading	Eigenvalue	Priority
Commitment	0.520	0.270	27 %	Second
Continuous learning	0.496	0.246	25 %	Fourth
Empowerment	0.592	0.350	35 %	First
Knowledge management	0.506	0.256	26 %	Third

Based on table 5, the dimensions of empowerment, commitment, knowledge management and continuous learning were placed in the first to fourth priorities.

Discussion

The findings derived from the investigation concerning the identification and prioritization of dimensions pertinent to organizational learning models among academic faculty in applied sciences suggest that organizational learning encompasses four primary dimensions (namely, commitment, continuous learning, empowerment, and knowledge management) alongside 19 distinct components. Furthermore, the dimensions of empowerment, commitment, knowledge management, and continuous learning were ranked in descending order of priority from first to fourth; this aligns with the studies conducted by Khunsoonthornkit and Panjakajornsak (2018), Sajjadi et al. (2019), Moon et al. (2017), Banerjee et al. (2017), Farhad et al. (2020), Poorkarimi et al. (2017) and Araei and Mohammadi Mehr (2022).

Upon scrutinizing the theoretical underpinnings of this research and the outcomes reported by other scholars, it becomes apparent that organizational leaders in the 21st century are actively seeking methodologies to enhance the organization's capacity to swiftly adapt to impending challenges. Given the unpredictable, uncertain, and high-pressure conditions prevalent in the business landscape, the organization’s proficiency in the realm of 'learning' may serve as the singular source of competitive advantage.

To cultivate the capacity for learning, he advocates for the evolution of organizations into learning organizations. The contemporary landscape, particularly within the organizational domain, is inherently unstable. We have observed transformations that are occurring not only at an accelerated pace relative to historical precedents but also in a discontinuous manner. Such changes

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are characterized by their non-continuity and lack of adherence to logical progression. In an era marked by discontinuous change, it is nearly inevitable that strategies which were effective in the past may prove entirely ineffective in the future. In the context of academic and specialized education, the higher education system, serving as the principal custodian of education and research, is pivotal in the cultivation and training of specialized and proficient personnel across nations; within this framework, the professional qualifications of educators hold significant importance.

This is attributable to the fact that possessing professional qualifications, alongside requisite competencies, skills, and abilities conducive to enhanced teaching and management, will invariably lead to improved performance (Guraya & Chen, 2019). It is important to note that a transformation in behavior does not necessarily manifest immediately following a learning experience. Although learning engenders the potential for alternative behaviors in the learner, this potential may not be immediately observable in their actions; thus, psychologists do not anticipate spontaneous behavioral changes, but rather a shift in the potential for future behavior.

Organizational learning refers to the inherent capacity or procedural frameworks within an organization that facilitate the sustenance or enhancement of organizational performance through experiential insights. In essence, organizational learning constitutes a collective endeavor of acquiring and generating competencies that fundamentally alter the management of variables and transform prevailing conditions (Rashman et al., 2009). For learning to be regarded as a salient category from a psychological perspective, there must exist some form of overt manifestation of learning observable in an individual's behavior. If an individual acquires knowledge but it does not manifest behaviorally due to its latent nature, how might a psychologist ascertain the occurrence of such learning? Psychologists can solely rely on behavioral observations to derive inferences regarding the individual's learning. In light of the research findings and the hierarchical prioritization of the dimensions and components of organizational learning as perceived by academic-applied university lecturers, it is recommended that management and administrative officials devise a framework to disseminate new information, knowledge, theories, and research to faculty members. Within this framework, professors would have the opportunity to familiarize themselves with contemporary theories, perspectives, and theoretical underpinnings upon their engagement with the system.

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Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

Author contributions

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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