

Dimensions of the Learning University in Confronting COVID 19 Pandemic Challenges: A Field Study in Saudi Public Universities from a Leadership Perspectives

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Abstract

The present study aims to investigate the relationship and predictability between the roles of leaders in Saudi public universities in consolidating the dimensions of learning organizations (universities) and their abilities in confronting COVID 19 pandemic challenges. A total of 228 leaders in three Saudi public universities took part in the current study. A questionnaire was designed for collecting data, which consisted of general data, The Dimensions of Learning Organization Questionnaire (DLOQ), and Confronting COVID 19 Pandemic Challenges Scale (CCPCS) developed by the researcher of this study. The results of the study showed a positive relationship between the roles of leaders in Saudi public universities in consolidating the dimensions of learning organizations (universities) and their abilities in confronting COVID 19 pandemic challenges, and that these roles of leaders are good predictors of these abilities. Results also indicate that there are no significant differences in both study scales across gender, age, academic qualifications, and years of work experience. It is recommended to increase the leaders' roles in the Saudi public universities in consolidating the dimensions of the learning organization, as this has an impact on their abilities in in confronting COVID 19 Pandemic challenges.

Keywords: learning university, COVID 19 pandemic, Saudi public universities, leadership perspectives

1. Introduction

Learning is one of the main pillars and blocks of ensuring the organizations' growth, continuity and success. In light of this age and the surrounding environmental changes, organizational learning has become an utmost necessity, and it is not an option available to many contemporary organizations of all shapes, sizes and types including universities. The close relationship between organizational learning and organizational performance, which was previously centered around the prevailing saying that "organizational performance is a product of yesterday's organizational learning" (Senge, 1990), has begun to take a new direction that requires an awareness of how to achieve high levels of integration and cooperation between the past and the present in light of future visions. This consolidates the spirit of organizational learning and has a positive reflection on performance (Kooli et al., 2019).

In this context, many contemporary organizations including universities have begun to work diligently to prepare leaders with an insightful view that works to consolidate the main dimensions and pillars of learning, and continuously strive to establish a culture of learning, in addition to work in rooting practices and applications that support organizational learning. Realizing the importance of moving towards the concept of learning organization, interest in the leadership roles has become one of the basic pillars of contemporary organizations as a tool to achieve this movement in a flexible and without any fundamental obstacles (García-Morales et al., 2012). This movement/transition requires a continuously expanding and deepening knowledge and transferring it to the organizational space in order to modify behavior and adapting to the surrounding dynamic environment. Believing in the pivotal role of leaders in building and consolidating the dimensions of learning organization, represents the main core of this movement/transition.

The emergence of the learning organization approach goes back to the nineties of the last century by the author Peter Senge, who believes that the organizational learning inherited in the concept of the learning organization

revolves around the ability of the organization to transform its expertise into knowledge that can be used to achieve organizational goals and objectives (Senge, 2006). Bearing in mind that there is a contrast between the concepts of the learning organization and organizational learning, where the learning organization is considered a form of organization which its efforts are focused on the learning process at all organizational levels (individual, group and institutional), and knowledge are possessed by individuals and organizational memory, while organizational learning is considered a group of activities that focus on giving learning to individuals, and knowledge are possessed by individuals (Rebelo, Loureco, & Dimas, 2019).

Today, accelerating in learning represents one of the most prominent competitive advantages of contemporary organizations (Tolsby, 2018). Through it, these organizations can achieve the required response to the environmental challenges and changes by expanding frameworks for the exchange and sharing of knowledge and perspectives to build new experiences (Garvin et al., 2008). Accordingly, organizational learning has become an important entry point in terms of enhancing and developing the learning process among individuals in organizations. Through organizational learning, the behavior of these individuals is modified, and they are provided with knowledge, capabilities and skills that are consistent with the strategic aspiration of the organization, and enable them to find solutions to the problems they face, in turns leading to effective performance (Starbuck, 2017).

The objective of study to investigate the relationship and predictability between the roles of leaders in Saudi public universities in consolidating the dimensions of learning organizations (universities) and their abilities in confronting COVID 19 pandemic challenges

2. Literature Review

2.1 Learning Organization: Concept and Dimensions

The concept of a learning organization is considered one of the most prominent modern one in the context of organizational development and human resource development (Song et al., 2009). The definitions of this concept varied among researchers and authors according to their difference in the philosophical orientation and the nature of experiences and specializations to which they belong. In light of his belief that learning can be enhanced with new knowledge, experiences and skills, Senge defines a learning organizations as “organizations where people continually expand their capacity to create the 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 to see the whole together” (Senge et al., 1990, p. 3). Watkins and Marsick (2003) and Nabil Messabia et al. (2021) view learning organization as one that continuously seeks to learn and move towards everything new by adopting an integrated strategy to work through participatory learning in order to improve the organization’s ability to innovate and grow. Garvin et al. (2008) believe that a learning organization is the place of knowledge creation, acquisition and transfer, and this can be achieved by providing three basic building blocks: the internal supportive environment for learning processes, concrete processes and practices indicative of learning, and reinforced leadership behaviors. The learning organization can also be viewed as the organization that is able to exploit personal skills, common vision, learning team, and systems of thinking to achieve organizational goals (Jacobs, 2012). Recently, Mastio, Chew, and Dovey, (2019, p. 291) view the learning organization as “an open, collaborative, social/economic actor engaged in social/economic activities with other interdependent actors (organizations or stakeholders) in a network to serve its mission/purpose”.

Through the above-mentioned definitions and views, the researcher can define the learning organization as an open organization that is able to develop future visions, organizational contexts, strategies and work activities by strengthening and supporting the processes of organizational learning based on creating, acquiring, transferring and sharing knowledge internally and externally in a manner based on a collective and participatory approach, as well as enhancing the capabilities of self-development.

There are many managerial approaches to identify the dimensions of the learning organization, and the following are the most prominent of these approaches:

First: System Approach: this approach is based on the idea of a holistic view of the organization and its interactions and responses to the internal and external environment. Among the most prominent pioneers of this approach is Peter Senge, who believed that organizations should have the ability of adaptation to the environment by creating future alternatives and shared visions in order to survive, continue, and achieve high degrees of harmony and coordination of efforts (Senge, 2006). Senge has identified five dimensions of the learning organization as a constructive reality based on the systemic view. These dimensions are (Senge, 2006):

a) Personal Mastery: this dimension represents a set of specific principles and practices that enable individuals

- to learn, create their personal visions, and consider objectively and purposefully the issues they encounter.
- b) **Mental Models:** these models relate to how organizations think about the surrounding phenomena, examine them accurately and to learn from them later.
 - c) **Building a Shared Vision:** this dimension contributes in creating common future perceptions for the pillars of the organization, which in turns enhancing the commitment of organization's members.
 - d) **Team learning:** this dimension can be achieved by strengthening the areas of dialogue between work team members and work groups, and thus expanding areas of mutual thinking between them.
 - e) **Systems Thinking:** this type of thinking requires expanding the learning frameworks to include the entire organization instead of limiting these frameworks to individual learning.

Second: Learning Approach: In light of this approach, the learning organization was viewed as an organization that facilitates the learning process for all its members and strives continuously to achieve its strategic objectives through desired change and transformation processes (Tolsby, 2018). Pedler et al. (1996) have identified eleven basic pillars/dimensions that must be available in learning organizations, namely: learning through building strategies, participatory decision-making processes, a shared and accessible information system, transparent questioning and oversight systems, internal information exchanges, flexible reward systems, and organizational structures supportive of learning, environmental scanning through specialized groups, organizational learning, building an organizational climate supportive of learning, and establishing of self-development.

Third: Strategic Approach: in this approach, the importance of learning organizations' awareness of the drivers and the internal strategic factors needed to build learning capabilities was emphasized. Accordingly, Garvin et al. (1993) emphasize the importance of creating, acquiring and transferring knowledge obtained organizationally, and modifying behavior in accordance with this knowledge. In light of this approach, Goh (1998) identifies five basic strategic building blocks for a learning organization. These blocks are: clarity and support for the organization's mission and vision, committed leadership of a participatory nature, an organizational culture that supports learning through experimentation, the ability to transfer knowledge across organizational boundaries and divisions, and team building and encouraging cooperation. For these five building blocks to succeed there must be an appropriate design within the organization that supports these blocks, and leaders having the skills and capabilities to carry out the roles and tasks that fulfill these building blocks efficiently and effectively (Goh, 1998).

Fourth: Integrative Approach: this approach was developed by Watkins and Marsick (2003) on the basis that learning is a continuous and transformative process. They consider that the learning organization tries for making its learning rate to be equal or greater than the rate of change in the surrounding environment, and for building a continuous learning to respond to the changes in the environment, as continuous learning is more extensive than the formal learning system in ensuring the development and continuation of organizational capabilities.

In light of this approach, learning is considered the real tool for creating and managing knowledge, which ultimately contributes to building intellectual capital and creating values (Mastio et al., 2019). Watkins and Marsick (2003) present a constructive framework for a learning organization based on two basic organizational components: individuals and organizational structure, which are viewed as the basis for change and organizational development efforts. In light of this framework, a learning organization has seven main dimensions as follow (Watkins & Marsick, 2003):

- a) **Continuous Learning:** this dimension includes the efforts made by the organization to provide continuous learning opportunities for all members while performing their works.
- b) **Inquiry and Dialogue:** this dimension refers to the organization's efforts to build a culture of dialogue, inquiry, feedback and experimentation, which contributes in developing the capabilities and skills of the organization's members on interpretation, reasoning and expression of views, and in enhancing their abilities to listen to and discuss the views of the other.
- c) **Team Learning:** this dimension reflects the spirit of cooperation and complementary skills that support each other as a basis for effective use of work teams. In addition, work is designed on the principle of work teams, and cooperation is encouraged by supported organizational culture so that team members learn from each other.
- d) **Empowerment:** this dimension defines the organizational processes that aim to create a common collective vision, and allowing members of the organization to formulate and implement this vision and obtain feedback about the gap between the current situation and the new vision.

- e) **Embedded Systems:** this includes developing and maintaining systems to increase organization members' participation in the learning process, enhancing them and their integration with work requirements, and allowing these members to access these systems with various technologies.
- f) **System Connections:** this dimension reflects the analysis of the internal and external environment elements and factors that have a direct and indirect impact on the organization. It also focuses on the individuals' understanding of this analysis and the use of information related to it to control work practices, so that individuals can understand the impact of these elements and factors on tasks they performed and on the organization as a whole.
- g) **Strategic Leadership:** this dimension shows the extent to which the leaders of the organization use learning in a strategic manner to achieve the desired outcomes and the required change, through their adoption of strategic thinking, all in the context of supporting the learning process through their behaviors as a model to be emulated by others.

In light of these dimensions, Watkins and Marsick (2003) developed the so-called "The Dimensions of Learning Organization Questionnaire" (DLOQ), which represents a tool for measuring the learning dimensions in the context of learning organizations, and in a way that integrates organizational personnel into organizational structures to support continuous learning processes and change. This gives this questionnaire universal acceptance and wide use among researchers. It contains (21) items to measure the dimensions of the learning organization. This scale has achieved high validity and reliability in studies conducted in the Western (Fry & Griswold, 2003; Song et al., 2009; Wang, 2017) and Arab environment (Alzahrani, 2014; Radaideh, 2016; Essa, 2018).

In spite of the multiplicity of the definitions of learning organizations and the approaches to identify their dimensions, it is noticed that they are based on the fact that organizations are organic units such as individuals with the ability to learn. The holistic collective thinking, the systemic view, and the intensification of the efforts of individuals and their learning capabilities are among the basic pillars of success in the context of the learning organizations. However, all of these basic pillars are supposed to be under the umbrella of an organizational leadership and culture in order to support the concepts and applications of learning teams and knowledge management (Mastio et al., 2019).

2.2 Learning Organization and Leadership

The radical changes that have taken place in the various environmental and organizational conditions in the past recent years have made organizations aware of the importance of the availability of various leadership capabilities. This due to the great importance of this in terms of designing systems, organizational structures and social networks aimed at building the dimensions of the learning organization. In the absence of conscious leadership with a participatory style and the limitations of its distinct management skills, the application of the dimensions of a learning organization becomes elusive (Marquardt, 2002; Nafei et al., 2012). Accordingly, the researcher of the present study views that leadership is an important component on which the various dimensions of learning organizations rely on, as leadership is the main pillar for drawing the correct mechanisms to facilitate the process of continuous learning for individuals and work teams, as well as preparing the infrastructure that helps individuals and work teams to work through its nature that based on influencing others to reach a specific goal.

Because of the increased focus on change processes, development of behavior and thinking patterns, and building a common vision, the concepts of leadership based on direction have become insufficient to ensure the consistency in achieving the organization's goals and strategies, which are among the most important outcomes of applying the concept of a learning organization. Many researchers believe that the appropriate leadership concept in the context of learning organizations must be based on two main issues (Piccolo & Colquitt, 2006): the first is the ability to achieve consistency between the goals of the work teams and the goals of the organization, and the consistency between the goals and aspirations of individuals and the goals of the organization; and the *second* is based on the leader's role in achieving the processes of change and continuous development. Senge (2006) has indicated that leaders are the real tool for moving organizations from the traditional form to becoming learning organizations. In this context, he identified three roles for the leader in the context of building a learning organization, and these roles are (Senge, 2006): *leader as designer*, *leader as teacher*, and *leader as mentor*. Later, Marquardt (2002) has expanded these roles to become seven main roles, which the leader must possess in the twenty-first century in order to achieve the organization's goals and objectives.

From a managerial perspective, the concept of crisis has been addressed by many authors and researchers in the

field of crises. Organizational crisis describes an unusual situation that goes out of control (Anheier, 1999), leads to a halt or decline in the movement of work to an unusual degree (Coombs, 2012), and threatens the achievement of organization's goals (Antonacopoulou & Sheaffer, 2013). Most crises are typified by a high uncertainty, interaction, and complexity. Moreover, surprise, threat, and tight and limited time represent the basic features of crisis (Bobyleva & Sidorova, 2015). However, managing the organization randomly, conflict between the different parties in it, human staff mistakes and shortcomings, and lack of appropriate assessment and understanding of the situation represent the main causes of crisis (Coombs, 2012).

The importance of adopting the dimensions of the learning organization in crisis time stems from the following facts:

- Learning organization is the form of organization that allows thinking in a creative manner, and has a trend of openness to the external environment more efficiently. Moreover, learning organization leads to organizational development since it uses learning based knowledge as the basis for the growth and survival of the organization and facing crises (Wang, 2017).
- Learning from past experiences, reviewing the past with its successes and failures, learning from others, searching for new ideas, encouraging participation in decision-making, policy development, and collective review of work plan as features of learning organization will enhance organizations' response to crisis (Kooli & Abadli, 2021).
- Encouraging creative activities in analyzing problems, finding solutions to these problems through continuous collection of data from the environment, processing these data and coming out with statistical inferences as a features of learning organization will also enhance organizations' response to crisis (Reese, 2020).

Today, higher education in the world is facing a COVID 19 crisis that has not been seen before, and many experts expect that this crisis will lead to a qualitative and quantitative leap in education, which will completely change its future. The impact of the 2019-2021 COVID 19 pandemic has affected educational systems around the world, leading to widespread school and university closures (Kooli, 2021). On March 16, 2020, governments in 73 countries announced school closures, including 56 countries shutting schools across the country and 17 countries closing schools within a specified range (UNESCO, 2020a). The nationwide school closure affected more than 421 million learners globally, while the limited school closure put 577 million learners at risk. According to data released by UNESCO on March 10, 2020, the closure of schools and universities due to the spread of the Covid-19 virus has left one in five students out of school globally.

School and university closures have major negative impacts on low-income families who have less access to technology, the Internet (Kooli, 2021), food, and childcare services, as well as for students with disabilities. Even when university closures are temporary, they have huge social and economic costs (Kooli, 2021). The disruptions caused by the closure affect all classes of societies, but its impact, which includes learning interruption, malnutrition, childcare problems, and the consequent economic cost to families that cannot work, is more severe for disadvantaged children and their families. The university provides an essential learning opportunity, and when universities close, students are denied opportunities to grow and develop. This deprivation is more harmful to less fortunate learners who have fewer educational opportunities outside of university (Baburajan, 2021). In addition, when universities close, students are often asked to use e-learning at home, and they may struggle to perform the task. This is especially true for students with limited education and resources. Lack of access to technology or a good internet connection is an obstacle to e-learning, especially for students from disadvantaged families (Kooli, 2021).

Universities are the centers of social activity and human interaction. When universities close, many students lack the social connection necessary for learning and development. In addition, this closure and depending on e-learning may affect the intended learning outcomes in the coming future. After universities viewed e-learning as a kind of aid in education, and other institutions viewed it as a luxury and a kind of increase in educational options for those wishing to provide an education or training, today it has become a necessity, and a means to enable hundreds of millions of students to learn after they lost the opportunity to go to educational institutions. In addition, managerial and administrative works have been changed in light COVID 19 crisis, as it needed to be performed to work remotely and with flexible working hours systems that reduce attendance rates (Maqsood et al., 2021).

Nowadays, universities need to respond effectively and efficiently to the challenges imposed by Coronavirus. In confronting COVID 19 pandemic challenges, UNESCO recommended the followings actions (UNESCO, 2020b):

- 1) Examining the degree of readiness and choose the most appropriate tools: this requires making decision using high-tech or simple technology solutions based on the reliability of local energy sources, internet connectivity and the computer skills of teachers and students. This also can be coordinated through the use of integrated digital learning platforms, video lessons, massive open online courses, and broadcasting via radio and television.
- 2) Ensuring the inclusion of distance learning programs: this requires the implementation measures to ensure that students, including those with disabilities or from low-income backgrounds, have access to distance learning programs, if only a limited number of them have access to digital devices. Consider the temporary transfer of these devices from computer labs to families and support their Internet connection.
- 3) Protecting data privacy and data security: by assessing data security when uploading educational resources to the Internet, as well as when sharing them with other organizations or individuals. This also requires checking for apps and platforms that don't violate students' data privacy.
- 4) Prioritizing solutions to psychological and social challenges before teaching: this can be accomplished by gathering available tools to connect universities, parents, teachers, and students together, and forming groups to ensure regular human interactions, enabling social welfare measures, and addressing potential psychosocial challenges that students may face when isolated.
- 5) Scheduling course planning for distance learning programs: by organizing discussions with stakeholders to examine the potential duration of universities' closures and determine whether the distance learning program should focus on teaching new knowledge or enhancing students' knowledge of previous lessons. Taken into consideration that schedule planning is depending on the condition of the affected areas, the level of studies, the needs of the students, and the availability of the parents. Choosing appropriate learning methodologies based on universities' closures and home quarantines, and avoiding learning methodologies that require face-to-face communication must be taken into consideration.

Nakpodia (2009) study aimed to determine the appropriate mechanisms for making universities learning organizations through its review of many relevant previous studies. This study concluded that the concept of a learning organization has become an important managerial philosophy that universities must adopt and practice its dimensions to respond effectively and efficiently to crisis. The researcher concludes that this form of organization represents the unique organizational form that is able to unleash the intellectual and mental energies of individuals to achieve organizational results and goals. The researcher believes that universities can move to the concept of learning organizations by adopting methods and mechanisms, most notably: group learning, common collective vision, systemic thinking, and strengthening incentive and reward systems.

Radaideh (2016) study aimed to identify the impact of learning organization on crisis management in hospitals located in Jordan (N=33). The researcher used a questionnaire as a tool for collecting data. The results showed that there is a significant impact of learning organization on crises management phases (exploring the crisis; prepare the crisis; contain the crisis; restore the activity and balance and learning from crisis). Wang (2017) study aimed to explore how organizational learning contributes to effective crisis management through its review of many relevant previous studies. This study concluded that there is a positive impact of learning organization on effective crisis management.

In his study, Essa (2018) aimed to test the impact of learning organization dimensions on crisis management in Jordan Phosphate Mines Company as a case study. A questionnaire was used as a tool for collecting data in this study. The results showed that there is a significant impact of learning organization represented by (shared vision, mental models, and systems thinking) on crisis management in the Jordan Phosphate Mines Company. Abouraiia (2018) study investigated the influence of organizational learning on crisis management in airline industry in the United Arab Emirates. This qualitative analysis study with airline managers and through supplementary information showed that airlines that adopt organizational learning have a good opportunity to manage their crisis effectively and efficiently.

From the above-mentioned previous studies, the current study assumes that the ability of organizations, including universities, to respond effectively to COVID 19 crisis challenges depends mainly on the extent to which they adopt the dimensions of the learning organization. As some previous studies showed a positive impact of these dimensions on the organization's ability to respond to the crises it faces, and inspired by the extant literature, the researcher in the present study hypothesized that:

“The level of leadership roles in Saudi public universities in consolidating the dimensions of learning organizations is a good predictor of their abilities in confronting COVID 19 Pandemic challenges.”

In light of the rapid developments witnessed by the higher education sector in the Arab world in general and in the Kingdom of Saudi Arabia in particular, represented by the expansion of the establishing of universities, the increase in the number of students, the emergence of new patterns of learning, in addition to the requirements for academic accreditation and the improvement of educational service, the need for adopting the dimensions of learning organizations has become essential requirement at present. Today, the whole world is facing COVID 19 pandemic which has imposed many challenges for all organizations, including universities. This pandemic requires having leaders who are able cope with its challenges. Accordingly, this study comes to shed light on the roles of leaders in Saudi public universities in building learning organization as an approach to confront COVID 19 pandemic effectively and efficiently.

The importance of this study stems from its dealing with the approach of learning organizations in Saudi universities as one of the important modern one for confronting current and future crises such as COVID 19 pandemic. As the Kingdom of Saudi Arabia is witnessing radical and accelerating transformations represented by their leaders' efforts in embodying the concept of knowledge economy and in facing the challenges of COVID 19 pandemic, it has become important to explore the role-played by leaders in public universities in Saudi Arabia in the field of consolidating the dimensions of learning organizations (universities). The importance of this study also stems from the lack of field research on the approach of learning organizations in the context of the Saudi sectors, especially the higher education one. It is noted that this type of studies is concentrated in the Western environment, with scarcity in the context of the Arab environment, including Saudi Arabia. This misses the opportunity to benefit from this pioneering approach in Western environments in the Arab environment, including Saudi Arabia. Accordingly, it is hoped for this study to fill this research gap, and to direct the attention of decision-makers in Saudi public universities towards the importance of this approach, especially in light of the challenges these universities face from COVID 19 pandemic. This study seeks to achieve the following objectives:

- 1) Examine the role of leaders in Saudi public universities in consolidating the dimensions of learning organizations (universities).
- 2) Examine the abilities of Saudi public universities in confronting COVID 19 pandemic challenges.
- 3) Investigate the relationship and predictability between the roles of leaders in Saudi public universities in consolidating the dimensions of learning organizations (universities) and their abilities in confronting COVID 19 pandemic challenges.
- 4) Identify the effect of some variables (gender, age, academic qualifications, and years of work experience) on the leaders' roles in consolidating the dimensions of learning organizations in the Saudi public universities, and on the abilities of these universities in confronting COVID 19 pandemic challenges.

3. Method

3.1 Population and Sample Study

This study conducted on July 2019 and the study population consisted of three of the largest Saudi public universities located in the city of Riyadh. This choice of these universities is due to its geographical proximity to the researcher, its accessibility in light of the available resources and also its willingness to cooperate with the researcher. These three universities are also considered among the largest public universities in size in terms of the number of employees (the number is not less than 4000 employees). The unit of analysis in this study included leaders of the second and third levels (deans, heads of departments and organizational units) in these three universities. The researcher distributed the study questionnaire to all leaders of the study population through the e-mail available in the universities, in addition to making a manual distribution of the questionnaire due to the lack of responses received through e-mail distribution. In this context, the researcher contacted the relevant authorities in these universities, which in turn distributed them to all their targeted leaders. The number of retrieved questionnaires, valid for analysis, reached (228), with a recall rate of (68%). The results indicated that the percentage of males in the study sample was (73.2%), and the percentage of the study sample whose ages fall in the age group (from 25 years to 35 years) was (37.4%), while this percentage was (31.4%) for the age group (from 36 years to 45 years), however, the percentages of the age group (less than 25 years) and the age group (over 45 years) were (14.2%) and (17%) respectively. The results also indicated that (58.8%) of the surveyed leaders have a higher studies degree, whereas, the percentage of leaders who hold a bachelor's is (37.4%). As for the leaders who holding diploma, their percentage is (3.8%). 54.4% of surveyed leaders have more than 10 years of work experience. The percentage of leaders who have (5-10) years of work experience in the current position is (25.9%). Also, (19.7%) of the surveyed leaders have less than (5 years) of work experience.

3.2 Study Instrument

The current study used a questionnaire as the main tool for collecting primary data, including three sections. The first section contains general information of the study sample (gender, age, academic qualifications and years of work experience). The second section includes the role of leadership in consolidating the dimensions of learning organizations, based on the Marsick and Watkins (2003) model of (The Dimensions of Learning Organization Questionnaire (DLOQ)), which consists of seven dimensions, namely: *Continuous Learning, Inquiry and Dialogue, Team Learning, Empowerment, Embedded Systems, System Connections, and Strategic Leadership*. Each dimension has 3 items of measurement. A five-point Likert scale ranging from 1 for “strongly disagree” to 5 for “strongly agree” was used to measure the level of leadership role in Saudi public universities in consolidating the dimensions of learning organizations. Moreover, the third section of a study questionnaire consists of a developed scale by the present study researcher to assess the abilities of university in confronting the challenges of COVID 19 pandemic (Confronting COVID 19 Pandemic challenges Scale (CCPCS)). This scale contains 10 items based on the 10 recommendations UNESCO (UNESCO, 2020b) and presented in the theoretical framework of this current study. A five-point Likert scale ranging from 1 for “very low” to 5 for “very high” was used to measure these items.

The DLOQ was translated into the Arabic language by the researcher, and back translated into English language by three bilingual professors working at local university. For semantic evaluation, the researcher, with the help of four specialists in developing self-administrated instruments, compared the translated and back-translated versions of “DLOQ” and found that no item expression in “DLOQ” needed any modification. According to the opinions of a (5) full professors experts specialized in learning organization and crisis management in (3) Saudi universities, the translated version of “DLOQ” has no linguistic difficulties, cultural and psychological risks, and both theoretical and practical understanding biases. Other important aspects such as the structure, layout, instrument instructions, and both the scope and adequacy of expressions contained in the items were evaluated by those experts. No comments or modifications were needed to be implemented. In addition, a pilot sample of 30 leaders, from outside the original study sample was used to examine the appropriateness of the instrument of the present study regarding their languages, meaning and difficulty, in addition to instrument instructions. In light of their assessments, the items of both study scales are quite simple, easy to understand and have no linguistic difficulties or cultural risks.

The validity and reliability of the “DLOQ” were found to be acceptable in a variety of similar samples (see Leufvén et al., 2015). In the present study, a pilot sample of 30 leaders, from outside the original study sample was used to examine the temporal stability of the “DLOQ” and the “CCPCS” (test-retest reliability). These leaders answered both scales in two-time frame, separated by four weeks. Then, the Person correlation coefficient between the two-time frame was calculated. Results indicated that both study scales demonstrated acceptable test-retest reliability ($r_{DLOQ}=0.89$; $r_{CCPCS}=0.92$). Moreover, all items for each scale showed item-total correlation scores above 0.50, the acceptable limit identified by Nunnally (1978). Therefore, no item has been dropped from the data. In addition, the Cronbach alpha coefficient (α) for the “DLOQ” and “CCPCS” were 0.92 and 0.94 respectively which were above 0.70, the reasonable threshold identified by Nunnally (1978), suggesting that the items of “DLOQ” and “CCPCS” have adequate internal consistencies. In addition, the principal component analysis and varimax rotation method was performed on the 21-item study “DLOQ”. The results showed that the seven-factor structure of the questionnaire was confirmed with a good Sampling Adequacy (KMO) that was above 0.90. However, all the 21 items loaded significantly on its dimensions indicating that the convergent validity was satisfied. Together, all seven factors explain approximately 96% of the variation in the data. However, since “CCPCS” is a one-dimensional scale, total score of this scale was used.

4. Results

4.1 Descriptive Statistics

Table 1. Descriptive statistics for the study scales

Scale-Dimension	Mean	Std. Deviation
Continuous Learning	3.75	0.87
Inquiry and Dialogue	3.59	0.92
Team Learning	3.19	0.79
Empowerment	3.09	0.77
Embedded Systems	3.12	0.82
System Connections	3.47	0.91
Strategic Leadership	2.68	0.88
<i>Overall Dimensions of Learning Organization "DLOQ"</i>	3.37	0.71
<i>Confronting the COVID 19 Pandemic challenges (CCPCS)</i>	3.26	0.73

As shown in Table 1, the level of the leaders' role in consolidating the dimensions of learning organizations in the surveyed universities was slightly moderate ($M=3.37$). However, the results showed that the abilities of surveyed universities in confronting COVID 19 Pandemic challenges were also slightly moderate ($M=3.26$).

4.2 Differences in Study Scales across Some Variables

The skewness and kurtosis for study dimensions were examined. The results showed that there were no values greater than an absolute value of one, suggesting reasonably normal distributions. Gender, age, academic qualifications, and years of work experience differences were examined using t-test and an ANOVA on the respective study scales. Tables 2, 3, 4, and 5 present the findings of these differences.

Table 2. Differences in study scales across gender

Scale	Males (n=167)	Females (n=61)	<i>t</i>	<i>p</i>
	Mean \pm SD	Mean \pm SD		
<i>Overall Dimensions of Learning Organization "DLOQ"</i>	3.45 \pm 0.73	3.14 \pm 0.81	2.624	0.097
<i>Confronting COVID 19 Pandemic challenges (CCPCS)</i>	3.27 \pm 0.81	3.24 \pm 0.74	2.425	0.089

** $p \leq 0.01$; * $p \leq 0.05$.

Table 3. Differences in study scales across age

Scale	Less than 25 years (n=32)	25-35 years (n=85)	36-45 years (n=72)	Above 45 years (n=39)	<i>f</i>	<i>p</i>
	Mean \pm SD	Mean \pm SD	Mean \pm SD	Mean \pm SD		
<i>Overall Dimensions of Learning Organization "DLOQ"</i>	3.41 \pm 0.88	3.45 \pm 0.71	3.28 \pm 0.79	3.35 \pm 0.79	0.662	0.576
<i>Confronting COVID 19 Pandemic challenges (CCPCS)</i>	3.21 \pm 0.72	3.31 \pm 0.74	3.27 \pm 0.87	3.19 \pm 0.79	0.262	0.853

** $p \leq 0.01$; * $p \leq 0.05$.

Table 4. Differences in study scales across academic qualifications

Scale	Diploma (n=9)	Bachelor (n=85)	Higher Studies (n=134)	<i>f</i>	<i>p</i>
	Mean \pm SD	Mean \pm SD	Mean \pm SD		
<i>Overall Dimensions of Learning Organization "DLOQ"</i>	3.38 \pm 0.88	3.42 \pm 0.71	3.38 \pm 0.69	0.086	0.918
<i>Confronting COVID 19 Pandemic challenges (CCPCS)</i>	3.18 \pm 0.72	3.31 \pm 0.74	3.24 \pm 0.84	0.250	0.779

** $p \leq 0.01$; * $p \leq 0.05$.

Table 5. Differences in study scales across years of work experience

Scale	Less than 5 years	5-10 years	Above 10 years	<i>f</i>	<i>p</i>
	(n=45) Mean ± SD	(n=59) Mean ± SD	(n=124) Mean ± SD		
Overall Dimensions of Learning Organization "DLOQ"	3.41 ± 0.68	3.33 ± 0.85	3.38 ± 0.79	0.143	0.867
Confronting COVID 19 Pandemic challenges (CCPCS)	3.25 ± 0.82	3.39 ± 0.76	3.3.21 ± 0.84	0.981	0.376

** $p \leq 0.01$; * $p \leq 0.05$.

The results shown in Tables 2, 3, 4, and 5 indicate that there are no significant differences in both study scales across gender, age, academic qualifications, and years of work experience ($p > 0.05$). These findings indicate that these 4 variables have no impact on the leaders' assessment of their roles in consolidating the overall dimensions of learning organizations in the surveyed universities, and on the abilities of the universities that work at in confronting COVID 19 Pandemic challenges.

4.3 Correlations and Predictability between Study Scales

Table 6. The correlations matrix for the study scales

Scale-Dimension	Correlation Coefficient						
	1	2	3	4	5	6	7
1. Continuous Learning	-						
2. Inquiry and Dialogue	0.63**	-					
3. Team Learning	0.54**	0.63**	-				
4. Empowerment	0.48**	0.62**	0.59**	-			
5. Embedded Systems	0.63**	0.67**	0.62**	0.56**	-		
6. System Connections	0.58**	0.65**	0.49**	0.49**	0.61**	-	
7. Strategic Leadership	0.63**	0.58**	0.58**	0.66**	0.63**	0.58**	-
8. Overall Dimensions of Learning Organization (DLOQ)	0.87**	0.79**	0.88**	0.86**	0.78**	0.83**	0.84**

** $p < 0.01$.

Table 6 shows that there is no multicollinearity between the Dimensions of Learning Organization (DLOQ), all values of correlation between these dimensions were below the cutoff value of .85, and ranged from 0.48 to 0.67. In addition, the correlation between each dimension and the total score of DLOQ was high and significant which indicate an acceptable internal consistency validity of the DLOQ.

The relationships between leaders' roles in consolidating the overall dimensions of learning organizations in the surveyed universities and the abilities of these universities in confronting COVID 19 Pandemic challenges were tested by performing Pearson product-moment correlation to determine whether the relationships were statistically significant. The results are presented in Table 7.

Table 7. The Correlations between the two study scales

<i>Dimensions of Learning Organization (DLOQ)</i>	<i>Confronting COVID 19 Pandemic Challenges (CCPC)</i>	
	<i>r</i>	<i>p</i>
Continuous Learning	0.73	0.0002**
Inquiry and Dialogue	0.74	0.0031**
Team Learning	0.72	0.0016**
Empowerment	0.78	0.0008**
Embedded Systems	0.84	0.0012**
System Connections	0.83	0.0041**
Strategic Leadership	0.88	0.0008**
<i>Total Scale (DLOQ)</i>	0.84	.0001**

** $p < 0.01$.

Table 7 shows that there is a strong and significant positive relationship between the leaders' roles in consolidating the overall dimensions of learning organizations in the surveyed universities and the abilities of these universities in confronting COVID 19 Pandemic challenges ($r=0.84$). It also shows that all dimensions of learning organization are strongly and positively related to the abilities of the universities in confronting COVID 19 Pandemic challenges: "Continuous Learning" ($r=0.73$); "Inquiry and Dialogue" ($r=0.74$); "Team Learning" ($r=0.72$); "Empowerment" ($r=0.78$); "Embedded Systems" ($r=0.84$); "System Connections" ($r=0.83$); and "Strategic Leadership" ($r=0.84$).

Besides, the present study tries to evaluate the degree to which the leaders' roles in consolidating the overall dimensions of learning organizations in the surveyed universities can uniquely predict the abilities of these universities in confronting COVID 19 Pandemic challenges. To accomplish this, a multiple regression analysis was performed in which the dimensions of learning organization were entered as the predictor variables and the abilities of universities in confronting COVID 19 Pandemic challenges scores on "CCPCS" were entered as the dependent variable to be predicted. Table 8 shows the results of the regression analysis.

Table 8. Regression coefficient – model summary of the two study scales

<i>Dimensions of Learning Organization (DLOQ)</i>	<i>Confronting the Coronavirus Pandemic Challenges (CCPC)</i>	
	β	t
Continuous Learning	0.55	4.421**
Inquiry and Dialogue	0.42	2.761**
Team Learning	0.58	3.311**
Empowerment	0.37	4.092**
Embedded Systems	0.33	4.264**
System Connections	0.49	5.424**
Strategic Leadership	0.63	6.241**
<i>Total Scale (DLOQ)</i>	0.67	11.231**

Note. $R^2=0.56$; $R^2_{adj}=0.53$; $F=18.89^{**}$; $\beta=0.56$; $t=9.87^{**}$; $**p \leq 0.01$.

It is evident from the results presented in Table 8 that the abilities of universities surveyed in confronting COVID 19 Pandemic challenges is predicted by the leaders' roles in consolidating the overall dimensions of learning organizations in these universities ($F=18.89$, $p=0.000$, $\beta=0.58$) and these abilities are significantly explained by 53% of the total variance in the mentioned leaders' roles. In the final analysis presented in Table 8, each predicative "DLOQ" dimension and its contribution to predictability of the above-mentioned abilities was analyzed. It was noted that all "DLOQ" dimensions significantly predicted the abilities of surveyed universities in confronting COVID 19 Pandemic challenges, and "Strategic Leadership" was the most significant predictor ($\beta = 0.63$, $p \leq 0.01$).

5. Discussion and Conclusions

The present study explored the relationship and predictability between the leaders' roles in consolidating the overall dimensions of learning organizations in Saudi public universities and the abilities of these universities in confronting COVID 19 Pandemic challenges. This study found that there is a high and significant relationship

between these two variables. Additionally, the results indicate that the leaders' roles in consolidating the overall dimensions of learning organizations in Saudi public universities are good predictors of the abilities of these universities in confronting COVID 19 Pandemic challenges. Therefore, the researcher can accept the study hypothesis that assumes *the level of leadership roles in Saudi public universities in consolidating the dimensions of learning organizations is a good predictor of their abilities in confronting COVID 19 Pandemic challenges*. This suggests that Saudi public universities who have a high level of leaders' roles in consolidating the overall dimensions of learning organizations are more capable of formulating high abilities in confronting COVID 19 Pandemic challenges than those who have a low level of these roles. A high level of leaders' roles in consolidating the overall dimensions of learning organizations in the surveyed universities can play a significant role in enhancing the abilities of these universities in examining the degree of readiness and choose the most appropriate tools, ensuring the inclusion of distance learning programs, protecting data privacy and data security, prioritizing solutions to psychological and social challenges before teaching, scheduling course planning for distance learning programs, supporting for teachers and parents on the use of digital tools, combining appropriate means and limiting the number of applications and platforms, setting distance learning rules and monitor student learning, determining the duration of distance learning units based on students "self-organization" skills, and forming groups and promoting communication. These results can be explained according to the importance that learning universities in enhancing their abilities to manage any crisis they face. In addition, learning university is constantly increasing its capacity and energy to shape the future; it is an organization with a philosophy that predicts change, prepares for it and responds to what it requires, in addition to that it seeks to acquire capabilities that enable it to deal with complexity and ambiguity. These features of learning university may explain the difference between surveyed universities in responding to challenges imposed by COVID 19 Pandemic.

These results are consistent with Nakpodia's (2009) beliefs that the concept of a learning organization has become an important managerial philosophy that universities must adopt and practice its dimensions to respond effectively and efficiently to manage crisis, since it is a unique organizational form that is able to unleash the intellectual and mental energies of leaders and employees to face crises. Moreover, many recent previous studies indicate that learning organization or university has a positive and significant impact on enhancing crisis management (Radaideh, 2016; Wang, 2017; Essa, 2018; Abouraia, 2018). The current study found the abilities of Saudi public universities in confronting COVID 19 Pandemic challenges can be significantly explained by 53% of the total variance in learning organization dimensions, and more specifically "Strategic Leadership". Strategic Leadership as proposed by Senge (2006) is the real tool for moving organizations from the traditional form to becoming learning organizations. As these leaders play their roles (*designer, teacher, and mentor*) in crisis time, they can create "Creative Tension" to manage the challenges forced by crisis. So, these leaders make a significant sharing of responsibilities with the members, empowering them to play and participate in leadership roles (such as decision-making, problem-solving and facing challenges) as learning organization is a product of empowerment processes (Senge, 2006). These practices play a crucial role in facing any type of crisis such as COVID 19 Pandemic since they enhance the ability of any organization to create any proposed change effectively and efficiently.

Results also indicate that there is a moderate level among leaders in the surveyed universities in consolidating the dimensions of the learning organization, which may limit the abilities of these universities in confronting COVID 19 Pandemic challenges. By comparing the results of using the same tool on international universities as reported in the European Consortium for the Learning Organization for the year 2019, we notice that there is a clear divergence between the levels of learning organization dimensions with their levels in the surveyed universities, approximately (-2.3 degree). This divergence may be attributed to the novelty of the concept of the learning organization and its practices in the Saudi environment in comparison with the Western environment. Results also indicate that there are no significant differences in both study scales across gender, age, academic qualifications, and years of work experience. In the absence of the impact of these variables on both study scales, the researcher concludes that all these variables did not affect the nature of the relationship and predictability between the leaders' roles in consolidating the overall dimensions of learning organizations in Saudi public universities are good predictors of the abilities of these universities in confronting COVID 19 Pandemic challenges.

No current literature on learning organization provides evidence for the influence of its role on managing the challenges of COVID 19 Pandemic. The current study provides supportive evidence in such an area of concern, mainly in the leaders' role in consolidating the overall dimensions of learning organizations in university settings which can enhance our understanding about this topic in such setting. The researcher suggests that public universities with high levels of leaders' role in consolidating the overall dimensions of learning organizations

may be able to respond effectively and efficiently to challenges imposed by COVID 19 Pandemic.

This study is not free of limitations; it is limited to three Saudi public universities located in Riyadh, and it does not include all public and private universities in the Kingdom, and thus it is difficult to generalize the results of the study to all Saudi public universities. In addition, the lack of previous studies that directly examined the subject of the study makes difficult to verify the external validity of the current study results. Further research is required to examine the relationship and predictability between both study scales within a wide range of Saudi universities' contexts. Moreover, future research can address the most prominent obstacles that limit the role of leaders in Saudi universities in the field of practicing the dimensions related to the learning organization, as well as working on building a model concept about how to activate the role of leaders in these universities in adopting the approach of learning organizations.

Finally, the findings of this study may help Saudi public universities to realize the importance of their leaders' roles in consolidating the overall dimensions of learning organizations in Saudi public universities in enhancing their abilities in confronting COVID 19 Pandemic challenges. It is recommended to increase the level among leaders in the Saudi public universities in consolidating the dimensions of the learning organization, as this has an impact on their abilities in in confronting COVID 19 Pandemic challenges. In addition, it is a necessity for the Saudi public universities to develop a comprehensive strategy to adopt the dimensions of the learning organization that takes into account the strategic, organizational and cultural aspects of this form of organization, taking into account the need to make the transformation into dimensions of the learning organization as a strategic goal of high priority with the existence of mechanisms to measure the gap between current performance and expected one. However, working to establish a database or specialized center at the level of the Kingdom of Saudi Arabia concerned with monitoring the dimensions of learning organizations in Saudi universities, similar to both the European Union of Learning Organizations and its counterpart, The Society for Organizational Learning in the United States of America represents an urgent necessity.

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