Iranian Journal of Educational Sociology

Iranian journal of educational Sociology

http://www.injoeas.com/
(Interdisciplinary Journal of Education)
Available online at: http://www.iase-idje.ir/
Volume 5, Number 2, September 2022

Designing a Quantum Leadership Model in Secondary Schools Based on Grounded Theory

Maria Delgarm[1], Hamid Shafizadeh[2*], Nader Soleimani[3]

1. PhD Student, Department of Educational Management, Garmsar Branch, Islamic Azad University, Garmsar, Iran.
2. Associate Professor, Department of Educational Management, Garmsar Branch, Islamic Azad University, Garmsar, Iran.
3. Associate Professor, Department of Educational Management, Garmsar Branch, Islamic Azad University, Garmsar, Iran.

Article history:
Received date: 2022/03/02
Review date: 2022/04/10
Accepted date: 2022/04/26

Keywords:
Quantum Leadership, Secondary Schools, Grounded Theory

Abstract

Purpose: Considering the role of quantum leadership in improving the performance and effectiveness of organizations, the aim of the current research was to design a quantum leadership model in secondary schools based on grounded theory.

Methodology: This was an applied qualitative study and its population included experts and principals of the educational system of Iran in 2020. A total of 20 people were selected using snowball sampling. The data collection tool included a semi-structured interview, the validity of which was confirmed by the review of participants and the review of non-participating experts, and its reliability was obtained 0.83 by calculating the inter-coder agreement. The data were analyzed by the coding method based on the grounded theory in MAXQDA software.

Findings: The results showed that the quantum leadership model in secondary schools consisted of 45 concepts in 8 components and 6 categories. The category of causal conditions included two components of building quantum trust and agreement and quantum thought. The category of background conditions included one component of quantum development platform. The category of intervention conditions included one component of positive and negative interveners. The core category included a component of quantum school, the category of strategies included two components of quantum leadership and quantum creativity, and the category of outcomes included a component of quantum learning. Finally, the quantum leadership model in secondary schools was designed based on the grounded theory.

Conclusion: According to the quantum leadership model in secondary schools and based on the experts and principals of the education system of Iran, it seems necessary to plan to improve the status of schools by improving the identified concepts and components.

Please cite this article as: Delgarm M, Shafizadeh H, Soleimani N. (2022), Designing a Quantum Leadership Model in Secondary Schools Based on Grounded Theory, **Iranian Journal of Educational Sociology.** 5(2): 12-21.

* Corresponding Author Email: shafizadeh11@gmail.com

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

1. Introduction

Attention Physicists presented a branch of physics called quantum mechanics in the 1920s, and quantum theory is now used not only in physics, but also in management and leadership. The success of organizations depends on the correct and efficient leadership that relies on influencing, guiding, directing and streamlining the activities of the organization and believing and trusting the employees, since an effective leader can guide the process of moving from the current state to the desired state and make appropriate decisions for a better future at any moment (Dargahi, Mehrani and Partovi Shayan, 2017). Organizations are now faced with new changes and developments that require creative adaptation and anticipation of future changes and developments to adapt to them, the realization of which requires a special type of leadership called quantum leadership (Wan Geok & Bilal Ali, 2021). Leadership refers to the ability to influence people and employees, as well as an effort to influence people or groups without exerting power over them (Franklin, Montgomery, Dorr and Trandel, 2020). Quantum means a mechanical motion of a particle, based on which all parts of the world, including humans, are dynamic, conscious and interconnected beings. Quantum theory, in stark contrast to traditional management and leadership beliefs, states that the world is not only unpredictable, but that there is not even enough information to understand its current state. Quantum theory is based on the belief that all things are connected and that the connection between things, elements and people is more important than themselves (Gefter et al., 2022). Quantum leadership emphasizes the free and continuous interaction between the leader and employees and the dynamics within the organization. This leadership style is considered a new framework and thought in management and leadership that seeks to increase previous skills and create new skills for organizational success (Curtin et al., 2011). This leadership seeks leadership, guidance and direction based on the future and leads the organization to the future state, and such leaders cultivate the leadership talent of followers and share leadership (Wan Geok and Shaari, 2020). Quantum leadership is a style of leadership in which there is trust, security, dynamic communication and learning between leaders and members, and this communication is more horizontal than vertical. The aforementioned leadership relies on non-hierarchical networks, influence depends on individual characteristics, and there are extensive connections between people (Watson, Porter-O'Grady, Horton-Deutsch and Malloch, 2018).

Leaders and principals are now aware of the fact that the only constant element of the present era is change and transformation, and many leaders know that stability in organizations is an old and obsolete idea, and controlling and predicting something will be futile and fruitless, accordingly (Hanine & Nita, 2019). Quantum leadership aims to increase the ability and effectiveness of principals and employees, which offers an open, creative and dynamic approach. This type of leadership, which is based on the best decision in complex situations, requires a variety of skills. In other words, leadership cannot be defined as influencing others to achieve specific goals, but it should be defined as a process that seeks a goal and moves in the direction to achieve its, which is more important and valuable than the realization of the goal itself (Khajepoor Sough, Sayed Ameri and Keshavarz, 2020). New sciences that are based on quantum physics and chaos theory have provided a conceptual basis for a new set of managerial skills, that is, a set of skills that enable principals not only to look at conflict from a new perspective, but also to respond to conflict differently, and these skills are called quantum skills (Norouzzadeh, Iranzadeh and Feghi Farahmand, 2020). Seven basic skills in quantum leadership include quantum vision, quantum thought, and quantum feeling as quantum psychological skills; quantum knowledge, quantum action, and quantum trust as quantum immaterial skills; and a quantum existence skill as quantum focal skill. These seven skills do not work independently, but in an integrated set of skills. The skill of quantum vision means the ability to consciously observe based on the assumption that reality is inherently subjective and that most of what happens in the outside world is subject to mental opinions, hypotheses and beliefs. Quantum thought skills mean the ability to think in a contrarian manner, and many major organizational issues are based on paradoxical questions that cannot be easily answered through rational decision-making processes. Quantum feeling skill means the ability to feel actively so as to increase the sense of coherence and the amount of energy, enthusiasm and vitality. The quantum knowledge skill means the use of decision-making processes and intuitive understanding. The quantum action skill means

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

acting according to the whole set in order to achieve useful goals for both oneself and the organization. The quantum trust skill means the ability to trust the natural processes of life, accept the necessity of chaos, and the inherent ability to self-organize at higher levels of coherence. The quantum existence skill means realizing that all relationships are wonderful learning opportunities and none of them happen without reason (Shelton & Darling, 2003). Quantum leaders seek to balance order and chaos in the management of information, human dynamics, differences, connections and background and external conditions, for which they have special capabilities and characteristics such as fluidity, dynamism and flexibility (Simbulan et al., 2011).

Quantum leadership is one of the concepts of leadership with a greater impact on learning, making it more effective and efficient, and it is considered a type of leadership that is able to provide energy and great impact on the members of the organization. Moreover, as an ability, quantum leadership can stimulate the natural capacity of humans and guide everyone to move towards common goals. This leadership method is related to the science of complexity and its purpose is to study all potential abilities and can create creative potentials through uncertainty (Shayani, Ghaffari, Khosravitanak and Ahang, 2020).

Although there have been researches on quantum leadership, there has been no research with the aim of designing a quantum leadership model in secondary schools, as well as identifying its components based on the grounded theory.The results of the most important researches about the design of the quantum leadership model are reported below.

Madahian, Roozbeh and Akramian (2021) in a research on quantum leadership theory in organizations concluded that for quantum leadership consisted of four categories that included the nature of quantum theory, the necessity of quantum leadership (factors of quantum leadership), the nature and characteristics of quantum leadership and how it affects the organization. They concluded that today's leaders and organizations now must abandon the mechanical view that sees the environment as simple and static and replace it with the quantum view, if they want to survive and progress in current changing world. Therefore, organizational leaders must cultivate new skills, which are called quantum skills. These skills help organizations in order to increase the ability of principals to manage the people of the organization, resolve conflicts, increase productivity, creativity and innovation, agility, and organizational excellence, organizational learning, etc., which are all signs of quantum leadership, and provide appropriate conditions for organizational success, development, and survival in today's complex and rapidly changing world.

Kamali Ardakani, Mohammadkhani and Jaafari (2020) in a research titled quantum leadership, the approach of future universities, identified 15 components in the form of 7 dimensions for quantum university leadership, which include the dimensions of quantum vision (opportunism, futurism and subjectivity), quantum life (teamwork and flexibility), quantum trust (self-organization and synergy), quantum feeling (enthusiasm and positivity), quantum action (systemic view and movement on the border of chaos), quantum thought (creative thought and search) and quantum knolwgdge (ambiguity and uncertainty and intuitive decision- making).

Bozorgi, Jahangir Fard and Sharifi (2020) conducted a research titled designing a quantum leadership model in Iran's public universities. They concluded that the quantum leadership model includes the components of quantum vision, quantum thought, quantum feeling, quantum knowledge, quantum action, quantum trust and quantum existence or life.

In a research on the presentation of the interpretive structural model of global leadership in the context of quantum leadership criticism Abdolhamid & Mohamadi (2018) concluded that the above model consisted of seven policies: anti-tyranny policy, generous policy, insightful policy, honor-oriented policy, identity-giving policy, endogenous policy and attractive policy.

Nazarpouri, Arefnejad and Shariatnejad (2017) conducted a research on the design of the quantum leadership model in government organizations and concluded that in order to create a quantum leadership style, leaders and principals in an organization should align their thought style and attitude with quantum thought and contradictory critical thought ability by taking advantage of the quantum view and the ability to see purposefully. Therefore, they can foster quantum knowledge and intuitive knowledge of issues in the

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

organization. In this way, organizational leaders and principals can create a quantum feeling and trust among their employees, which in turn causes a new attitude to issues, creative and intuitive thought, foresight in the organization. Therefore, the emergence of creative and intuitive thought along with foresight leads to quantum action or the ability to act responsibly in the organization, the main outcome of which is quantum existence or the ability to live in relationships, leader-follower interaction, progress and development of followers and employees through self-organization and ultimately creating an innovative and forethoughtful organization.

Dargahi and et al. (2017) concluded in a research that the principals of clinical laboratories affiliated to educational hospitals of medical sciences universities in Tehran city had a favorable and relatively favorable quantum leadership skill and its dimensions including quantum vision, quantum action, quantum feeling, quantum existence, quantum knowledge, quantum trust and quantum thought, respectively.

In a study on the quantum perspective in school leadership, Haris, Budiman & Haris (2016) concluded that the principal is a key leader for directing and managing school resources, and the effective school leader has special multitasking skills that can be realized through the quantum leadership approach.

The educational system of Iran is facing many challenges, and in order to achieve the goals of the Fundamental Reform Document of Education (FRDE) and solve the challenges of the education system, it is necessary to take advantage of quantum leadership. School principals are constantly in contact with students and their parents and must be accountable to them, and any mistakes, omissions, and negligence in this regard will face the learners and the society with adverse effects and consequences. Lack of attention or inattention to the quality of education, lack of necessary financial support, lack of communication between local organizations and schools, and the poor income and literacy of parents are among the challenges and problems that schools face. Considering many challenges and problems in the education system and the lack of support resources and rapid changes and transformations at the global level, there is a for a special style of leadership called quantum leadership that takes into account the role of all factors and their relationship. As a result, considering the role of quantum leadership in improving the performance and effectiveness of various organizations, including the education organization, the current research was conducted with the aim of designing a quantum leadership model in secondary schools based on the grounded theory.

2. Methodology

This was an applied qualitative study, in which a quantum leadership model was designed in secondary schools using the grounded theory approach. The study population included 20 experts and principals of the educational system of Iran in 2019. The participants were selected according to the principle of theoretical saturation and using the snowball sampling. In this sampling method, the researchers first selected a number of experts and principals of the educational system of Iran that they knew as samples. The participants were asked to introduce other experts and principals of the educational system of Iran to the researchers so that they select and interview the eligible ones.

The data collection tool included semi-structured interviews that included a main question and a number of sub-questions. The main question included, what are the characteristics of the appropriate model of quantum leadership in Iran's secondary schools? And to answer this question, it was first necessary to answer the following questions. What are the main factors and indicators of quantum leadership in secondary schools? What is your perception of quantum leadership in secondary schools? What technology and information platforms are involved in creating quantum leadership in secondary schools? What are the essentials of quantum leadership in secondary schools? What administrative and support infrastructure are needed to implement quantum leadership in secondary schools? What leadership infrastructure is needed for quantum leadership in secondary schools? What infrastructures of human resources are needed for quantum leadership in secondary schools of the educational system? Interviews were conducted face-to-face during working hours and in the office of experts and principals of the educational system of Iran. The interviewer asked the questions and the interviewee expressed his/her opinions and answers in an open-ended manner. All

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

interviews were transcribed by the researcher, and also, all interviews were audio-recorded to match the notes at an appropriate time. The validity of the interviews was confirmed by the review of participants and the review of non-participating experts, and its reliability was obtained 0.83 by calculating the inter-coder agreement.

At baseline, the researchers designed a main question and a number of sub-questions according to the theoretical foundations, and then proceeded to identify the samples, i.e., the experts and principals of the educational system of Iran. The interviews continued until reaching data saturation. The notes from the interviews and the recorded interviews were analyzed line by line, conceptualized and categorized after completion. Then the duplicate concepts were removed and the similar ones were merged based on their similarities and relevance.

Data obtained from audio-recorded interviews were analyzed using the coding method based on the grounded theory in MAXQDA software.

3. Findings

Interviews were conducted with 20 people, whose demographic information were reported in Table 1.

Table 1. The coding results of the quantum leadership model in secondary schools based on the grounded theory

Variables	Levels	Frequencies	Percentage of frequencies
Gender	Male	15	%75
	Female	5	%25
Marital status	Married	17	%85
	Single	3	%15
Level of education	MA.	6	%30
	P.h.D	14	%60

As it can be observed in the above table, most of the interviewees were male (75%), married (85%) and had P.h.D education (60%). The results of coding for the quantum leadership model in secondary schools based on the grounded theory were reported in Table 2.

Table 2. The coding results of the quantum leadership model in secondary schools based on the grounded theory

Categories	Components	Concepts
Causal conditions	Building quantum trust and agreement	1. Developing a specific information system for students' performance and providing a clear report to parents, 2. Reducing costs and providing a clear financial and performance report to parents and local media and officials, 3. Strengthening local participation and parents and students in school development, 4. Existence of a teacher's council in the school and the presence of representatives of

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

		parents and students, 5. Creating local communication and income generation in schools and 6. Complaints and evaluation system in the school
	Quantum thought	1. Creating opportunities to use natural and experimental methods and evidence-based thinking, 2. Strengthening systematic thinking in students and teachers, 3. Teaching students to philosophize, 4. Cultivating various mental talents and skills in children and 5. Avoiding coercion in value-based teaching
Background conditions	Quantum development platform	1. Development of school smartness, 2. School as a safe and organized place, 3. Interactive learning environment, 4. Creation of mental and physical health and talent file for all students and 5. Development of electronic system management
Intervening conditions	Positive and negative interveners	1. Traditional educational methods, 2. Lack of resources, 3. Lack of change strategies, 4. Fundamental Reform Document and 5. Public demands for improving methods
Core category	Quantum school	1. Having suitable places for sports and extracurricular activities, 2. Existence of electronic system management and school smartening, 3. High participation of local people, parents and students in school development, 4. Proper and standard heating and cooling system, 5. Transportation services for schools and 6. Happy and attractive environment with high participation of students in maintaining its cleanliness and vitality
Strategies	Quantum Leadership	1. Setting up various intra-school councils and paying special

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

		attention to educational staffs and local councils in schools, 2. Designing binding and ambitious goals for teachers and staff, 3. Respectful treatment with students, 4. Having a plan or road map according to the living environment for each school, 5. Establishing local communication and income generation in schools and 6. Motivating school teamwork.
	Quantum creativity	1. A shift towards creative-based learning from memory-based one, 2. Preserving children's nature, 3. Taking care of moral, intellectual and physical development in harmony with Islamic and Iranian requirements, 4. Showing appropriate and creative behavior to students. 5. Group and collaborative activity, 6. Brainstorming, and 7. Idea cultivating contests.
Outcomes	Quantum learning	1. Interactive educational environment, 2. Using natural and experimental methods, 3. Involvement of all students in learning, 4. Optimum use of time and balance homework, and 5. Using new learning methods based on cooperative learning and teamwork.

According to the results of Table 2, the quantum leadership model in secondary schools consisted of 45 concepts in 8 components and 6 categories. The category of causal conditions includes two components of building trust and quantum agreement and quantum thought, the category of background conditions includes one component of quantum development platform, the category of intervention conditions included positive and negative interveners, the core category included quantum school, the strategy category included quantum leadership and quantum creativity, and the outcomes category included a quantum learning component. The results of the quantum leadership model in secondary schools based on the grounded theory were reported in Figure 1.

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

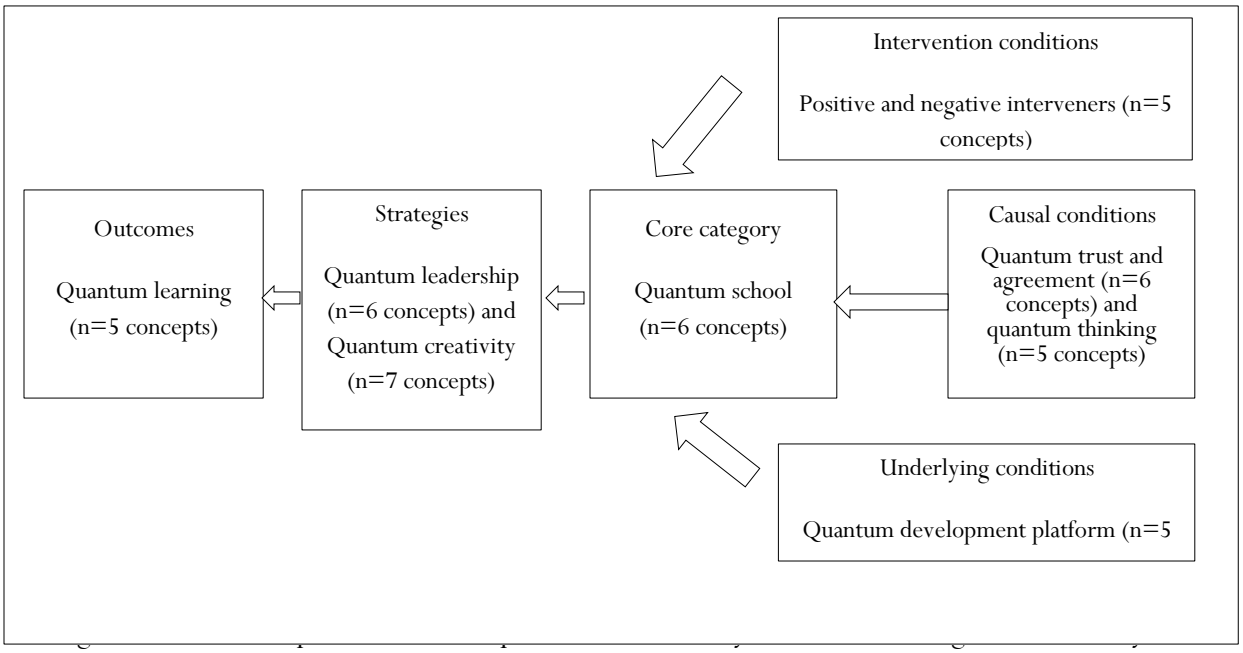

Figure 1. Results of quantum leadership model in secondary schools based on foundational data theory

4. Discussion

Considering the importance of leadership and management methods in increasing efficiency, performance and effectiveness of various organizations, especially educational organizations, including education department, the present research was conducted with the aim of designing a quantum leadership model in secondary schools based on the grounded theory.

The results of the current research showed that the quantum leadership model in secondary schools consisted of 45 concepts in 8 components and 6 categories. The category of causal conditions included two components of building quantum trust and agreement and quantum thought. The category of background conditions included one component of quantum development platform. The category of intervention conditions included one component of positive and negative interveners. The core category included a component of quantum school, the category of strategies included two components of quantum leadership and quantum creativity, and the category of outcomes included a component of quantum learning.

These results in some ways similar to the findings of studies by Madahian, Roozbeh &Akramian (2021), Kamali Ardakani et al. (2020), Bozorgi et al. (2020), Abdolhamid & Mohamadi (2018), Nazarpouri et al. (2017). Dargahi et al. (2017) and Haris et al. (2016). To interpret these results, it can be concluded the importance of educational management in progress and development has now been taken into account. Also, managing or coordinating the organization's activities and facilities in order to achieve the organization's goals has become much more difficult due to the extent of the relationship between the territory and the complexity of the organization's goals and tasks, as well as the expansion of the complexity of the thoughts and expectations of employees and the equipment skills. Educational management is more important than other managements in terms of the effect of the flow of educational activities on the quality of graduates who enter educational management courses. Therefore, it is necessary to rely on religious identity and use efficient and elite intellectual forces in the education system to bring change in the education system. Therefore, it is possible to achieve this goal by relying on innovation, participation, competition, application of education, provision of new national needs and use of global achievements. Since one of the important goals of education is to pay attention to the teacher and create a suitable environment for him/her, it is thus necessary that the transformation starts from teachers and principals. Principals as policy makers of the education system should

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

change the behavior of learners with their correct knowledge and understanding of the growth, strengths and weaknesses, individual differences, demands of students and leadership methods. The schools are now different from the schools of the past decades in terms of the number of students, classes, teachers' expertise, the variety and type of textbooks, physical needs and working conditions, parents' and students' expectations, teachers' occupational, social and environmental needs, technological changes and emergence of new needs, each of which has created a big change in the image of the school and its management and leadership.

They point to the necessity of the role of principals as educational leaders based on the basic assumption that teaching and learning is the heart of educational management and forms the technical core of the school. Educational leadership as a model of school leadership is synonymous with the effective school movement, and a systematic review of recent studies and researches in this field indicates the positive and meaningful impact of this style of school leadership with many dimensions of effective school, including improving student learning and promoting the professional development of teachers. The concern of improving teaching and learning in school has provided the grounds for the emergence of several theoretical models in this field. Some of of the most significant aspects when in defining the roles of principals as educational leaders include targeting and drawing the vision of the school, curriculum management, and creating a positive and effective learning environment in school. Undoubtedly, the playing the role of educational leaders by school principals can ensure excellence in school management of Iran based on FRDE goals. For this purpose, quantum leadership in schools has an extraordinary ability. The quantum paradigm can be useful in understanding and improving organization, leadership and management under very complex conditions, and this paradigm is valuable in terms of explaining organizational life in a new perspective. Uncertainty, ambiguity and complexity are the main characteristics of such perspective, and quantum leadership in secondary schools based on the grounded theories consists of 8 components: building quantum trust and agreement, quantum thinking, quantum development platform, positive and negative interveners, quantum school, quantum leadership, quantum creativity and quantum learning, each of which consisted of a number of concepts. In fact, concepts explain the meaning of each component and should be considered in the quantum leadership model in secondary schools.

The most important and major limitations of the current research include the qualitative nature of the research and the use of the theoretical coding analysis, model being designed for education department and the lack of research on the quantum leadership model in Iranian schools and few studies on the mentioned model in other organizations. Therefore, it is suggested to conduct further studies on the quantum leadership model in secondary schools and even elementary schools, to conduct quantitative studies on the quantum leadership model and to conduct research on this model in the higher education system and even non-educational organizations. Since quantum leadership plays an effective role in improving the efficiency, performance and effectiveness of the organization, therefore, further studies on its various aspects can help experts and planners in improving the current situation of various organizations, especially educational organizations. According to the experts and principals of the education system of Iran, the results of the present research regarding the concepts, components and categories identified for the quantum leadership model in secondary schools based on the grounded theory, can have many practical implications for the experts and planners of the educational system. Therefore, it seems necessary to plan for improving the current state of schools and the education system by improving the concepts and components identified for quantum leadership in schools, and it is hoped that an effective step can be taken to improve the current state of schools by using these results.

Acknowledgments

The authors hereby would like to express their thanks to the interviewees for their participation in the research.

[DOR: 20.1001.1.26453460.2022.5.2.2.2]
[DOI: 10.61186/ijes.5.2.12]

References

Abdolhamid M, Mohamadi M. (2018). The presentation of an interpretive structural modeling of Jihadi leadership based on Ayatollah Khamenei. *Iranian Journal of Management in the Islamic University*. 7(15): 49-70. [Persian]

Bozorgi F, Jahangir Fard M, Sharifi A. (2020). Design of quantum leadership model in Iranian State Universities. *Iranian Journal of Educational Sociology*. 3(1): 9-22.

Curtin L. (2011). Quantum leadership: Succeeding in interesting times. *Nurse Leader*. 9(1): 35-38.

Dargahi H, Mehrani F, Partovi Shayan Z. (2017). Assessment of leadership among clinical laboratories managers of teaching hospitals: Quantum leadership approach. *Journal of Qazvin University of Medical Sciences*. 21(4): 45-55. [Persian]

Franklin PD, Montgomery KL, Dorr P, Trandel D. (2020). Building Maryland's health care leadership capacity: The nurse leadership institute at the University of Maryland School of Nursing. *Nursing Outlook*. 68(5): 657-670.

Gefter A. (2022). Quantum perspective. New Scientist. 253: 38-42.

Hanine S, Nita MA. (2019). The paradigm of quantum leadership: Ontology, praxis and application to management. *Revue Internationale des Sciences de Gestion*. 3(2): 837-858.

Haris I, Budiman A, Haris K. (2016). Exploring quantum perspective in school leadership: A review of effective principal leadership in the changing nature of school management. *International Journal of Sciences &Educational Studies*. 2(4): 38-53.

Kamali Ardakani H, Mohammadkhani K, Jaafari P. (2020). Quantum leadership future universities' approach. *Journal of Future Studies Management*. 31(1): 39-54. [Persian]

Khajepoor Sough P, Sayed Ameri MH, Keshavarz L. (2020). Designing a communication model of quantum leadership and manpower productivity of ministry of Sports and Youth Staff. *Organizational Behavior Management in Sport Studies*. 7(27): 133-146. [Persian]

Madahian Sh, Roozbeh Z, Akramian SR. (2021). A study of quantum leadership theory in organizations. *Journal of Police Organizational Development*. 17(75): 97-123. [Persian]

Nazarpouri AH, Arefnejad M, Shariatnejad A. (2017). The design a model to quantum's leadership in organizations with using interpretive structural modeling approach. *Public Administration Perspective*. 7(3): 135-153. [Persian]

Norouzzadeh A, Iranzadeh S, Feghi Farahmand N. (2020). Effect analysis of quantum leadership on organizational excellence of mega motor company with mediating role of knowledge management and quantum skills. *Journal of Iran Futures Studies*. 4(2): 289-308. [Persian]

Shayani M, Ghaffari H, Khosravitanak M, Ahang F. (2020). Designing the structural equation model of the impact of quantum leadership on the organizational innovation with the mediating role of social capital (Research sample: School managers in Birjand). *Journal of Teacher's Professional Development*. 5(2): 59-70. [Persian]

Shelton C, Darling JR. (2003). From theory to practice: Using new science concepts to create learning organization. *Journal of Learning Organization*. 10(6): 353-360.

Simbulan MG. (2011). Dominant logic and quantum leadership: How both relate to entrepreneurial aptitude among business and non-business students. *Asian Journal of Business and Governance*. 1(1): 127-144.

Wan Geok S, Bilal Ali MB. (2021). A journey of a thousand miles begins with a quantum step: The importance of quantum leadership to promote lifelong learning in organisations. *Elementary Education Online*. 20(3): 235-247.

Wan Geok S, Shaari A. (2020). Show up & be seen: A study towards quantum leadership in quantum. *Palarch's Journal Of Archaeology Of Egypt/Egyptology*. 17(4): 1-14.

Watson J, Porter-O'Grady T, Horton-Deutsch S, Malloch K. (2018). Quantum caring leadership: Integrating quantum leadership with caring science. *Nursing Science Quarterly*. 31(3): 253-258.

[DOR: 20.1001.1.26453460.2022.5.2.2.2]

[DOI: 10.61186/ijes.5.2.12]