

Availability Degree of Network Leadership Implementation Requirements among Female Education Office Directors in the Eastern Province, Saudi Arabia

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Abstract

This study aimed to identify the availability degree of network leadership implementation requirements among female Education Office directors in the Eastern Province, Saudi Arabia, as well as its obstacles from the perspective of female school leaders (i.e. principals). In order to accomplish her study goals, the researcher used the mixed methods approach (i.e. interpretive design) employing both quantitative and qualitative data. A survey questionnaire and semi-structured interviews were used as data collection tools from the study's total population (N=333) representing all female K-12 public and private school leaders at Dammam and Khobar cities in the Eastern Province, Saudi Arabia. Ultimately, the research sample comprised 320 participants (i.e. response rate of 96.0%). Overall, results of the administered survey questionnaire showed that from participant female school leaders' perspective, female Education Office directors in the Eastern Province, Saudi Arabia, generally enjoyed a high availability degree of network leadership implementation requirements (i.e. a mean score of 3.81 out of the total 5). Leadership requirements was ranked first, consecutively followed in order by organizational culture requirements, administrative requirements and technological requirements that came last as the lowest network leadership implementation requirements. In tandem, the semi-structured interviews conducted by the researcher with a selected sample of 2 participant female Education Office directors revealed a number of obstacles hindering the availability of such necessary network leadership implementation requirements, most prominently: centralization of senior management, lack of leadership skills and abilities, weak technological infrastructure at school level in all Saudi governorates and cities in general. It's against such backdrop that the researcher concluded her study providing a number of suggestions and recommendations for developing relevant practice and further research in the foreseeable future, including conducting advanced network leadership in-service training and professional development sessions and workshops for both female Education Office directors and school leaders.

Keywords: *Network Leadership; Female Education Office Directors; Implementation Requirements.*

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Introduction

Generally speaking, recent years have witnessed a huge scientific revolution, especially in the field of technology and communications. As a result, the knowledge economy has become one of the most prominent manifestations of power in today's world. In other words, success in our era requires the mastery of advanced leadership skills that deeply understand the effect of such changes and their resulting obstacles alongside allowing rapid and frequent adaptation to change and balance between a fixed set of values to achieve desired goals. In summary, leadership is today facing major parallel challenges in both real and virtual worlds.

In this regard, Colander (2000) mentioned that traditional methods of work and administration would change in many aspects as physical and geographical presence became less important along with redrawn education and economy borders. From Abu El-Sheikh's (2010) perspective, "building the knowledge society mainly requires an advanced education that opens all windows of science and technology and doors of thought, work and production, confidently plans for a prosperous future, contributes to creativity and innovation, prepares qualified cadres as well as cooperates and constructs knowledge partnerships with various institutions, both internally and externally" (p. 343).

Basically, achieving such desired goal requires effective leadership driven by new technological capabilities amidst an unprecedented openness in which adaptive and complex systems have become a prominent feature of modern organizations adopting work structure units to perform tasks. As a result, it is impossible to manage separate units without disorders, thus prompting us to use innovative leadership styles in tandem with the ongoing changes and complexities of the educational institutions as well as their multiple, interconnected and interdependent internal and external influencing factors. In fact, orientation towards network organization enables organizations to reap a multitude of positive fruits and outcomes.

As a result, such context culminated in the emergence of a new concept of leadership: the so-called "Network Leadership". Unlike traditional, individual, more control-based, directive, top-down and transactional approaches of organizational leadership, network leadership, is more relational, collective, distributed, bottom-up, facilitative and emergent focusing on the leader's role and behavior, rather than his position and authority (Reinelt, 2010). While Zoller & Fairhurst (2007) described network leadership as a "resistance leadership" and a deviation from conventional leadership styles, Schreiber & Carly (2008) emphasized that its main focus is leading for learning and adaptability.

In particular, previous literature focused on examining the network leadership theory in order to identify its concept, types and patterns. For example, Coleman (2011), Wind (2017) and Stiver (2017) accepted the notion that network leadership is a collaborative participatory form of decision-making based on shared distributed authority in addition to mutual trust and respect between the leader and his employees (i.e. subordinates) or participants in networking organizations and professional alliances. As pointed out by Nosella & Petroni (2007), network leadership empowers staff to freely exchange information and share in building a positive organizational culture focusing on continuous cooperation and engagement. According to Silvia (2011), the network leader's task is such that he or she must guide a group of independent but related entities toward the accomplishment of a task that all of the entities seek to achieve but none of them are able to solve alone. In brief, unlike other leadership theories, the network leadership theory focuses on the group leadership development, but not individuals. It has been used to create networks for actions between organizations as well as communities.

Notably, with the ongoing pressures of COVID-19, globalization, digitalization and knowledge society, there are increased demands for better connectivity and communication between all levels of education systems. Therefore, networks are fast becoming the nervous system of our society and it is no exaggeration to state that the

twenty-first century is, indeed, the age of networks, or what van Dijk (2006) and Castells (2010) termed the 'network society'. No wonder then that network leadership is widely considered a strategic asset (Nosella & Petroni, 2007), an innovation tool (Haug, 2018) and a dynamic catalyst of collaborative inquiry networks construction (Pino-Yancovic & Ahumada, 2020) while Strasser et al (2019) emphasized two pivotal roles played by network leaders in supporting learning processes that serve to develop the transformative capacity of social innovation: (1) shaping conditions and contexts for learning; and (2) initiating and supporting activities.

In such emerging context, the Kingdom of Saudi Arabia is now witnessing tremendous radical transformations advocated by the Saudi Vision 2030 (Government of Saudi Arabia, 2016a): a future ambitious visionary roadmap deeply grounded in the dynamic mobility of the current era characterized by the Kingdom's increasing tendency towards expansion, partnerships between every sector's organizations and among different sectors, regional and international integration, business firms' empowerment to promote their social contributions, increasing turn to establishing independent schools and education privatization as well as supporting flexibility and reducing centralization. Besides, the Saudi Vision 2030 also encourages state institutions to construct a productive society able to regionally and globally compete in our ongoing knowledge economy. In particular, the document paid a huge attention to the education sector as the most important means for empowering the kingdom to push the wheel of development, renewal and resource investment. As a result, it's high time for the education sector to play a contemporary leading role that contributes to furthering the renaissance of educational institutions side by side with ensuring the continuity and excellence of their outputs quality.

In summary, in response to such radical change and transformation initiatives, recent years have witnessed increasing calls to prepare the Saudi educational system (Bunaiyan, 2019), make a fundamental shift in the Saudi education system (Allmnakrah & Evers, 2020) and promote Saudi schools' openness to change (Makhlouf, 2021) to serve the Saudi Vision 2030's strategic goals. In particular, Al-Ghamdi (2020) highlighted the numerous challenges and opportunities faced by Saudi Arabian women leaders in education in the Eastern Province of Saudi Arabia in a period of rapid change emphasizing that the Saudi Vision 2030 is, indeed, an ambitious blueprint for the future providing a new vision for women's equity, empowerment and entrance to the labor market envisaging improved opportunities for women to contribute to a more modern and diversified economy and a less inequitable society. No wonder then that in line with the Saudi Vision 2030, the Saudi Ministry of Education (MoE) has recently launched a leadership program designed to improve training and education standards encouraging women education leaders to participate in career development courses, both inside and outside the kingdom, in a bid to develop their managerial skills and leadership capacity.

Furthermore, like their other counterparts, Saudi educational institutions urgently need development, change, reform and overcoming new emerging challenges by adopting necessary leadership skills (e.g. network leadership theory) and providing the perquisite requirements for its effective implementation. Thus comes the importance of activating networks system at educational institutions and their various processes of change and development, adopting networked models (such as learning communities and networks) and reducing hierarchical patterns and rigid outdated systems to obtain effective and rapid results. It's against such backdrop that it is high time to precisely identify network leadership implementation requirements and mechanisms so that they can be adopted by Education Directorates and Offices within their package of leadership styles used to bring into existence the required transformation in an effective way that supports building inter-institutional relationships as well as making the utmost benefit from collective

application, including networking, to maximize rapid joint learning, adaptation, achievement spirit and emergency problem solving.

Research Problem:

As a rule of thumb, Education Offices are on the top list of the most significant educational institutions at the organizational structure of the Saudi Ministry of Education (MoE) due to the vital pivotal role they play in the educational process as direct supervisors of K-12 schools as evidenced by their assigned tasks and roles within the various programs of the Saudi Vision 2030 (Government of Saudi Arabia, 2016a) which particularly includes formulating operational plans to achieve the desired general goals, enhancing community participation among Education Directorates as well as public, private and non-profit organizations, strengthening partnerships with universities, especially colleges of education, to contribute to the development of various educational services, administrative and technical support for schools as well as building and strengthening specialized professional learning communities and networks besides accelerating the effective implementation of the planned initiatives of the National Transformation Program 2020 (Government of Saudi Arabia, 2016b) within the programs of the Saudi Vision 2030 (Government of Saudi Arabia, 2016a).

Furthermore, Education Offices deal with an integrated structure including many nodes (educational institutions) linked to each other by multiple links (nature of relationships) through joint collaborative activities (McGuire & Silvia, 2009). Al-Ghamdi & Abdel Gawad (2010) indicated that ongoing global changes have made education system functions extremely difficult and complex as educational organizations derive their characteristics and functions from the features of their surroundings, needs and variables as well as the changing setting of education from the local to the global milieu. As recently confirmed by Shaheen (2018), “amidst such dynamism, educational institutions are heading towards to building unfamiliar models of knowledge economy in terms of structuring, organization, management and financing” (p. 145). Similarly, Al-Qahtani (as cited in Al-Mehmadi, 2014) emphasized that the administrative leader who can keep a breast with the changing demands and requirements of his current age is, indeed, considered the global administrative leader more capable of accomplishing his organization’s goals and enabling it to move to a higher level than the traditional leader characterized by stability and stagnation. As a result, contemporary leaders of Saudi educational institutions urgently require their affiliated Education Offices to adopt a modern adaptable leadership style.

As previously mentioned, network leadership is a modern leadership style that enables leaders to deal with work environment variables and urgent matters. Notably, results of Trevor & Kilduff’s (2012) confirmed that network leadership styles are more appropriate for a collaborative work environment. Similarly, Kiggundu & Moorosi (2012) found that networking develops joint learning and facilitates the process of assessing school problems.

It’s against such backdrop that sector partnerships and building collaborative communities characterized by networking need to identify the effective implementation requirements of such network leadership environments. The urgent need to practise network leadership in education was clearly sensed by the researcher based on her practical experience in the field of educational leadership in addition to her realization of the dire need for encouraging Saudi educational leaders to make the best use of the Saudi Vision 2030 calling for benefiting from new emerging leadership styles, e.g. network leadership, in order to keep up with current developments as well as anticipate the future and its expected changes side by side with endeavoring to fulfill its requirements.

Based on the previous background, the researcher formulated her problem statement in identifying the availability degree of network leadership implementation requirements among female Education Office directors at Dammam and Khobar cities in the Eastern

Province, Saudi Arabia, as well as its obstacles from the perspective of female school leaders (i.e. principals).

Research Significance:

This study stems its significance as well as potential theoretical and practical benefits from the fact that it deals with a new topic with scarce relevant previous studies in the Arab World, i.e. network leadership. In addition, it copes with modern leadership-administrative educational thought where interest in applying the concept of network leadership has become a global trend whose importance is tremendously increasing in tandem with the emergence of a dire need for providing effective leadership for professional learning communities, learning networks, community partnerships and problem-solving groups side by side with implementing joint educational initiatives.

In particular, network organization at both internal and external levels has recently become dominant at education leadership amidst the ongoing challenges resulting from the global large-scale dissemination of the Corona (COVID-19) pandemic. No wonder then that during the last two years, Saudi Ministry of Education (MoE) officials paid a remarkable unprecedented attention to making the utmost use of network leadership, preparing educational leaders to fulfill its requirements and recruiting highly-talented promising leaders mastering its core competencies.

Literature Review:

A-History of Network Leadership:

During the second half of the 1970s, a series of Non-Governmental Organizations (NGOs) emerged in some Third World countries called “Networks” that launched a number of initiatives reflecting new developmental visions and practices. One of such first initiatives was the establishment of networks in various world regions that include NGOs, experts, working groups and task forces striving to combat illiteracy by the International Council for Adult Education (ICAE) in 1976 (Eissa, 2004). By the 1980s, the information and technology revolution started whose results led to major changes in human societies. Thus the need for collaborative work emerged and leaders realized the importance of working within networks and partnerships to increase effectiveness and strengthen organizations’ ability to achieve their desired goals (Abu El-Ela, 2014).

However, such collaborative context and working within networks and partnerships was not a new idea at that time as network leadership first emerged during the 1950s and 1960s that witnessed an increasing orientation towards considering leadership as an interactive process that provides needed guidance and direction based on employees’ performance rather than their character and job position, which contradicts with the traditional dominant notion that leadership is centered around one person only. As a result, such new perspective was a starting-point for trying to explore and study educational leadership as well as ways of carrying out different activities within the educational institution rather than just observing what its leader does (Smylie et al., 2002; Scribner et al., 2007).

In particular, the concept of network leadership witnessed a radical unprecedented renewal during the mid-1990s (Smylie et al., 2002). Indeed, technological developments and innovations had a significant impact on the process of building networks as it allowed to benefit from gained experiences, knowledge flow and information exchange. Therefore, organizations tended to merge into consortiums or alliances to promote mutual cooperation without losing their independence (Al-Khabti, 2018). With the beginning of the 21st century and the explosion of digital technologies, organizations tried to develop their creative and renewal capabilities through using collaborative approaches and techniques and paying growing interest in knowledge and information sharing and

distribution among the organization's various members within its borders. With those new organizational approaches, new leadership models also emerged calling for the necessity of adopting a different type of leadership consistent with the many leaders within the same organization (Gronn, 2000).

In brief, we conclude that network leadership is closely related to the history and organization of networks. Therefore, from its inception, it relied on using such organization and coordination terms as networking or effective networking requirements (Abu El-Nasr, 2013). In a related vein, several scholarly studies were conducted to probe such collaborative and network environments. Afterwards, a tendency to understand the nature of network leadership recently emerged; thus explaining its few number of applied studies in coincidence with the continuous development of the concept and the emergence of its multiple contemporary and modern trends.

B-Concept of Network Leadership:

Generally speaking, leadership context plays a pivotal role in organizations' success. Thus, successful leaders are those who respond to their own unique contextual demands and prioritize their practices according to their contextual requirements (Noman et al., 2018).

Overall, previous literature showed a wide variety in opinions and viewpoints about the concept of network leadership as well as its meanings and connotations. A case in point is that researchers have addressed it from such multiple perspectives as traits, abilities, practices or processes and structures due to the fact that network leadership is a relational collaborative approach that strives hard to enhance trust, face renewed challenges as well as support problem-solving and knowledge exchange. According to Schreiber & Carley (2008), network leadership is a new paradigm of leading for learning and adaptability in the dynamic, rapidly changing landscape of our ongoing knowledge age.

Furthermore, network leadership in education has been defined as that type of leadership developed in such networked or highly interconnected contexts as Educational Collaborative Networks (ECNs), particularly focusing on managing the diversity of collaborative skills and capacities which lead to inter-organizational collaboration and innovation (Díaz-Gibson et al., 2017).

It's against such backdrop that the current researcher concluded that the multitude of definitions inherent at previous literature all converge at three main points that highlight the distinctive features and characteristics of network leadership as follows:

1-Network leadership expresses a leadership style in which a group of individuals, units or organizations, whether belong to the same field or different disciplines of mutual benefit, interact together via an interactive network.

2-Nature of network leadership is characterized by collaboration that requires its sharing and distribution across organizational boundaries and professional groups. Thus, it is a coordinating, stimulating, not authoritarian, leadership that may be formal or informal.

3-Network leadership is characterized by managing the diversity of collaborative skills, abilities and experiences as well as utilizing and exchanging available resources.

C-Characteristics of Network Leader:

Network leaders are, in essence, a group of individuals managing their network activities, either because they hold formal authority positions or are influential in other ways.

The recently published report by CEB, Inc. (2013) entitled "The Rise of the Network Leader: Reframing Leadership in the New Work Environment" emphasized that network leaders require creating a work environment based on autonomy, empowerment, trust, sharing and collaboration.

Similarly, Silvia (2010) emphasized that her study results about the behaviors exhibited by network leaders conform to Yukl's (2002) definition of leadership as "the process of influencing others to understand and agree about what needs to be done and how it can be done effectively, and the process of facilitating individual and collective efforts to accomplish the shared objectives" (p. 7).

D-Nature of Network Leadership:

Overall, previous literature has indicated that leadership in networks is different from general hierarchical organizational leadership in the administrative or educational field which requires different types of leadership behaviors (e.g. Jopling & Crandal, 2006; McGuire & Silvia, 2009; Reinelt, 2010; Khiaw-Peng, 2016). Results also illustrated that different types of leadership usually play an important role in promoting network effectiveness in the context of collaborative environments (Silvia, 2010).

In other words, network leadership is dynamic, non-linear and dependent on organizational, environmental and member demands. Much evidence has shown that network leadership is facilitative rather than directive. It is about that leadership style that arises from interactions and relationships among people so that it works best when it is distributed; thus responding to the context (Jopling & Crandal, 2006; Reinelt, 2010).

In tandem, such nature is evidently emphasized by the recently published report by CEB, Inc. (2013) stating that the role of network leadership involves establishing strong network performance by building, aligning and enabling broad networks, both internal and external to the organization. Therefore, network leadership is more about influence than control; it is also a more indirect than direct form of leadership requiring leaders to create a work environment based on autonomy, empowerment, trust, sharing and collaboration.

Schreiber & Carley (2008) highlighted the importance of learning and adaptability in networks. Leadership is essential to support these processes through activities which foster knowledge flows, enhance interactions, advocate contextual change (structuration) and facilitate aggregation. As a result, network leadership is, indeed, a leadership of change which enables emergent collective action and promotes learning that fosters productive responses to volatility emphasizing two important elements to producing learning and adaptation: organizational context and learning process. Accordingly, from the perspective of complexity leadership theory, network leadership entails two types of leadership playing prominent roles in facilitating change and advancing the coevolution of human and social capital, namely:

1-Leadership of Context: It enables organizational conditions allowing for productive collective action to emerge in response to a changing environment via collaborative structures and processes accomplishing the organization's goals. In other words, leadership behaviors correspond to their emerging context's requirements, levels, needs and problems. In complexity leadership theory, this is the first enabling leadership function, i.e. creating conditions.

2-Leadership in Process: It facilitates learning and adaptation through the emergent interactions and informal dynamics which form collective action. In other words, leadership generates collective action in networks. It also channels learning and adaptive responses to formal management for exploitation. In complexity leadership theory, this is adaptive leadership as well as the second enabling leadership function, i.e. interfacing responses.

In essence, a number of previous studies repeatedly showed that leadership in networks and collaborative environments is an extended leadership that transcends the organization's boundaries in order to effectively gain the desired collaborative advantage, especially in the educational sector. As a consequence, network leadership can be

considered a multidimensional and hybrid leadership style or model (e.g. Gronn, 2009; Collinson & Collinson, 2009; Coleman, 2011; Townsend, 2015).

On the other hand, there has been increasing interest in collaborations, partnerships and networks as they have emerged as interorganizational innovations to address the integrated nature of complex policy problems. Notably, in connected or highly interconnected contexts, such as education collaborative networks, adopted leadership style develops and specifically focuses on managing the diversity of skills, abilities and experiences which, in turn, leads to collaboration and innovation among organizations (Mandell & Steelman, 2003).

In a nutshell, the current researcher observed that such collaborative and cross-organizational nature of network leadership is closely linked to Fiedler's (1967) contingency theory of leadership postulating that effectiveness as a leader is determined by how well a leadership style matches the situation based on two major important factors: leadership style and situational favorableness. Besides, Fiedler's contingency theory also assumed that there are two types of leadership styles: task-oriented and relationship-oriented. According to Fiedler, the effectiveness of the leader is the result of the interaction of two intertwined factors: leadership style and favorability of the situation (Green, 2017).

E-Principles of Network Leadership:

Network leadership has a number of guiding principles that can be explained through an overview of its following eight main distinguishing attributes identified by Tremblay (2012):

1-Scale: It is part and parcel of network leadership. It means a network implies more than an individual organization. When a network is formed, it encompasses multiple organizations able to confront deeply rooted challenges with no single solution.

2-Cross-Sector Coordination: According to Kania & Kramer (2011), large-scale social change requires wide-scale cross-sector coordination involving connection across industries or any other structural boundaries. Renée & McAlister (2011) also discussed the need for powerful collaborations and integration via alliance building. As a result, cross-sector coordination ensures reducing discontinuity gaps.

3-Capacity Building: It enables network leadership to identify challenges and increases the ability to promote their solution as well as provide the necessary infrastructure to accomplish the goals established through the common vision of involved parties.

4-Reduction of Independent Action: In order to successfully implement network leadership for collective impact, the organization and its leaders must be willing to look beyond its/their own self-interest(s) and take on a more global, or macro, perspective via a shift in organizational goals and focus.

5-Long-Term Mentality: Another feature of network leadership is that it is best practised when working on long-term solutions. A long-term commitment requires looking beyond the "quick fix" to many education-related and societal problems. Also, it demands a finite and simultaneous focus on process and progress.

6-Collective Communication: As a rule of thumb, communication is one of the most significant leadership skills. It is a set of social performance skills. Kania & Kramer (2011) asserted that regular ongoing communication, whether in person or conducted virtually, assists in creating trust within the network. Thus, constructive dialogue is the communication oriented toward goal accomplishment.

7-Reframing: Network leadership requires reframing the current concept of accomplishing goals. According to Bolman & Deal (2008), reframing requires an ability

to think about situations in more than one way. Indeed, network leadership requires a new type of command, flexibility and sharing of power.

8-Process: It is critically important to understand leadership as a collective process. Because of its scope and scale, network leadership multiplies the volume of occurring transactions.

F-Requirements of Network Leadership:

Generally speaking, the networked context is a collaborative process that transcends the boundaries of organizations or their internal units. It's against such backdrop that most administrative and organizational scholars have identified some prerequisite requirements that must be fulfilled so that such collaborative process can accomplish its goals. Particularly, one of those most significant prerequisite requirements is the motivating collaborative leader enjoying specific leadership competencies applicable to such collaborative context (Morse & Buss, 2008). No wonder then that previous foreign literature often focused on highlighting leadership competency requirements, sometimes including organizational-administrative requirements and trust between team members, e.g. McGuire & Silvia (2009) and Coleman (2011).

Notably, most previous relevant Arab literature suffered from a remarkable gap whose bridging requires conducting further studies, i.e. mere focus on measuring the degree or reality of practising network leadership from various stakeholders' perspective (e.g. Al-Kayed, 2018; Al-Amri & Al-Mutairi, 2020). However, while some previous Arab studies focused on leadership, administrative and technological requirements, others (e.g. Abu Sultan, 2014; Maqableh, 2018) added administrative organization as a requirement in tandem with each organization's nature and scope.

Based on her comprehensive literature review from a perspective taking into account the investigated environment and its practical considerations, the current researcher divided network leadership implementation requirements into the following four main integrated categories:

I-Leadership Requirements:

Basically, competencies refer to the prerequisite skills, knowledge, abilities and attitudes empowering the performance of required work well in repeated situations side by side with accomplishing better results and outcomes. More specifically, Morse & Buss (2008) provided us with a significant integrated three-dimension taxonomy of network leadership requirements (or competencies) highlighting network leaders' basic attributes, skills and behaviors as follows:

A-Attributes:

They include six main personal attributes considered by Morse & Buss (2008) to be fundamental to effective leadership in collaborative and network settings that work in tandem with other core attributes associated with traditional hierarchical organizational leadership:

1-Collaborative Mindset: Network leaders see across boundaries. They have a vision of what collaboration can accomplish. They understand the need to be inclusive and interactive, working across systems and agencies, connecting with other efforts and involving key networks, partners and stakeholders to pursue outcomes. Such leaders see connections and possibilities where others may see barriers or limitations. They understand, value and seek the principle of synergy. Also, they gain more insight so that the excitement of that mutual learning and insight will create momentum toward more and more insights, learning and growth.

2-Passion toward Outcomes: Network leaders should have a passion or personal desire to bring about change and make a difference. For them, the desired result or outcome for the

public good becomes the passionate focus and spark that energizes and mobilizes. Thus, they are passionate about the common good and creating public value. That passion is an emotional glue that mobilizes and sustains energy building support and trust in an interdependent web of diverse stakeholders. As a result, passion for results becomes a strong motivator for leaders, giving them energy and sense of focus that make them able to provide more contributions and achievements.

3-Systems Thinking: Network leaders see the big picture and take the long view. Systems thinking is both an attribute and a skill. It is a discipline for seeing wholes as well as a specific set of tools and techniques. Therefore, it is a habit of thinking and a set of skills that can be learned involving thinking about impacts on future generations, ripple effects and consequences beyond the immediate concern as well as thinking in terms of issues and strategies that cross functions, specialties and professional disciplines.

4-Openness and Risk-Taking: Network leaders are often described as entrepreneurs noted for their openness and risk taking. Willingness to experiment and take risks is a critical attribute. They are risk takers who are not afraid of failure, comfortable with uncertainty, able to make trade-offs and accommodate the unexpected. Thus, they enjoy a committed openness to identifying and testing new and diverse ways to achieve the desired outcomes. They are willing to be wrong, revise their thinking and understand that no project, program or policy should be seen as final or definitive.

5-Sense of Mutuality and Connected: Network leaders have a strong psychological connection with others. The interpersonal quality of mutuality and connectedness can be thought of in terms of perspective taking, i.e. putting oneself in another's place and concern for others. The ability to understand others' concerns and perspectives and having an underlying concern for others is a core foundation for the application of collaborative skills and successful collaborative action. Besides, such concern calumniates in building trust that, in turn, underpin effective relationships at network level.

6-Humility: Network leaders have a good degree of humility, an attribute often described as a strong but measured ego. Thus, they don't have to grab the headlines for every success or to be in charge of everything. Quite the opposite, they seem to take great satisfaction when they can share credit for accomplishments with many others. Their ambitions are directed more toward organizational success than personal glory. Besides, they are ambitious and driven entrepreneurs. Yet, at the same time they are humble persons willing to share credit and leadership burdens with others.

B-Skills:

Morse & Buss (2008) identified three broad categories or skill sets specifically discussed in the network leadership literature that appear essential in its implementation:

1-Self-Management: It refers to the ability to prioritize and manage time effectively. It seems to be a fundamental skill relevant for leading organizations at the center of not only personal effectiveness, but also leader effectiveness, particularly when working across boundaries. The personal habits of being proactive, beginning with the end in mind and putting first things first are at the very foundation of what it takes to be a network leader.

2-Strategic Thinking: Four sets of analytic skills form the core components of network leaders' strategic thinking: (1) framing and reframing issues and their strategic responses; (2) identifying and defining end-outcomes or desired results; (3) assessing stakeholder interest to discover common and complementary interests; and (4) systematic thinking to reveal interconnections and strategic leverage points.

3-Facilitation Skills: Like other subsequent contributions by Stiver (2017), Díaz-Gibson et al (2017) and Beswick & Clarke (2018) emphasizing that facilitation and coordination as core skills of network leadership, Morse & Buss (2008) distinguished four distinct four

primary skills of facilitation (or process): (1) helping the group generate fresh ideas and new insights; (2) coping with conflict; (3) getting a group unstuck and moving the debate forward; and (4) forging multiple agreements.

C-Behaviors:

Morse & Buss (2008) stated that attributes and skills of network leaders are relevant inasmuch as they contribute to effective leadership behaviors. Therefore, network leadership requirements or competencies go beyond who they are (attributes) and what they can do (skills)-they also must include what they actually do (behaviors). In particular, they summarized seven various network leaders' behaviors: (1) stakeholder identification; (2) stakeholder assessment; (3) strategic issue framing; (4) convening working groups; (5) facilitating mutual learning processes; (6) inducing commitment; and (7) facilitating trusting relationships among partners.

Basically, Bass & Bass (2008) saw leadership as specific meaningful behaviors in which the leader engages in the context of directing and coordinating the work of group members, such as structuring work relationships, praising or criticizing group members as well as paying attention to members' feelings and welfare.

Overall, previous researchers identified a number of network leader's basic behaviors grouped according to a number of various taxonomies: surveyed leaders' repeated behaviors at their individual organizations and network context in general from the perspective of public management (e.g. Agranoff & McGuire, 2001; McGuire, 2002, 2006; Morse & Buss, 2008; McGuire & Silvia, 2009) or selected specific, effective leadership behaviors used by network leaders, particularly in education sector (e.g. Leithwood & Azah, 2016; Leithwood, 2019).

From such perspective, the researcher distinguishes between two major kinds of leadership behaviors closely related to her current study:

1) Network Leadership Behaviors in General:

Based on Vangen & Huxham's (2003) taxonomy, Ruckdäschel (2015) categorized network leadership activities or behaviors as embracing, mobilizing and empowering whereas Muijs et al (2011) classified network leaders' roles into four major categories: (1) boundary spanner; (2) network designer; (3) network coordinator; and (4) network broker. In turn, Rincon-Gallardo (2020) outlined three school-network leadership roles and functions: (1) lead learner; (2) culture shifter; and (3) system changer.

Agranoff & McGuire (2001) first suggested a proposed framework for tackling network leaders' behaviors that was later extended by McGuire (2002, 2006) and McGuire & Silvia (2009) highlighting four main distinct categories in terms of their operational differences:

1-Activation: It may be the most important activity of leading networks, particularly at the beginning of the formation of a network. In general, it refers to the set of behaviors employed for identifying and incorporating the persons, stakeholders and resources needed to achieve program goals. Selective activation is based on correctly identifying necessary participants and other resources needed for the network. The skills, knowledge and resources of these potential participants must be assessed and tapped for better utilization. Also, it includes recruiting potential members.

2-Framing: It attempts to frame the structure, norms and values of the network as a whole. It is defined as the behaviors used to arrange and integrate a network structure by facilitating agreement on participants' roles, operating rules and network values. It usually includes facilitating agreement on leadership and administrative roles, helping establish identity and culture for the network as well as helping to develop working structure for network, including strategic planning.

3-Mobilizing: Leaders must induce individuals to make and keep a commitment to the network. Mobilizing behaviors are used to develop support for network processes from network key players, participants and external stakeholders. Publicizing the network's accomplishments, establishing and maintaining its legitimacy and using incentives to motivate network participants are few examples of the behaviors undertaken by network leaders. Mobilization in this regard can be a common and ongoing task for effective networks.

4-Synthesizing: It posits that leaders use synthesizing behaviors intended to create an environment and enhance the conditions for favorable, productive interactions among network participants. They try to create and maintain trust as well as promote information exchange among network participants as a means to build relationships and interactions that result in achieving the network purpose. In a related vein, Silvia (2011) also emphasized that synthesizing behaviors positively affect network effectiveness.

2) Educational Network Leader's Behaviors:

Leithwood & Azah (2016) and Leithwood (2019) identified seven prominent leadership practices or behaviors of network leaders selected from those documented widely used practices by effective school leadership systems repeatedly included into various national standards of school leadership as evidenced by both Robinson et al (2009) and Leithwood & Sun (2012):

1-Leadership Distribution: Several recent leadership studies argued that distributed leadership is common in networks emphasizing that leadership distribution reinforces organizational effectiveness. Al-Zaki & Hammad (2011) added that success of distributed leadership implementation requires the availability of multiple relevant knowledge and skill abilities among leaders and educational community members alike.

2-Identifying and Sustaining Work for Clear Goals and Purposes: Leadership is important to a network when it enhances members' visibility and agreement to their collective reasons for interaction. Evidence from a large body of research on effective leadership indicates that leaders' goal-setting behaviors have significant impacts on a range of subsequent organizational variables affecting school organizations, e.g. school culture, teacher trust and commitment and student learning (Leithwood & Riehl, 2005).

3-Monitoring Progress: It is considered one of the most important and challenging network leadership behaviors and the core basis for establishing network responsibilities via disclosing detailed and transparent statements of information to others in addition to providing relevant feedback to network members so that they can assess and modify its activities so as to better achieve collective goals.

4-Network Leadership Support as Buffering Members from External Challenges: Network leadership support can take many forms, e.g. allocating resources for network missions, stakeholder encouragement and support, facilitating contacts with required sources of experience, providing consultation to deal with members' organizational challenges and serving as successful leadership models.

5-Inspirational Motivation: As stated by Bass & Riggio (2006), it is a behavior based on transformational leadership styles. It is concerned with stimulating people's motivation and enthusiasm in addition to exchanging maximum possible common and mutual interests so that their top priority is based on common good over personal interest; thus enhancing their team spirit and interdependence (Bass & Avolio, 1990). It also includes effective and emotional communication between leadership and members so that the leader makes his subordinates feel high expectations and strives to inspire them to be partners in formulating a unified vision and committed to making efforts for their accomplishment (Northouse, 2006).

6-Bridging Communication across Different Groups: Strong relationships within networks lead to different degrees of consensus or groupthink.

7-Promoting Effective Collaborative Inquiry: Network inquiry is widespread. Jopling & Crandall (2006) confirmed that successful networks usually adopt an inquiry mindset achieving network depth and extension and affecting behavior. According to Bailey & Jaxell (as cited in Al-Ghamdi, 2017), in order to conduct collaborative inquiry to examine leadership practices, a group of network members/professionals discuss their assumptions, convictions and educational beliefs as well as the extent of their impact on practices in order to identify common challenges, analyze relevant data and implement a variety of leadership approaches using reflective thinking tools.

More recently, Wind et al (2021) proposed a systems model, i.e., the 4Cs Network Leadership Model, based on two factors: (a) antecedents, consisting of individual actor- and collective-oriented antecedents; and (b) outcomes, consisting of performance- and interaction-oriented outcomes elaborating four distinct network leadership roles: (1) connecting; (2) coaching; (3) catalyzing; and (4) consulting.

II-Organizational Culture Requirements:

In order to effectively carry out networking processes, network leadership requires an organizational culture based on mutual trust among members to achieve joint learning. High-level trust is considered a motive for members' openness to learning, acceptance of criticism and acknowledgment of lack of knowledge of some matters, which constitutes a necessary requirement for learning and growth. Also, it is a top priority to construct a culture of reflection and critical collective thinking of professional practices, research and development conducive to promoting creativity, flexibility and acceptance of positive criticism in order to develop desired leadership and educational practices. Notably, Kiggundu & Moorosi (2012) showed that effective networking for school leadership requires a careful study of current organizational cultures, power relations and communication practices.

III-Technological Requirements:

McGuire & Silvia (2009), Kiggundu & Moorosi (2012), Azab (2018) and Liou & Daly (2020) indicated that network leadership needs an adequate technological infrastructure, i.e. both hardware and software, including:

1-Improving technological infrastructure readiness at schools and educational administrations.

2-Availability of suitable applications and software to disseminate professional knowledge.

3-Launching Websites for educational institutions reflecting their vision, mission and goals with regular updates.

4-Practitioners' ability to effectively communicate and use technology over the network.

IV-Administrative Requirements:

Morse & Buss (2008), McGuire & Silvia (2009), Azab (2018) and Leithwood (2019) emphasized that the following pivotal administrative requirements are indispensable to network leadership success:

1-Availability of suitable mechanisms to document professional knowledge and best practices resulting from networks.

2-Network leader plays the role of teamwork coordinator and facilitator of network members.

3-Network leader's participation in solving practical problems.

4-Holding annual conferences to discuss pressing issues and publishing relevant electronic bulletins.

5-Making efforts to transform network innovative ideas and initiatives into actual educational practices.

6-Network leader's follow-up of performance development and result dissemination to provide timely feedback to other network members.

Research Methods and Procedures:

A-Research Questions:

This study attempted to answer the following four major questions:

1-What is the availability degree of network leadership implementation requirements with their four various dimensions, i.e. leadership, administrative, technological and organizational culture requirements, among female Education Office directors at Dammam and Khobar cities from female school leaders' perspective?

2-Is there a significant difference at the 0.05 level between the mean scores of the availability degree of network leadership implementation requirements among female Education Office directors at Dammam and Khobar cities attributed to the variables of year of experience, academic qualification, school type and Education Office?

3-What are the network leadership implementation obstacles among female Education Office directors from their own perspective?

4-What are the best ways of enhancing network leadership implementation among female Education Office directors at Dammam and Khobar cities from their own perspective?

B-Research Goals:

This study sought to accomplish the following four goals:

1-To identify the availability degree of network leadership implementation requirements among female Education Office directors at Dammam and Khobar cities from female school leaders' perspective.

2-To reveal the significant difference at the 0.05 level between participant subjects' response mean scores of the availability degree of network leadership implementation requirements among female Education Office directors at Dammam and Khobar cities attributed to the variables of year of experience, academic qualification, school type and Education Office.

3-To highlight network leadership implementation obstacles among female Education Office directors at Dammam and Khobar cities.

4-To find the best ways of enhancing network leadership implementation among female Education Office directors at Dammam and Khobar cities.

C-Research Limitations:

This study had the following limitations:

- Objective Limitations: Identifying the availability degree of network leadership implementation requirements, including leadership, administrative, technological and organizational culture requirements, as well as its obstacles and ways of enhancement among female Education Office directors.

- **Temporal Limitations:** Administration of the research tools to the selected sample during both the second semester of the 1440-1441 AH Academic Year and the first semester of the 1441-1442 AH Academic Year (i.e. 2020).
- **Spatial Limitations:** Conducting the study at both K-12 public and private female schools organizationally affiliated to Education Offices at Dammam and Khobar cities in the Eastern Province, Saudi Arabia.
- **Human Limitations:** Administration of the survey questionnaire to the study's total population (N=333) representing all female K-12 public and private school leaders at Dammam and Khobar cities and conducting semi-structured interviews with a selected sample of 2 participant female Education Office directors.

D-Research Methodology:

As a rule of thumb, the objectives of any scientific study are achieved via using the research method most appropriate to its nature and goals. Basically, the current study aimed to identify the availability degree, obstacles and ways of enhancement of network leadership implementation requirements among female Education Office directors in the Eastern Province, Saudi Arabia. Accordingly, in order to accomplish her study goals, the researcher used the mixed methods approach (i.e. interpretive design) employing both quantitative and qualitative data collection tools: a survey questionnaire and semi-structured interviews. Notably, the mixed interpretive qualitative design plays a significant role in extending mixed methods research via the inclusion of and dialogue with stakeholders, the exposure of "hidden" features of education and the value-laden nature of research giving the priority first to quantitative data collection and analysis before subsequently focusing on some relevant qualitative data (Creswell, 1994; Abu Allam, 2014).

E-Research Population:

Overall, this study's total population (N=333) included all in-service female K-12 public and private school leaders as well as female Education Office directors (N=3) at Dammam and Khobar cities organizationally affiliated to Education Offices in the Eastern Province, Saudi Arabia, during both the second semester of the 1440-1441 AH Academic Year and the first semester of the 1441-1442 AH Academic Year according to the most recent official statistics released by Dammam and Khobar Education Offices-based Information Unit. Due to the small size of her study's population, the researcher used the total survey method to obtain the largest possible number of participants' responses for a better result accuracy rate. Procedurally, the survey questionnaire was electronically distributed via e-mail to all female K-12 school leaders at Dammam and Khobar cities by the General Directorate of Education in the Eastern Province, Saudi Arabia.

F-Research Sample:

The current study was based on a number of selected independent (i.e. demographic) variables closely related to participant subjects' job characteristics, namely: Education Office, academic qualification, year of experience and school type. Following data extraction in light of such selected variables, the research sample respondents' main characteristics were as follows:

- **Education Office:** Participant female school leaders were distributed between 38.1% (N=122) affiliated to Khobar Education Office, 31.6% (N=101) affiliated to West Dammam Education Office and 30.3% (N=97) affiliated to East Dammam Education Office.
- **Academic Qualification:** The majority of participant female school leaders, i.e. 95.0% (N=304), held bachelor's degrees while 3.4% (N=11) did postgraduate studies and only 1.6% (N=5) held credentials lower than bachelor's degrees.

- Year of Experience: Participant female school leaders varied according to their years of experience working at school leadership positions between 44.0% (N=141) with more than 10 years, 34.4% (N=110) with less than 5 years and 21.6% (N=69) ranged between 5-10 years.
- School Type: Participant female school leaders were divided between 76.9% (N=246) working at public schools and 23.1% (N=74) working at private schools.

G-Research Tools:

Based on her study's nature and goals, the researcher used a survey questionnaire administered to female school leaders and semi-structured interviews conducted with female Education Office directors as data collection tools from her study's population.

In order to verify the face validity of the study tools and their appropriateness to its goals, the designed survey questionnaire was presented to a selected group of specialized educational peer-reviewers including 36 faculty members at some Saudi and Arab universities and Ministry of Education's (MoE) key staff. Besides, the internal consistency of the tool was also verified using an exploratory sample comprising 30 female school leaders.

The obtained statistical results showed that all the survey questionnaire's sub-dimensions of the availability degree of network leadership implementation requirements were significant at the 0.01 level, all with good correlation coefficient (ρ) values ranging between 0.571 and 0.926. In other words, the current research tool already enjoyed high internal consistency coefficients as well as adequate trustworthy validity indicators for field application. Also, it had a high total Cronbach's Alpha (α) coefficient of 0.942, i.e. a significant reliability coefficient value.

Research Results, Discussion and Conclusion:

Following conducting her field experiment, tools administration to participant sample and data analysis with appropriate statistical techniques, the researcher concluded a number of significant results that can be displayed in the following four main sections corresponding to the study's four main questions:

I-Results for the First Research Question:

Basically, the current researcher divided the availability degree of network leadership implementation requirements among Saudi Female Education Office directors into four various dimensions, namely: leadership, administrative, technological and organizational culture requirements. Based on the total average statistical results of analyzing their Frequencies (F), Means (M), Standard Deviations (SD), they were consecutively arranged according to the following order: leadership requirements (M = 4.25, SD = 0.63) with a very high availability degree, administrative requirements (M = 3.69, SD = 0.85) with a high availability degree, technological requirements (M = 3.43, SD = 0.75) with a high availability degree and, finally, organizational culture requirements (M = 3.88, SD = 0.84) with a high availability degree (see Tables 1-5).

Overall, results for the study's first research question showed that female Education Office directors at Dammam and Khobar cities enjoyed a high availability degree of network leadership implementation requirements from the perspective of female school leaders (i.e. principals). Thus, the results indicated a high degree of consensus among members of the study population on the availability of such requirements within the limitations of their specific educational environment. Also, this result perhaps reflected the high-quality of those Education Offices and their relentless pursuit to bring into existence the Saudi Vision 2030 and its roadmap for the future (as evidenced by the content analysis of relevant interviews conducted by the current researcher with the

selected sample of participant female Education Office directors) via seeking excellence in various aspects of the educational process, i.e. both inputs and outputs, and striving to improve infrastructure.

Notably, such high degree may be attributed to female Education Office directors' everyday practice and benefit from training and professional development programs provided to middle educational leaders in addition to their adherence to female Education Office directors' selection criteria in terms of skills, abilities and personal traits as laid down in the recently published document entitled "Regulatory Handbook of Education Offices: Version 1-The 1440-1441 AH School Year" (Ministry of Education, 2018).

Table (1): Availability Degree of Leadership Requirements for Network Leadership Implementation among Female Education Office Directors at Dammam and Khobar Cities from Female School Leaders' Perspective

No	Item	Agreement Degree										Mean	Standard Deviation	Rank	Availability Degree
		Very High		High		Medium		Low		Very Low					
		F	%	F	%	F	%	F	%	F	%				
3	The female Education Office director respects different viewpoints	182	56.9	109	34.1	22	6.9	3	0.9	4	1.3	4.44	0.71	1	Very High
4	The female Education Office director has effective communication skills	161	50.3	127	39.7	23	7.2	6	1.9	3	0.9	4.37	0.78	2	Very High
14	The female Education Office director has a positive view of cooperation with educational institutions	154	48.1	132	41.3	28	8.8	3	0.9	3	0.9	4.35	0.76	3	Very High
2	The female Education Office director offers flexible treatment exemplified by simplified procedures	160	50.0	117	36.6	34	10.6	5	1.6	4	1.3	4.33	0.82	4	Very High
12	The female	157	49.1	131	40.9	20	6.3	6	1.9	6	1.9	4.33	0.83	5	Very High

	Education Office director uses democratic leadership styles based on collaboration and dialogue															
1	The female Education Office director is able to inspirationally motivate others	157	49.1	120	37.5	33	10.3	5	1.6	5	1.6	4.31	0.84	6	Very High	
15	The female Education Office director is able to lead change and transformation according to the Saudi Vision 2030	139	43.4	150	46.9	23	7.2	4	1.3	4	1.3	4.30	0.76	7	Very High	
9	The female Education Office director is able to deal with different stakeholders	149	46.6	130	40.6	33	10.3	5	1.6	3	0.9	4.30	0.79	8	Very High	
16	The female Education Office director is able to take suitable decisions	139	43.4	146	45.6	27	8.4	5	1.6	3	0.9	4.29	0.76	9	Very High	
10	The female Education Office director is able to communicate a clear vision to others	125	39.1	157	49.1	28	8.8	7	2.2	3	0.9	4.23	0.77	10	Very High	
6	The female Education Office director has crisis resolution	128	40.0	147	45.9	35	10.9	7	2.2	3	0.9	4.22	0.80	11	Very High	

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	and management skills														
8	The female Education Office director is able to use disciplined thinking ³	117	36.6	154	48.1	44	13.8	4	1.3	1	0.3	4.19	0.74	12	High
13	The female Education Office director is able to lead according to both real and virtual contexts ⁴	107	33.4	167	52.2	36	11.3	7	2.2	3	0.9	4.15	0.77	13	High
7	The female Education Office director has result analysis and prediction skills	107	33.4	159	49.7	46	14.4	6	1.9	2	0.6	4.13	0.82	4	High
11	The female Education Office director is able to strategically plan to achieve future goals	101	1.6	161	50.3	51	15.9	4	1.3	3	0.9	4.10	0.86	15	High
17	The female Education Office director is willing to take risks	121	37.8	126	39.4	59	18.4	9	2.8	5	1.6	4.09	0.90	16	High
5	The female Education Office director has modern technology use skills	100	31.3	138	43.1	78	24.4	3	0.9	1	0.3	4.04	0.79	17	High
Total Average												4.25	0.63	-	Very High

³ – Disciplined thinking means observation, reflection, diagnosis, assessment and deduction.

⁴ – The virtual context is the implementation of remote leadership via technological means, tools and channels.

Table (2): Availability Degree of Administrative Requirements for
Network Leadership Implementation among Female Education Office
Directors at Dammam and Khobar Cities from Female School Leaders' Perspective

No	Item	Agreement Degree										Mean	Standard Deviation	Rank	Availability Degree
		Very High		High		Medium		Low		Very Low					
		F	%	F	%	F	%	F	%	F	%				
23	The Education Office encourages female school leaders' teamwork	113	35.3	113	35.3	78	24.4	12	3.8	4	1.3	4.00	0.93	1	High
18	Administrative regulations allow schools to share financial and human resources	75	23.4	126	39.4	87	27.2	24	7.5	8	2.5	3.74	0.94	2	High
24	The Education Office enhances the ability of female school leaders and staff to use reflection and critical thinking	80	25.0	123	38.4	76	23.8	35	10.9	6	1.9	3.74	1.01	3	High
21	Administrative regulations facilitate coordination and linking between schools and their local communities	71	22.2	126	39.4	93	29.1	21	6.6	9	2.8	3.72	0.97	4	High
22	The Education Office provides assessment standards for evaluating affiliated schools' levels of engagement in collaborative activities	65	20.3	119	37.2	100	31.3	30	9.4	6	1.9	3.65	0.97	5	High
19	The Education Office involves female school leaders into their affiliated schools' decision-making processes	73	22.8	103	32.2	98	30.6	30	9.4	16	5.0	3.58	1.09	6	High
	The current policies of the														

28	Office provides schools with high-speed Internet services	32	10.0	55	17.2	110	34.4	61	19.1	62	19.4	2.79	1.02	4	Medium
27	The Education Office provides schools with advanced e-networks and communication software ⁵	30	9.4	47	14.7	104	32.5	71	22.2	68	21.3	2.69	1.02	5	Medium
26	The Education Office provides schools with adequate modern computer sets	21	6.6	36	11.3	100	31.3	77	24.1	86	26.9	2.47	1.18	9	Low
Total Average												3.43	0.75	-	High

Table (4): Availability Degree of Organizational Culture Requirements for Network Leadership Implementation among Female Education Office Directors at Dammam and Khobar Cities from Female School Leaders' Perspective

No	Item	Agreement Degree										Mean	Standard Deviation	Rank	Availability Degree
		Very High		High		Medium		Low		Very Low					
		F	%	F	%	F	%	F	%	F	%				
36	An atmosphere of mutual trust and respect prevails among Education Offices and female school leaders	143	44.7	125	39.1	29	9.1	17	5.3	6	1.9	4.19	0.94	1	High
34	Collective responsibility value prevails among female Education Office directors and school leaders	117	36.6	134	41.9	51	15.9	15	4.7	3	0.9	4.08	0.89	2	High
37	The Education Office invests all school-based educational experiences	103	32.2	117	36.6	76	23.8	17	5.3	7	2.2	3.91	0.98	3	High

⁵ - Communication software are computer software allowing direct communication as well as open and closed meetings (e.g. television networks).

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32	Dominant organizational culture encourages easy information-exchange processes among schools	81	25.3	137	42.8	78	24.4	20	6.3	4	1.3	3.85	0.92	4	High
33	Dominant organizational culture encourages creative ideas generation and adoption	86	26.9	124	38.8	80	25.0	25	7.8	5	1.6	3.82	0.97	5	High
39	The Education Office seeks to promote female school leaders' assimilation of modern scientific innovations in both administrative and educational fields	90	28.1	133	41.6	60	18.8	20	6.3	17	5.3	3.81	1.08	6	High
35	Education staff have a scientific-cultural background on the concept of network leadership	79	24.7	110	34.4	98	30.6	27	8.4	6	1.9	3.72	0.99	7	High
38	The Education Office reinforces critical dialogue as a tool for discussing different administrative and educational issues	82	25.6	121	37.8	65	20.3	29	9.1	23	7.2	3.66	1.06	8	High
Total Average												3.88	0.84	-	High

Table (5): Availability Degree of Network Leadership Implementation Requirements among Female Education Office Directors at Dammam and Khobar Cities from Female School Leaders' Perspective

No	Implementation Requirements	Mean	Standard Deviation	Rank	Availability Degree
1	Leadership Requirements	4.25	0.63	1	Very High
4	Organizational Culture Requirements	3.88	0.84	2	High
2	Administrative Requirements	3.69	0.85	3	High
3	Technological Requirements	3.43	0.75	4	High
Total Average		3.81	0.66	-	High

II-Results for the Second Research Question:

Overall, results for the study's second research question can be divided into the following four sub-sections:

A-Year of Experience Differences:

Using the One-Way Analysis of Variance (ANOVA), study results revealed no significant difference between participants' response mean scores of the availability degree of network leadership implementation leadership, administrative and organizational culture requirements among Saudi Female Education Office directors, except for the significant technological requirements.

Notably, such high degree may be attributed to the fact that apart from their work experience, female school leaders, especially those with lower levels of experience, usually have a good perception of leadership, administrative and organizational culture requirements as well as continuous improvement.

However, results also showed a significant difference at the 0.01 level between participants' response mean scores of the availability degree of network leadership implementation technological requirements. In order to examine all possible contrasts for significance, the Scheffé Test was used indicating a similar significant difference between female school leaders with less than 5 years and those enjoying more than 10 years of experience. Accordingly, this result highlight that participants with 5-10 and more than 10 years of experience have a higher agreement level with the availability degree of network leadership implementation technological requirements among female Education Office directors at Dammam and Khobar cities.

Notably, such result may be attributed to the fact that most of the study's population members have a range of 5 to more than 10 years of experience. As a consequence, those long-term experts perhaps enjoy high levels of practice and knowledge of the available technological requirements that can be accessed and utilized in the field of education and administrative work as well as strive to improve the infrastructure that requires leadership awareness and experience, good knowledge and skill in employing advanced technology and Information Technology (IT) applications. On the other hand, these results may refer to participants with less experience who, as previously revealed, have much leadership awareness and experience. In this regard, the researcher add that those participants may not adapt to what was already available in practice and look forward to employing and staying up-to-date on the latest technology programs and the best hardware and software. In brief, if those participants are of younger ages, they will grow up with technological openness. Besides, they may be skillful in using technology at an advanced period of their

lives, unlike their peers with more experience and adaptability to the available resources, even if they have its minimum.

B-Academic Qualification Differences:

Using the Kruskal-Wallis H Test, study results revealed no significant difference between participants' response mean scores of the availability degree of network leadership implementation leadership requirements among Saudi Female Education Office directors attributed to female school leaders' academic qualification differences with the estimated non-significant value of 0.056 that is higher than the 0.05 significance level.

Notably, as previously highlighted in results for the study's first research question, such result may be attributed to the fact that regardless of year of experience and academic qualification differences, female school leaders have a close and similar awareness of network leadership implementation requirements resulting from their own everyday practice and benefit from participation in the training and professional development programs delivered by their organizationally-affiliated Education Offices. Besides, they may also have personal interest in improving their own leadership performance via further reading.

However, results showed a significant difference at the 0.05 level between participants' response mean scores of the availability degree of network leadership implementation administrative, technological and organizational culture requirements in favor of female school leaders holding credentials lower than bachelor's degrees both for the overall average rank of 285.80 and the following three sub-dimensions' average ranks consecutively ranging between 283.50 for administrative requirements, 283.10 for technological requirements and 276.90 for organizational culture requirements.

Notably, such result may be attributed to the fact that those experienced participants holding credentials lower than bachelor's degrees were hired in the past based on previous criteria. However, no one below a bachelor's degree is now occupying any educational leadership position. Therefore, this category is considered the most experienced. Meanwhile, they are also the least numbered, i.e. only 5 five female school leaders. Besides, such result also indicate that most female school leaders agree to the availability of administrative, technological and organizational culture requirements but not on their entirety as a whole. In other words, the implementation requirement may be partially fulfilled and need further improvement. Besides, this view may differ according to the educational levels and academic disciplines of participants with university and postgraduate qualifications enjoying openness to modern leadership styles and specifications of future leaders as well as in-depth scientific background enhancing their attitudes towards excellent performance.

C-School Type Differences:

Using the Independent Samples T-Test, study results showed a significant difference at the 0.05 level between participants' response mean scores of the availability degree of network leadership implementation technological requirements among Saudi Female Education Office directors in favor of female school leaders working at public schools ($M = 3.49$) rather than their peers working at private schools ($M = 3.25$).

Notably, such result may be attributed to the fact that Education Directorates are generally tasked with providing required potentials to all their affiliated public schools on equal footing according to budget allocations while private schools differ in terms of facilities and infrastructure due to each school's different frames of reference for their budgets and resources. Besides, facilities also vary in light school size and capacity. On the other hand, private schools make profitable financial gains that enable them to supply powerful infrastructure.

D-Education Office Differences:

Using the One-Way Analysis of Variance (ANOVA), study results revealed a significant difference at the 0.05 level between participants' response mean scores of the availability degree of network leadership implementation requirements among Saudi Female Education Office directors both for their overall average and the following three of the total four sub-dimensions: leadership, administrative and organizational culture requirements, except for the significant technological requirements.

Besides, the used Scheffé Test indicated a similar significant difference in favor of female school leaders affiliated to West Dammam Education Office both for their overall average ($M = 3.98$) and the following consecutive three sub-dimensions arranged in order: leadership requirements ($M = 4.40$), organizational culture requirements ($M = 4.07$) and administrative requirements ($M = 3.95$).

Notably, such result show that female school leaders affiliated to West Dammam Education Office have a higher agreement level with the availability degree of network leadership implementation requirements among their female Education Office director at Dammam city compared to other examined counterpart Education Offices in the Eastern Province, Saudi Arabia.

III-Results for the Third Research Question:

In order to identify the obstacles hindering the availability of network leadership implementation requirements among female Education Office directors at Dammam and Khobar cities from their own perspective, the researcher conducted semi-structured interviews with a selected sample of 2 participant female Education Office directors, calculated their response frequencies and concluded results. Overall, the female Education Office directors had a consensus on a number of prominent obstacles that can be totally divided into the following four main categories, namely:

1-Individual Obstacles, including lack of leadership skills and abilities, especially in the technical field, weak scientific knowledge, change avoidance or just keeping pace with occurring change without conviction.

2-Organizational Obstacles, including centralization of senior management, limited powers and inoperative authorities as well as insufficient budget that does not comply with Education Offices' requirements and responsibilities; thus negatively affecting both schools and the educational process. Uniquely, a participant female Education Office director mentioned such other significant obstacles as unclear job roles, weak performance measures and non-fulfillment of all selection criteria for some senior management leaders.

3-Cultural Obstacles, including lack of trust, motivation and appreciation. In particular, a participant female Education Office director highlighted imbalance between relationships versus performance as another significant obstacle.

4-Logistical Obstacles, including weak technological infrastructure at school level in all Saudi governorates and cities in general and regular inadequate speed, bandwidth outage as well as service down or interruption by Internet Service Providers (ISP).

Overall, the obstacles challenging the availability degree of network leadership implementation requirements among female Education Office directors at Dammam and Khobar cities came at two different levels: the senior management under which Education Offices are affiliated and the female school leaders who are, in turn, affiliated to such Education Offices.

No wonder then that the organizational obstacles were closely related to administrative centralization, limited powers and authorities as well as lack of motivation and

appreciation that reduces the desire for active network participation and opportunity for inquiry and experimentation to gain and build knowledge.

Likewise, individual obstacles also included absence of leadership's desire to initiate, experiment, develop, change and practise all innovations in addition to utilizing them in the educational process usually resulting in stability, stagnation and hindrance to building new abilities and competencies.

Particularly, one of the most prominent agreed-upon obstacles by members of the study's population as a whole was the remarkable weakness of physical (i.e. logistical) environment, infrastructure and modern technologies in terms of availability, adequacy and practicability.

Notably, interview results revealed a discrepancy between the opinions of both female Education Office directors and school leaders that may be attributed to female Education Office directors' transparency about the status quo as well as female school leaders' appreciation and loyalty to their higher-level senior management in addition to feeling that they do not disclose any encountered obstacles due to their knowledge of the continued and unremitting efforts to overcome such difficulties and barriers made by their affiliated Education Offices. This fact is also confirmed by the current researcher's practical experience in the field in her capacity as a school performance evaluation specialist as all mentioned obstacles are actually available in varying degrees, ranging from very high to low, at a number of Saudi schools.

IV-Results for the Fourth Research Question:

In order to identify the best ways of enhancing the availability of network leadership implementation requirements among female Education Office directors at Dammam and Khobar cities from their own perspective, the researcher conducted semi-structured interviews with a selected sample of 2 participant female Education Office directors, calculated their response frequencies and concluded results. Overall, the female Education Office directors overwhelmingly agreed to a number of prominent proposed best ways of enhancing the availability of network leadership implementation requirements, namely:

- 1-Measurement of female educational leaders' real performance, identification of their weaknesses and taking suitable corrective measures to seize improvement opportunities.
- 2-Delivery of a high-quality qualification to female educational leaders focusing on such modern leadership styles as network leadership.
- 3-Provision of necessary support to training and professional development.
- 4-Special and intensive training on modern technology use skills.
- 5-Strengthening infrastructure, providing adequate technological devices to all schools and increasing Internet speed by concerned Internet Service Providers (ISP).
- 6-Provision of appropriate appreciation as well as belief in improving and investing capabilities.

Uniquely, a participant female Education Office director mentioned such other significant best ways of enhancement as choosing highly efficient leaders to occupy senior management positions enjoying network leaders' characteristics, effective communication, prudence and flexibility.

Notably, both female Education Office directors emphasized the pivotal role played by the following mechanisms in fulfilling network leadership implementation requirements: effective communication and relationships, continuous training and qualification in various knowledge, skills and behaviors, including modern technology use skills, in addition to urgent need to improve infrastructure and increase Internet speed by concerned Internet Service Providers (ISP).

Research Suggestions and Recommendations:

In light of her study results, the researcher finally concluded providing a number of suggestions and recommendations for developing relevant practice and further research in the foreseeable future as follows:

1-Research Recommendations:

- To pay further attention to providing advanced network leadership in-service training and professional development sessions and workshops for both female Education Office directors and school leaders dealing with various network leadership characteristics (e.g. collaborative mindset and disciplined systems thinking), skills (e.g. self-management, reflective thinking and facilitation), behaviors (e.g. activation, framing, mobilizing and synthesizing) as well as relationships with leadership distribution in order to promote practical mastery of such skills and abilities in a networked context, particularly focusing in their content on mastering network leadership core competencies in Fourth Industrial Revolution (Industry 4.0) contexts.
- To provide high-speed Internet services at Dammam and Khobar schools as study results showed that concerned Education Offices currently provide them at a moderate level.
- To motivate Dammam and Khobar Education Offices to provide schools with advanced e-networks and communication software to support their educational and administrative activities as study results indicated that such offices currently provide them at a moderate level.
- To empower Dammam and Khobar Education Offices to provide schools with adequate modern computer sets as study results revealed that such offices currently provide them at a low level.
- To encourage female Education Office directors in the Eastern Province, Saudi Arabia, to effectively apply network leadership from a contextual perspective in tandem with its required implementation competencies.
- To design suitable systematic initiatives providing a helpful hand to preparing network leaders in order to promote their diverse forms of cooperation, collaboration and networking widely considered influential tools for developing their professional abilities.

2-Suggested Further Research:

- To examine the reality of practising network leadership behaviors within the collaborative structure of the local educational sector, whether within the boundaries of the educational institutions alone or the mutual interactions between such educational institutions and their counterpart community institutions, i.e. relevant stakeholders.
- To investigate the availability degree of network leadership implementation requirements among female Education Office directors at other Saudi regions and from other research perspectives, e.g. interviewing both female school leadership supervisors and Education Office directors.
- To suggest a proposed paradigm for promoting network leadership implementation practices by female Education Office directors in the Eastern Province, Saudi Arabia.
- To shed further light on network leadership implementation challenges encountered by female Education Office directors in the Eastern Province, Saudi Arabia.

- To conduct a longitudinal study focusing on network leadership skills and behaviors as well as their effects on the outcomes of a certain existing collaborative organization context (e.g. a professional learning community and the like).

References

1. Abu Allam, R. (2014). *Research Methods in Psychological and Educational Sciences*. Cairo, Egypt: Dar An-Nashr for Universities.
2. Abu El-Ela, M. (2014). *Electronic Networking between Non-Governmental Organizations (NGOs)*. Manama, Bahrain: Executive Bureau of the Council of Ministers of Labour and Council of Ministers of Social Affairs in GCC States.
3. Abu El-Nasr, M. (2013). *Future Leaders: Outstanding and New Leadership* (3rd ed.). Cairo, Egypt: Arab Group for Training and Publishing.
4. Abu El-Sheikh, A. (2010, January 9-11th). Role of higher education in building the Arab knowledge society in light of the challenges of the age. Paper Presented at the Proceedings of the 3rd Arab Conference of the Arab Administrative Development Organization on "Arab Universities: Challenges and Prospects" (ARADO'2010), Sharm El-Sheikh, Egypt.
5. Abu Sultan, N. (2014). Availability degree and ways of enhancing network leadership requirements at the Palestinian Ministry of Education and Higher Education in Gaza governorates. MA thesis, Islamic University of Gaza, Gaza, Palestine.
6. Agranoff, R., & McGuire, M. (2001). Big questions in public network management research. *Journal of Public Administration Research and Theory*, 11(3), 295-326.
7. Al-Amri, A., & Al-Mutairi, N. (2020). Reality of practising network leadership by female educational supervisors and its ways of improvement from the perspective of female secondary school leaders in Riyadh City. *International Interdisciplinary Journal of Education*, 9(2), 135-148.
8. Al-Ghamdi, A., & Abdel Gawad, N. (2010). *The Development of the Education System in the Kingdom of Saudi Arabia*. Riyadh, Saudi Arabia: Al-Rushd Bookstore.
9. Al-Ghamdi, N. (2020). The challenges and opportunities faced by Saudi Arabian women leaders in education during a period of rapid change in the Eastern Region of Saudi Arabia. PhD dissertation, Western Sydney University, Sydney, Australia.
10. Al-Ghamdi, S. (2017). Developing public school leadership performance in the Kingdom of Saudi Arabia in light of professional learning community dimensions: A proposed paradigm. MA thesis, Taibah University, Medina, Saudi Arabia.
11. Al-Ghanem, N.H., Braganza, A., & Aldhean, E. (2020). Distributed leadership in transformation initiatives: The emergence of network leadership. *International Journal of Accounting and Finance Review*, 5(1), 51-65.
12. Al-Kayed, M. (2018). Degree of practising network leadership by private university heads of academic departments in the capital Amman from faculty members' perspective. MA thesis, Middle East University, Amman, Jordan.
13. Al-Khabti, H. (2018). A proposed paradigm for developing school leadership using networks of professional learning communities at public schools in the Kingdom of Saudi Arabia. PhD dissertation, Imam Mohammad Ibn Saud Islamic University, Riyadh, Saudi Arabia.
14. Allmnakrah, A., & Evers, C. (2020). The need for a fundamental shift in the Saudi education system: Implementing the Saudi Arabian economic Vision 2030. *Research in Education*, 106(1), 22-40.
15. Al-Mehmadi, K. (2014). Degree of practising shared leadership by directors of Education Offices in Mecca and its relationship to morale from supervisors' perspective. MA thesis, Umm Al-Qura University, Mecca, Saudi Arabia.

16. Al-Zaki, A., & Hammad, W. (2011). Distributed leadership: Foundations and requirements for implementation at public schools in Egypt-An analytical study. *Port Said Faculty of Education Journal*, 10, 453-492.
17. Azab, E. (2018). Networking: An approach to activate knowledge management at public schools in Egypt. *Educational Management Journal*, 18, 389-521.
18. Bass, B.M., & Avolio, B.J. (1990). Developing transformational leadership: 1992 and Beyond. *Journal of European Industrial Training*, 14(5), 21-27.
19. Bass, B.M., & Bass, R. (2008). *The Bass Handbook of Leadership: Theory, Research, and Managerial Applications* (4th ed.). New York, NY: Free Press.
20. Bass, B.M., & Riggio, R.E. (2006). *Transformational Leadership* (2nd ed.). Mahwah, NJ: Lawrence Erlbaum Associates.
21. Beswick, A., & Clarke, S. (2018). Network principals in Western Australia: An examination of their influence and strategies. *Issues in Educational Research*, 28(3), 545-559.
22. Bolman, L.G., & Deal, T.E. (2008). *Reframing Organizations: Artistry, Choice, and Leadership* (4th ed.). San Francisco, CA: Jossey-Bass.
23. CEB, Inc. (2013). *The Rise of the Network Leader: Reframing Leadership in the New Work Environment*. Arlington, VA: The Author.
24. Colander, D. (2000). New millennium economics: How did it get this way, and what way is it. *Journal of Economic Perspectives*, 14(1), 121-132.
25. Coleman, A. (2011). Towards a blended model of leadership for school-based collaborations. *Educational Management, Administration and Leadership*, 39(3), 296-316.
26. Collinson, D., & Collinson, M. (2009). 'Blended leadership': Employee perspectives on effective leadership in the UK further education sector. *Leadership*, 5(3), 365-380.
27. Creswell, J.W. (1994). *Research Design: Qualitative & Quantitative Approaches*. Thousand Oaks, CA: Sage Publications.
28. Díaz-Gibson, J., Zaragoza, M.C., Daly, A.J., Mayayo, J.L., & Román, JR. (2017). Networked leadership in educational collaborative networks. *Educational Management, Administration and Leadership*, 45(6), 1040-1059.
29. Eissa, A. (2004). *Networking in Community Organization*. Alexandria, Egypt: Dar El-Maarefa El-Gameaia.
30. Fiedler, F.E. (1967). *A Theory of Leadership Effectiveness*. New York, NY: McGraw-Hill.
31. Government of Saudi Arabia (GSA). (2016a). *Saudi Vision 2030*. Retrieved from: www.vision2030.gov.sa.
32. Government of Saudi Arabia (GSA). (2016b). *National Transformation Program 2020*. Retrieved from: www.vision2030.gov.sa/ar/programs/NTP.
33. Green, R.L. (2017). *Practicing the Art of Leadership: A Problem-Based Approach to Implementing the Professional Standards for Educational Leaders* (Trans. by A. Al-Ammuri). Amman, Jordan: Dar al-Fiker for Publishing and Distributing.
34. Gronn, P. (2000). Distributed properties: A new architecture for leadership. *Educational Management and Administration*, 28(3), 317-338.
35. Gronn, P. (2009). From distributed to hybrid leadership practice. In A. Harris (Ed.), *Distributed Leadership: Different Perspectives* (pp. 197-217). Dordrecht, The Netherlands: Springer Science + Business Media, B.V.
36. Jopling, M., & Crandall, D.P. (2006). *Leadership in Networks: Patterns and Practices*. Nottingham, UK: National College for School Leadership.
37. Kania, J., & Kramer, M. (2011). Collective impact. *Stanford Social Innovation Review*, 9(1), 36-41.

38. Khiaw-Peng, C.-L. (2016). Leadership as network catalysts: A study of leadership as enacted by structures and processes of inter-organisational collaborations in the Singapore public sector. PhD dissertation, University of Manchester, Manchester, UK.
39. Kiggundu, E., & Moorosi, P. (2012). Networking for school leadership in South Africa: Perceptions and realities. *School Leadership and Management*, 32(3), 215-232.
40. Leithwood, K. (2019). Characteristics of effective leadership networks: A replication and extension. *School Leadership and Management*, 39(2), 175-197.
41. Leithwood, K., & Azah, V.N. (2016). Characteristics of effective leadership networks. *Journal of Educational Administration*, 54(4), 409-433.
42. Leithwood, K., & Riehl, C. (2005). What we know about successful school leadership. In W. Firestone & C. Riehl (Eds.), *A New Agenda: Directions for Research on Educational Leadership* (pp. 22-47). New York, NY: Teachers College Press.
43. Leithwood, K., & Sun, J. (2012). The nature and effects of transformational school leadership: A meta-analytic review of unpublished research. *Educational Administration Quarterly*, 48(3), 387-423.
44. Liou, Y.-H., & Daly, A.J. (2020). The networked leader: Understanding peer influence in a system wide leadership team. *School Leadership and Management*, 40(2-3), 163-182.
45. Makhlof, A.M.E. (2021). Saudi schools' openness to change in light of the 2030 Vision. *American Journal of Educational Research*, 9 (1), 52-60.
46. Mandell, M., & Steelman, T. (2003). Understanding what can be accomplished through interorganizational innovations: The importance of typologies, context and management strategies. *Public Management Review*, 5(2), 197-224.
47. Maqableh, M. (2018). Availability degree and ways of enhancing network leadership requirements at Taif University from faculty members' perspective. *Dirasat: Educational Sciences*, 45, 329-344.
48. McGuire, M. (2002). Managing networks: Propositions on what managers do and why they do it. *Public Administration Review*, 62(5), 426-433.
49. McGuire, M. (2006). Collaborative public management: Assessing what we know and how we know it. *Public Administration Review*, 66, 33-43.
50. McGuire, M., & Silvia, C. (2009). Does leadership in networks matter?: Examining the effect of leadership behaviors on managers' perceptions of network effectiveness. *Public Performance and Management Review*, 33(1), 34-62.
51. Ministry of Education (MoE). (2018). *Regulatory Handbook of Education Offices: Version 1 - The 1440-1441 AH School Year*. Riyadh, Saudi Arabia: The Author.
52. Morse, R.S., & Buss, T.F. (Eds.). (2008). *Innovations in Public Leadership Development*. Armonk, NY: M.E. Sharpe.
53. Muijs, D., Ainscow, M., Chapman, C., & West, M. (2011). *Collaboration and Networking in Education*. Dordrecht, The Netherlands: Springer Science + Business Media, B.V.
54. Noman, M., Awang Hashim, R., & Shaik Abdullah, S. (2018). Contextual leadership practices: The case of a successful school principal in Malaysia. *Educational Management, Administration and Leadership*, 46(3), 474-490.
55. Northouse, P.G. (2006). *Leadership: Theory and Practice* (Trans. by S. Al-Mayouf & M. Al-Boraie). Riyadh, Saudi Arabia: Institute of Public Administration.
56. Nosella, A., & Petroni, G. (2007). Multiple network leadership as a strategic asset: The Carlo Gavazzi space case. *Long Range Planning*, 40(2), 178-201.
57. Pino-Yancovic, M., & Ahumada, L. (2020). Collaborative inquiry networks: The challenge to promote network leadership capacities in Chile. *School Leadership and Management*, 40(2-3), 221-241.
58. Reinelt, C. (2010). How Is Network Leadership Different from Organizational Leadership and Why Is Understanding This Difference Important? [Blog Post]. Retrieved from:

- <http://leadershiplearning.org/blog/claire-reinelt/2010-05-18/how-network-leadership-different-organizational-leadership-and-why>.
59. Renée, M., & McAlister, S. (2011). *The Strengths and Challenges of Community Organizing as an Education Reform Strategy: What the Research Says*. Quincy, MA: Nellie Mae Education Foundation.
 60. Robinson, V.M.J., Hohepa, M., & Lloyd, C. (2009). *School Leadership and Student Outcomes: Identifying What Works and Why-Best Evidence Synthesis Iteration*. Wellington, New Zealand: Ministry of Education.
 61. Ruckdäschel, S. (2015). *Leadership of Networks and Performance: A Qualitative and Quantitative Analysis*. Wiesbaden, Germany: Springer Gabler.
 62. Schreiber, C., & Carley, K.M. (2008). Dynamic network leadership: Leading for learning and adaptability. In M. Uhl-Bien & R. Marion (Eds.), *Complexity Leadership, Part 1: Conceptual Foundations* (pp. 291-331). Charlotte, NC: Information Age Publishing.
 63. Scribner, J.P., Sawyer, R.K., Watson, S.T., & Myers, V.L. (2007). Teacher teams and distributed leadership: A study of group discourse and collaboration. *Educational Administration Quarterly*, 43(1), 67-100.
 64. Shaheen, M. (2018). *Knowledge Economy and Its Impact on State's Economic Development*. Cairo, Egypt: Dar Homysra for Publishing, Distributing and Translation.
 65. Silvia, C.E. (2010). *An examination of managerial and leadership behavior in intersectoral networks*. PhD dissertation, Indiana University, Bloomington, IN.
 66. Silvia, C.E. (2011). Collaborative governance concepts for successful network leadership. *State and Local Government Review*, 43(1), 66-71.
 67. Smylie, M.A., Conley, S., & Marks, H.M. (2002). Exploring new approaches to teacher leadership for school improvement. *Yearbook of the National Society for the Study of Education*, 101(1), 162-188.
 68. Stiver, D.C. (2017). *Catalyzing collective action: A grounded theory of network leadership*. PhD dissertation, Eastern University, St. Davids, PA.
 69. Strasser, T., de Kraker, J., & Kemp, R. (2019). Developing the transformative capacity of social innovation through learning: A conceptual framework and research agenda for the roles of network leadership. *Sustainability*, 11(5), 1-21.
 70. Townsend, A. (2015). Leading school networks: Hybrid leadership in action?. *Educational Management, Administration and Leadership*, 43(5), 719-737.
 71. Tremblay, C.W. (2012). Network leadership: An emerging practice. *College and University*, 87(4), 37-42.
 72. Trevor, J., & Kilduff, M. (2012). Leadership fit for the information age. *Strategic HR Review*, 11(3), 150-155.
 73. van Dijk, J. (2006). *The Network Society: Social Aspects of the New Media* (2nd ed.). Thousand Oaks, CA: Sage Publications.
 74. Vangen, S., & Huxham, C. (2003). Enacting leadership for collaborative advantage: Dilemmas of ideology and pragmatism in the activities of partnership managers. *British Journal of Management*, 14(1), 61-76.
 75. Wind, M.E.D. (2017). *Network leadership: Defining its continuum*. MA thesis, University of Twente, Enschede, The Netherlands.
 76. Wind, M.E.D., Klaster, E., & Wilderom, C.P.M. (2021). Leading networks effectively: Literature review and propositions. *Journal of Leadership Studies*, 14(4), 21-44.
 77. Yukl, G.A. (2002). *Leadership in Organizations* (5th ed.). Upper Saddle River, NJ: Pearson/Prentice-Hall.
 78. Zoller, H.M., & Fairhurst, G.T. (2007). Resistance leadership: The overlooked potential in critical organization and leadership studies. *Human Relations*, 60(9), 1331-1360.