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Scientific Paradigms in Iran's Educational Administration: A Critical Exploration

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Abstract

Many educational administration (EA) experts have voiced their concern over the lack of scientific attitude in Iranian schools' leadership. However, what has not been taken into consideration is the precise knowledge of the science of EA of these experts. This study is meant to delve into Iranian EA experts' perceptions of the scientific foundations of this field through an interpretive phenomenological approach. To that end, this paper carefully selected 11 experts for this study through the use of convenience sampling, as well as being sensitive to theoretical data saturation. Using indirect questioning methods, we sought to elicit their complex views. The findings bear great importance within the field and in terms of broader social implications. From a disciplinary perspective, the findings indicate a consensus between specialists that converges with the principles espoused by the theoretical movement. Socially, such notions indicate a phenomenon known as Identification with the Aggressor (IWA). Notably, the concerns pointed out by the experts regarding EA—such as insistence on uniqueness, the adversarial nature of the external environment, and power dynamics as potential threats—echo the propaganda of the oligarchic management ideologies.

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These findings compete with the historical theory of nation-state conflict when defining the historical and political texture of Iranian society. According to this theory, people from all social classes, even intellectuals, naturally resist all administrative systems' ideologies and refuse integration. The deviation of the results of this research from the theory of nation-state conflict implies a change in the socio-economic environment of society.

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Introduction

The school environment is complex and dynamic, posing a myriad of issues with which the school principal must contend. Drawing on experience alone is no longer sufficient to manage such complexities. For instance, it has been estimated that school principals deal with approximately 150 issues daily (Day et al. 2011). Many of these issues are novel and require innovative solutions, while societies hold a high level of scrutiny of the educational system's performance, viewing any misstep as catastrophic. Consequently, school management and leadership cannot rely on trial-and-error methods. They always require a strong scientific foundation that is already available in the knowledge of the field. By looking at the history of EA, we find that the field of EA did not have this strong scientific foundation in the beginning, and it was after some movements became dominant, which will be discussed further, that it was able to achieve such a strong theoretical foundation. Critiques of the school administration can be

broadly categorized into two groups. One segment scrutinizes EA as a scientific discipline, while the other focuses on EA as a practical realm in which school principals operate daily. In the former, researchers have compared EA with other social science disciplines, highlighting its perceived lack of theoretical and scientific rigor (Culberston, 1981). Conversely, within the operational context, some scholars have criticized school management practices, asserting that the administration of schools lacks a scientific foundation (Mohammadi, 2019). Furthermore, certain researchers have deplored the underrepresentation of EA graduates in school leadership roles, deeming this practice an unsystematic approach to education (Bigdely, Keramati, and Bazargan, 2023). A common thread across these criticisms is the shared belief that EA lacks a solid scientific foundation.

Although in all these studies it has been claimed that there is no scientific approach to the management of Iranian schools, none of these studies have clearly stated their definition and meaning of science. Some implicitly considered scientific as synonymous with meritocracy (for example, Abdollahi, 2013). Implicitly, being scientific for these researchers means that the position of school management should be entrusted to graduates in the field of EA. Some of these researchers (for example, Mohammadi, 2019) have considered scientific administration as administration based on the use of existing knowledge and research on EA; on this basis, implicitly, decision-making based on research has considered the existing theories to be scientific. However, these are only implicit understandings of the researchers' meaning of being scientific. However, the meaning of science in EA for these researchers is still unclear. Thus, exploring what these researchers mean by the science of EA leads to the philosophy of science. Exploring the philosophy of science is important because, by understanding the

meaning that researchers, scientists, and specialists of a scientific field have of the science of that field, it is possible to identify the cultures of different scientific research. In other words, examining this common philosophy among the members of a scientific society allows us to know what kind of intellectual tradition has cast a shadow on society's scientific and research work (Wray and Bormann, 2015). This philosophy specifies the concerns of the scientific community, and such concerns place them in special and different psychological situations. Some social psychology scientists, such as Fromm (2022), have pointed out that by understanding the trends and tendencies of a society (in this case, a scientific society), it is possible to determine what kind of political and economic system this society is receptive to. Fromm (2022) recognized the tendencies of people in different eras and countries to show that the acceptance and popularity of a special personality or movement that is clearly against freedom must be consistent with the structure of the character in the society. In other words, the tendency towards freedom or escape from freedom can be understood by understanding the hidden psychological philosophies of special actors. Therefore, by understanding the hidden meaning of science researchers, it is possible to understand what alternatives they have for the existing situation.

This study addresses a critical gap in the understanding of EA in Iran, where evidence indicates that the scientific foundations of the field require substantial development. Despite the importance of this issue, existing studies show the prevailing dominance of positivist methodologies in Iranian EA studies. For instance, Nemati and Shirbagi (2022) found that 89% of educational leadership studies employ a positivist approach, highlighting the reluctance to embrace qualitative methods (Mohammadi and Nazarzadeh Zare, 2014). This

methodological stagnation is mirrored in academic literature, where traditional paradigms dominate the discourse, leaving little room for innovative topics and narratives in EA (Mohammadi, 2022). Moreover, systematic reviews of school leadership studies in Iran reveal that transformational leadership remains the most frequently studied model, while alternative approaches such as distributive, collaborative, democratic, and instructional leadership are underrepresented (Hosseingholizadeh, Sharif, and Taghizadeh-Kerman, 2021). This underdevelopment has taken a course whereby Moridi (2012), in his review, reported that less than one percent of the studies address the real challenges facing Iranian society and its education system. Against this backdrop, the meaning of EA remains undetermined by specialists in the field. In other words, our study assumes that the explanation of the concerns and views of EA practitioners can provide enlightening details on how they conceptualize science within the field. At the same time, this research also tries to fill a significant gap in the literature and tries to give school principals, who have to work amidst rapid societal changes and advances in technology, an Umwelt where decision-making can be founded on scientific grounds. This paper seeks to critically engage with how scientific methodologies interface with educational leadership practices in ways that position school leaders to tackle complex challenges effectively while creating enabling contexts for learning and development. Ultimately, this study has the potential to change the way people think about educational leadership by offering a framework that embeds rigorous scientific inquiry with ethical considerations crucial for the shaping of education's future.

Exploration of Theoretical and Empirical Foundations of the Study

Unveiling the Evolution of EA Science: A Triad of Paradigms and Perspectives

Examining practitioners' perspectives sheds light on the historical underpinnings of EA science. This exploration reveals inherent contradictions in the interpretation of science within the discipline, mirroring the historical evolution of EA. We will now present three quite different paradigms, with their respective concerns and foundational assumptions: a) the theory movement; b) the interpretive movement; and c) the critical movement.

In the early 1950s, a division surfaced in the EA camp. On the one hand, many scholars in the field believe that most of the literature on EA is based essentially upon the experiential insights of teachers and managers; hence, it constitutes a field defined by a compilation of advice and personal beliefs from seasoned educational leaders (Griffiths, 1983). In contrast, following World War II, the incursion of the social sciences into the realm of EA introduced a plethora of rational notions relating to organizational efficiency and effectiveness within its discourse. By the mid-1950s, influenced by the spirit of logical positivism inherent in these social sciences and fueled by a general dissatisfaction with the field's prescriptive nature, the 'theory movement' emerged, advocating for a more scientific approach to knowledge in EA, grounded in quantitative positivism (Oplatka, 2010). Central to the theory, the movement was the quest for scientific leadership methods that school administrators could effectively implement. This entailed a shift towards basing school management practices on theories informed by scientific management methods rather than solely on individuals' personal experiences. Consequently, proponents of the theory movement sought to establish an

administrative theory that was distinct from subjective experiences (Hyung, 2001). Methodologically, the theory movement adopted a positivist perspective on science, with knowledge generation predicated on meticulous observation and measurement of an objective reality external to the researcher (Creswell, 2014). 7). From an organizational standpoint, entities are viewed as continuously adapting to their external environments, a perspective sometimes referred to as the modern paradigm (Hatch 2018). Organizations are conceptualized as objectively real entities operating within the tangible world, functioning as systems of decision-making and action driven by norms of rationality, efficiency, and effectiveness aligned with predefined objectives (Hatch, 2018). 15). In terms of leadership, the primary function was the creation of a coherent and efficient entity through the coordination and unification of diverse organizational forces. As a result, politics and power dynamics were seen as possible threats because leaders basically wanted organizational integrity and thus viewed conflicts and tensions to be disreputable. Internal cohesion, therefore, was stressed, along with the harmonious exchange of ideas and perceptions, to be vital to the leadership process.

Since the 1970s, the theory of EA has faced criticism from various quarters, with challenges arising regarding advocacy for qualitative methodologies, arguments questioning the relevance of theories to practitioners and school improvement, and reservations regarding the development of highly generalized and value-neutral scientific propositions (Oplatka, 2010, p. 33). These criticisms have spurred the emergence of a new paradigm in the scientific evolution of EA, known as the interpretive paradigm. This shift was also dubbed the Greenfield Revolution, named after Greenfield, a prominent critic of the theory movement who highlighted that the emphasis on control within EA

science leads to a detrimental separation of administrative and educational concerns (Greenfield & Ribbins, 2005, p. 220). Greenfield and Ribbins (2005) contended that the theory movement neglected values, human perspectives, and socio-political contexts that shape individuals. Methodologically, the interpretive paradigm is grounded in social constructionism, positing that individuals construct subjective meanings from their experiences (Creswell 2014). These subjective meanings are diverse and manifold, prompting researchers to seek a range of interpretations rather than confining them to a limited set of themes or categories (Creswell, 2014). 8). This paradigm resonated with organizational theorists who found traditional objective framework constraints. They believed that a nuanced interpretive approach complemented positivistic explanations by shedding light on different facets of organizations, especially those involving symbols and meanings that are open to varied interpretations (Hatch, 2018). 33). From an organizational perspective, the interpretive paradigm views organizations as social constructs shaped by the identity of their participants (Jun, 2006). In this paradigm, leaders are tasked with understanding and interpreting the experiences of organizational members, sharing multiple realities, rather than asserting a singular truth. The primary role of leadership is to foster a dialectical environment for the cultural engagement of organizational actors, emphasizing diversity (Jun, 2006). This necessitates a shift towards horizontal relationships, reduction in hierarchical structures, and enhanced communication. In this scientific framework, organizational decisions are expected to be made through the involvement of various stakeholders (Greenfield and Ribbins, 2005).

The third phase in the evolution of scientific thought within EA was critical. The leading figures in this movement included Bate, Foster, Evers, Lakomski, and English. They contested the notion that EA knowledge is controlled by dominant groups. While the interpretive perspective raised questions about practicality, the critical paradigm, especially as articulated by Bate, challenged the idea of establishing a scientific knowledge base and underscored the significance of the critical paradigm in educational organization research (Oplatka, 2010). Critical theorists consistently aim to expose unequal power dynamics within educational systems by introducing concepts such as hegemony, dominance, exploitation, and discrimination (Smyth, 2005; Hatch, 2018; English, 2003). Methodologically, the critical paradigm posits that the positivistic approach imposes structural laws and theories unsuitable for marginalized individuals in society, failing to address issues of social justice and discrimination (Creswell, 2014). From an organizational perspective, proponents of the critical paradigm argue that organizational realities are inherently intertwined with political concerns (Smyth, 2005). Organizations are viewed as political arenas in which interest groups vie for influence, with some groups possessing more power to impose their will on marginalized populations. Consequently, leadership in this context involves an agenda for reform or revolution that can potentially transform the lives of participants and their institutions. Some scholars advocate transformational leadership (e.g., Foster, 2005), while others advocate pedagogical and educative leadership approaches (e.g., Smyth, 2005). An examination of these paradigms reveals that different conceptions of science give rise to distinct sets of concerns. The nature of concerns for those viewing EA science through an interpretive lens differs from those who approach it from a positivistic standpoint.

Looking at specialist's concerns allows us to examine their views of the role of science within the profession.

It has to be noted that these movements were tailored by the scholars based in the United States, whose relevance is very limited outside of that context, especially in the Global South. It is necessary, therefore, to review the current status of study in this area in Iran.

The current status of EA in Iran

In 1967, the field of EA was established for the first time in Iran at Tehran University of Teacher Training and expanded to other universities in the country. Mohammad Ali Toosi, the founder of this field in Iran, played a prominent role in its establishment and advancement and is recognized as the father of EA in Iran (Nemati et al., 2020). In 1969, the first master's degree in EA was awarded in Iran, and currently, more than 23 state universities in Iran offer master's programs, and almost 12 universities offer doctoral programs in this major (Hosseingholizadeh, Sharif and Taghizadeh-Kerman, 2021). However, EA in Iran has not yet been able to continue its growth and development as an independent major among other areas of social sciences; it is still recognized as a subset of educational sciences due to its conceptual and practical connections with educational issues. One model for the lack of independence in this major is the absence of independent faculties or departments in Iranian universities. Many active professors in this major have expertise in areas other than education management. Additionally, many graduates of EA work in various education majors that are not necessarily related to school administration. Many individuals working as school managers not only lack expertise in EA but have also transitioned from teaching to school administration. To date, a specific program for the formal

training of school administrators in Iran has not been clearly defined (Nemati et al., 2020).

Education in Iran is dominated by a highly centralized political and ideological system, with key policies and decisions made by the government's central authority (Hallinger et al., 2017). The responsibilities and roles of school principals are delineated in regulations and policy documents formulated and monitored by the Ministry of Education. In practice, school principals are considered supervisors responsible for maintaining discipline within schools (Hosseingholizadeh et al., 2021). However, studies indicates that school principals in Iran do not effectively utilize the scientific knowledge available in the field of EA to fulfill their responsibilities; instead, their performance relies primarily on trial and error (Mohammadi, 2023).

In the realm of theory and research in EA, academic articles and texts often present a smooth and tension-free narrative of social, political, and organizational mechanisms, neglecting competition and conflicts among different power groups. Furthermore, the most popular and widely used school textbooks adopt a logical approach that overlooks the political dynamics and power struggles present in the school environment (Mohammadi, 2022). In this context, Rastehmoghadam (2019) observed a disconnect: on one hand, academic scholars possess limited awareness of the existing conditions and challenges of the educational system, while on the other hand, policymakers remain uninformed about research trends in the field of EA. It can be argued that the primary reasons for the existence of such disparities are the lack of dialogue between researchers and policymakers as well as the lack of critical examination of borrowed conceptual frameworks by scholars at universities.

Exploring the studies in EA

EA has experienced a diverse array of scholarly investigations in recent years, offering varied insights into leadership, epistemology, and contextual influences. A thorough examination of the literature reveals intriguing progress and ongoing discussions in this field. Ribbins and Gunter's (2002) seminal work sheds light on the multifaceted nature of EA, outlining five distinct domains: conceptual, critical, anthropological, axiological, and instrumental. This framework has provided researchers with a sturdy groundwork for exploring the complex interplay between leadership and epistemology in educational environments. Expanding on this foundation, Mokhtarian and Jahed (2013) propose that EA has advanced into a legitimate science capable of formulating theories with cross-cutting applicability across various scientific realms. Nevertheless, this field is not devoid of intricacies or contradictions. Hosseingholizadeh, Sharif, and Taghizadeh-Kerman (2021) challenged the idea of universal leadership principles and underscored the profound influence of cultural and contextual elements on school leadership approaches. This viewpoint emphasizes the significance of accounting for local subtleties when crafting and executing educational leadership strategies. Adding further complexity to the landscape, Hosseingholizadeh et al. (2017) illuminated emerging methodologies that question the established paradigms. Critical theory and feminism, in particular, have emerged as potent frameworks for scrutinizing and challenging traditional viewpoints in EA. These new perspectives have injected vibrancy into academic conversations, compelling scholars to reassess longstanding assumptions about educational leadership and administration.

Despite such developments, EA has been faced with major challenges. The theoretical fluctuation between the EA's diverse realms of EAs and

other management disciplines has produced a kind of ambiguity, and this may hinder the establishment of a coherent theoretical framework. This incoherence may induce a feeling of resistance to criticism and slow down efforts to work toward a resolution of theoretical discrepancies within the discipline. As EA continues to progress, it presents to the researcher a host of difficult challenges that must balance theoretical rigor with practical applicability. This dialogue between established frameworks and emerging viewpoints provides promise toward shaping the future of EA and, quite possibly, bringing in more nuanced and contextually sensitive approaches to educational leadership and management.

Method

In this study, our main purpose was to clarify the views of EA experts on the scientificity of this discipline. To that end, the authors used a qualitative methodology based on phenomenology. Phenomenology is concerned with the lived experience of people and their perceptions and meanings of a phenomenon (Mertens, 2010, p. 235). It has two possible modes: descriptive and interpretive. In the descriptive mode, the researcher aims to give an in-depth description of the phenomenon and achieve a structural understanding; for this reason, the researcher needs to bracket their subjective assumptions (Tuohy et al., 2013). On the other hand, interpretive phenomenology focuses on analyzing and interpreting experiences while focusing on the lived experiences of research participants (Bazargan, 2012, p. 157). Here, the researcher's assumptions are part of the findings, and understanding the phenomenon must combine meanings between the researcher and participants (Tuohy et al., 2013). Consequently, the present study utilizes interpretive phenomenology and, by incorporating the perspectives and experiences of EA specialists, provides a thorough

analysis and evaluation of the concept of knowledge in the field of EA in Iran.

The participants in our study were EA specialists from Iran, selected through purposive and convenience sampling methods. As a result, we identified several specialists with educational, academic, and practical experience in the field of EA in Iran. These individuals had teaching experience at universities as well as practical experience in schools, and they had published various scientific works—including articles and books—on EA in Iran. Notably, they explicitly stated in their publications that a scientific approach to EA does not exist in the country. Based on these criteria, along with their convenient accessibility and the theoretical saturation of the data (evidenced by recurring themes in their interviews), we selected 11 EA specialists as participants for this study. Table (1) presents the demographic characteristics, professional backgrounds, and the number of scientific publications related to EA for each participant.

Table 1.

Demographical and academic backgrounds of the participants

Interviewee Number	Gender	Academic major of expertise	Experienced background in a university	Experienced background in a school	The number of scientific works in EA	Highest degree
1	Female	EA	6	4	7	PhD
2	Male	EA	25	7	23	PhD
3	Female	EA	18	6	12	PhD
4	Male	EA	28	3	19	PhD

5	Male	EA	14	8	9	PhD
6	Female	EA	9	3	8	PhD
7	Female	EA	14	4	11	PhD
8	Male	EA	15	6	10	PhD
9	Male	EA	7	5	8	PhD
10	Male	EA	18	12	17	PhD
11	Male	EA	7	5	9	PhD

To collect data, we employed interview tools. In designing the interview questions, we considered that the participating specialists were recognized authors in the field of EA in Iran, who had explicitly indicated in their scholarly works that a scientific approach is lacking in this area. Consequently, the researchers crafted the interview questions to encourage an open and in-depth dialogue regarding the participants' evidence and documentation supporting their claims about the absence of a scientific approach in EA in Iran, as well as their suggestions for improvement. The researchers posed several key questions, including:

1) What evidence exists to suggest a lack of a scientific approach to school management in Iran?
2) What are the primary reasons for this deficiency?
3) What strategies can be implemented to address this issue?

These questions aimed to elicit further evidence and provide solutions regarding the assertions about the unscientific nature of EA, thereby uncovering the philosophical meanings embedded in the participants' perspectives. For instance, if a specialist indicated that the selection process for educational managers in Iranian schools is not scientific,

they would be prompted to provide evidence supporting this claim (referring to the first interview question). Consequently, all participants in our study consistently articulated, in various ways, that the approach to school management in Iran is indeed unscientific. Moreover, to minimize potential bias, the interviews were conducted in a semi-structured format. This approach allowed participants to fully express their viewpoints and, when appropriate, explore new topics that emerged during the discussions. For data analysis, we adhered to Creswell's methodology for analyzing phenomenological data (Creswell, 2007). Initially, we identified 122 significant statements from the interview data. These statements were subsequently segmented into semantic units through a bracketing process, leading to the identification of three distinct semantic units. These units were then condensed into a single overarching theme. Table 2 illustrates the analytical process undertaken. To ensure the validity of the data, we employed the member-checking technique. Member-checking involves presenting the findings to one or more participants for verification of accuracy (Creswell, 2012). We returned the results to the participants and solicited their feedback on the completeness and realism of the descriptions, as well as the accuracy of the identified themes.

Findings

Based on the findings from the analysis of the interviews, the specialists' perceptions of the nature of science in EA in Iran were categorized into one main theme and three semantic units. This theme and its associated semantic units are presented in Table (2), and we will further elaborate on them below.

Table 2.
Meaningful statements, semantic units, and main theme related to specialists' perception of the nature of science in EA in Iran

Theme	Semantic units	Meaningful statements
Oligarchic management ideology	The importance of elitism	• School principals do not have an education related to EA • There are unscientific rules in the selection of principals • There isn't a scientific system for the professional training of managers • Educational qualifications should be considered in the selection of school principals • The syllabus of the field of EA should be revised • There isn't meritocracy in educational leadership • University education in the field of EA is not skill-oriented • There isn't scientific supervision on the work of school administrators
	The hostility of the surrounding environment	• There are always political pressures from the outside of the organization • There are pressures from the outside environment to choose the wrong people • Education is influenced by the political pressures of the environment • Economic problems hurt the performance of educational administrators • In national policies, little attention is paid to education

	• There are conflicts between social classes which caused to destructive effect on education
Considering power relations as a threatening factor	• In organizational mechanisms, there is brokerage and transaction • From the point of view of the current managers, organizational positions are considered more political positions than organizational ones • Lobbying must be eliminated from the education • Organizational promotion is based on power relations

Oligarchic management ideology

The perceptions of EA specialists in Iran regarding the nature of science in their field, as well as the critiques and solutions presented in this study, closely align with the ideologies propagated by an oligarchic management system. Participants in the study emphasized several key findings, including the importance of elitism, the hostility of the environment, and the perception of power relations as threatening factors. These findings prompted us to consider Robert Michels' Iron Law of Oligarchy (2001). Michels' argument states that with the establishment of any organization, even those that are grassroots democratic, a small group of elite managers gradually consolidate control and prioritize their interests over the actual goals of the organization (Pugh & Hickson, 2007, p. 285). As a result, the organizational environment changes from a pluralistic to a one-sided environment in which democracy is replaced by oligarchy. According to Michels, oligarchic managers espouse ideologies that rationalize the gap between themselves and the rest of the workforce. These ideologies include the need for internal unity, the alignment of

perspectives and thoughts, the rejection of tensions and conflicts within the organization, the perception of the external environment as hostile, and the view that differences and diversity are a threat. Taken together, these ideologies are essential for the functioning of an oligarchic management system.

The importance of elitism

The study participants consistently emphasized the crucial role of expertise in the management of the education system. They argued that the management of educational institutions would not be successful without an elite approach to leadership. It was repeatedly reiterated in the interviews that only those with certain academic qualifications, such as a degree in EA, should be entrusted with the responsibility of leading others and making strategic decisions. Interviewee number 5 expressed this viewpoint with the comment:

> *The system of recruiting and preparing managers for school development is not scientific. Policies, legislation, and implementations are also not scientific. According to the principles of EA, gifted and talented individuals within the organization should be selected as the school's principal. Specifically, someone with a degree in EA and professional skills in school leadership. However, has this principle been implemented? I don't think so. Neither the foundational documents of education nor the program implementations are based on the principles of scientific management.*

The emphasis on the scientific principles of EA is so pronounced that some interviewees see these principles as the only yardstick for evaluating the efficiency of the education system. In this context, interviewee 7:

> *The reason our educational system is ineffective is that principals have not graduated from management-related fields, especially EA. School principals must have an EA degree to be effective, but unfortunately, this is not the case.*

Furthermore, the participants claimed that scientific supervision should be entrusted exclusively to persons of high standing. This belief emphasizes that only those with scientific expertise and professional competence are qualified to supervise others. This view is also evident in the comments of interviewee 8:

> *Without proper supervision, principals may not strive to improve their performance. Effective supervision requires a scientific approach, which can only be carried out by someone with a deep understanding of EA. Therefore, the supervisor should have a good knowledge of the subject matter. Without such expertise, competence and the ability to supervise cannot be guaranteed.*

The hostility of the surrounding environment

Study participants have consistently emphasized that many challenges within the education system resulting from unscientific approaches to school leadership problems are primarily the result of political, cultural, and economic pressures outside of education. Consequently, they perceive the external environment as a hostile influence. This view was expressed by several participants. For example, interviewee 2 notes:

> *The selection of the wrong people is often influenced by external pressures. The external environment imposes its preferred individuals on the educational system, forcing them to select or hire them.*

This quote is very indicative of the fact that the interviewees are very critical of the education system and attribute some of its failures to external factors. The term "external environment" refers to the political, economic, social, and cultural framework that surrounds the education system. Consequently, some interviewees criticized the interference of government officials in decision-making processes in education (Interviewee 3):

> *Governors frequently interfere in educational decisions, including staff selection and various educational policies. This interference makes it practically impossible to follow a scientific approach.*

Some of the participants also believe that the importance of education in the country's politics has diminished (interviewee 8):

> *The value of education is often neglected in decision-making in Iran, leading to a shortage. Due to this lack of attention, the elite are reluctant to work in schools.*

Some participants also identified class conflicts and ethical dilemmas as social problems that contribute to the failure of the education system (Interviewee 9):

> *Race and class conflicts affect the performance of the education system and lead to biases and prejudices that make a scientific approach impossible.*

Others have highlighted economic pressures and deficits as detrimental factors (interviewee 1):

> *Insufficient funding has caused numerous problems in schools, making it difficult for school leaders to cover basic expenses.*

Interestingly, some of the interviewees also proposed solutions to address the problem of environmental hostility, but these solutions are aimed at the external environment. Consequently, they view the education system as a passive entity whose fate is determined by its environment. In this context, some of these proposed solutions look to external institutions to solve the problem. Interviewee 6, for example, advocates institutionalizing the importance of education in the country's political decision-making processes and sees this task as the responsibility of institutions such as parliament. Similarly, interviewee 8 suggests reducing the dependence of the education system on external pressure, attributing this responsibility to economic institutions rather than schools.

Considering power relations as a threatening factor

The study participants see the power dynamics within the organization as a threatening element. They believe that one of the reasons for the lack of popularity of a scientific approach lies in the power relations within the organization. Their idea of an effective educational system involves a harmonious and cohesive unit in which conflicts within the organization are managed. So if not all members of the organization are oriented toward the organizational goals and set aside individual demands, the organization will be ineffective. Some participants pointed out that the attitude of managers is influenced by power relations.

> *What counts as a criterion in hiring is based on relationships rather than the scientific competence of individuals. Those who have managed to establish closer relationships with the powerful groups in the organization have a better chance of being hired than others, even if he or she does not have the necessary skills for the job (interviewee 3).*

In addition, they mentioned that the promotion of managers is often based on personal relationships.

> *Many employees are promoted, but this promotion is due to the close relationship they have with a particular manager (Interviewee 3).*

Many participants also noted that the decision-making processes are predominantly transactional.

> *Many employees are promoted based on relationships rather than merit. In our education system, some managers trade recommendations with each other and turn education into a bargaining market. It is disheartening that education management has become a marketplace for negotiation (Interviewee 2).*

Discussion and conclusion

Our study aimed to understand specialists' perceptions of the nature of science in EA in Iran and comprised two types of findings. One type included findings with explicit meanings, while the other encompassed those with implicit meanings. The explicit findings indicate that three concepts—emphasis on the importance of elitism, the hostility of the surrounding environment, and the consideration of power relations as a threatening factor—are associated by EA specialists with the meaning of EA science, reflecting the first-generation of scientific development in EA, specifically the theory movement. In the theory movement, the prevailing state of school management was consistently criticized for being experience-based and unscientific. Proponents of this movement sought not only to establish a scientific approach in school management but also to liberate the field of EA from merely recounting the experiences of successful managers, advocating instead for the integration of

principles and teachings from the social sciences. Furthermore, within the theory movement, schools were envisioned as living systems that interact with their external environment. This interaction involves not only resources and inspirations but also external pressures that impact schools; based on the assumption of living systems, schools must adapt to these pressures. Ultimately, the theory movement largely disregarded power relations within organizations, often viewing them as unjust and detrimental. Consequently, the concepts of coordination and coherence consistently emerged in the literature of the theory movement. Reason: Improved clarity, vocabulary, and technical accuracy while maintaining the original meaning.

In the implicit findings, we discover that EA specialists consistently critique the current state of schools, implicitly highlighting that the primary issue arises from the discord between this state and the principles of oligarchic management. On one hand, this suggests that EA specialists censure educational administrators for their failure to implement oligarchic ideals. On the other hand, oligarchic managers acknowledge this failure but exploit it as a pretext to strengthen their power bases. This phenomenon draws attention to the theory of identification with the aggressor, a mechanism through which some victims of aggression cope with their helplessness by adopting an aggressive stance. Though initially advanced within psychoanalysis to explain the response of abused children, the theory of IWA has come to be gradually applied in several social contexts. Importantly, with the discovery of concepts like Stockholm syndrome and studies such as the one conducted by Zimbardo, it is postulated that IWA goes past childhood experiences to include adults (Frankel, 2020).

These research results also reveal that Iranian EA professionals are no exception in maintaining similar concerns perpetuated through the

oligarchic management system. This shows that they support analogous ideologies, therefore, indirectly joining forces with the aggressor. According to Burnham (1941), it is not only the managers who develop such ideologies; the intellectuals in society also share these ideas and shape an atmosphere that helps these ideologies reach the threshold of popular acceptance. All this is reflected in the university textbooks written by these authors, which are often devoid of tension, dispute, and contradiction across the textbooks' pages (Mohammadi, 2019). A fundamental question arises regarding why EA specialists, despite their familiarity with contemporary management approaches, continue to emphasize elitism rooted in the initial wave of EA theories. According to the assumptions of the IWA theory, EA specialists have been consistently marginalized in the decision-making and policymaking processes of the educational system, rendering their voices unheard. This marginalization has led them to seek validation in the belief that only the perspectives of elites and EA specialists should be acknowledged. Various studies conducted in Iran indicate that the lack of qualifications in the selection and appointment processes for educational managers has long been a significant issue. For instance, only 20% of school managers possess the appropriate qualifications for their positions, meaning that 80% hold degrees unrelated to management or EA (Shirazi, 1994). More recent research reveals that this statistic has escalated to 88% (Abdollahi, 2013). These figures suggest that many of the most qualified graduates in this field—those who have studied at prestigious universities in Iran—remain unemployed. Reports indicate that 55.2% of graduates from Tehran University are jobless (Ghayasvand, 2017), 53.4% from Allameh Tabatabai University are unemployed (Rahimian, Jahani, and Nouruzi, 2018), and 60.9% of graduates from the University of Tehran lack employment (Bigdely,

Karamati, and Bazarghan, 2012). Consequently, such neglect has led EA specialists to perceive themselves as the "Other." When this sense of being the becomes pronounced, it compels some individuals to believe that the only way to assert their voices is to position themselves as unique and distinct. As a result, EA specialists have consistently emphasized the notion of elitism, as this concept appears to provide a means of revitalizing their identity and offering a new sense of belonging to an overlooked group—even if this identity is inherently extreme and authoritarian. This IWA framework can also be examined in the leadership approaches prevalent within organizations. An approach that recognizes only senior organizational managers as the elite and deserving of leadership, while disregarding others, fosters an environment dominated by a singular voice.

Although this approach may prove successful in the short term, allowing leaders to maintain their positions of power, it ultimately leads to various factions of followers believing themselves more deserving of leadership within the organization due to their desire for recognition. Whether this perceived merit is based on educational qualifications and fields of study—as proposed by EA specialists—or on work experience claimed by other employees in unrelated fields, or on any other form of qualification, the insistence on elitism and the self-perception of being elite are consequences of the oligarchic leadership model. Such ideologies can pose a risk of elite dictatorship, as there is always the danger that any group of organizational or non-organizational actors, such as the participants in the present study who are not members of the educational organization, may consider themselves elite and deserving of leadership, thereby depriving others of such rights. This transformation shifts the organizational environment from a multi-voiced to a singularly voiced atmosphere.

The tendency toward IWA in EA in Iran contradicts the assumptions of state-nation conflict theory, which analyzes the historical and political context of Iranian society (Katouzian, 2003; Katouzian, 1981; Katouzian, 2010). According to this theory, Iranian governments have historically been autocratic and inherently despotic (Katouzian, 2010). The authoritarian nature of the political and administrative apparatus has rendered social classes largely insignificant, with all classes dependent on the ruling political figure—namely, the Iranian kings (Katouzian, 2003). This dependency fosters a perception of insecurity among social classes, leading them to justifiably believe that they lack control over their destinies, as well as their financial and physical safety (Katouzian, 2010). However, rather than acquiescing to the ideas of those in power, individuals actively oppose them, resulting in any thoughts emerging from the political and administrative system facing resistance from various societal classes (Katouzian, 2003; Katouzian, 1981; Katouzian, 2010). This opposition may stem from the fact that the king, as a representative of the power apparatus, despite wielding unrestricted authority, also lacks financial and physical security, making him vulnerable to losing power and influence at any moment due to aggression or intrigue. Consequently, there is an ongoing and evident conflict between the government and the populace across all social classes (Katouzian, 2010). Where the state-nation conflict theory stands in contrast, the results of this study point out that at least part of the population has accepted the ideologies of the political and administrative system and have aligned themselves with it. This may be due to oligarchic managers who maintain solid and secure power bases in organizations. The strength and depth of this foundation will make the EA elites believe that by joining the doctrines of the oligarchic system of management, they can become more secure and their voices louder. The given scenario indicates a change in the socio-economic

setup of Iranian society, stating that it is not despotic anymore. This change is evidenced by oligarchic managers gaining control over the means of production and establishing a secure economic and political foundation for themselves. In other words, at least one social class within Iranian society has successfully attained a robust and long-term base, creating stable conditions for its existence. Historically, no class, including administrative managers, has been able to secure long-term resources and stable conditions, remaining dependent on the ruler. However, today's managers in Iran have achieved a degree of independence and established a sustainable foundation. This development may lead us to anticipate a managerial revolution (Burnham, 1941). Burnham (1941) posits that during a managerial revolution, the class of managers dominating the country's bureaucratic apparatus gradually seizes economic, political, and cultural power, gaining control over the means of production. Consequently, the only dominant class in society, whose voice is heard, is the class of oligarchic managers responsible for overseeing and controlling organizations and administrative institutions. Such a situation creates a secure economic and political base for these managers (Burnham, 1941) and may lead to the identification of other social classes, particularly the middle class, with them.

Implications and limitations

These findings, related to the comprehension of specialists of the nature of EA science in Iran, have very important implications. The first implication underlines the need for a dominant scientific paradigm of EA in Iran, which can reduce reliance on personal experiences and improve theoretical and scientific coherence in this respect. The second implication concerns the interest in social and political dimensions regarding EA in Iran since the dominant

oligarchic ideology within the educational system prevents conditions of justice and efficiency for education managers. As a result, it should be underpinned with a more democratic management structure and social participation to increase general trust within the community and simplify education processes. This study finally focuses on the fact that the managers' confidence, through strengthening their power base and provisioning of appropriate conditions to express their voice, will contribute to an effective and sustainable management system in the EA in Iran. Note that this study is also bounded by several limitations, which affect generalisability and applicability.

First of all, the sample size restricts the scope of the investigation since it only includes 11 specialists. This sample size enables qualitative insights in great depth but might be insufficient to generalize to a greater population of EA specialists across Iran. It is thus quite conceivable that some aspects within the field could not have been portrayed by these results and therefore limit transferability to another context. The present study was based solely on the use of convenience sampling; such methods could yield a nonrepresentative sample of the targeted population. This might affect our conclusions and make findings not generalizable. Lastly, these results are situated in the specific social and cultural context of this study, and this may hence limit the generalizability of findings to other contexts or educational systems. Consequently, future research should be more comparative, reaching across different educational settings to establish a better understanding of the scientific bases of EA within diverse cultures and political contexts.

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Research in Educational Administration & Leadership

Cultivating Resilience During the COVID-19 Pandemic: Voices from Principals in the U.S.

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Abstract

At the height of pandemic-era procedures amidst great changes and uncertainty, school principals across the world were challenged to navigate and restructure ways to lead their schools. While leveraging crisis management leadership, principals needed to be attentive and adaptive to the emotional wellbeing and health of their employees. Today scholars are beginning to understand how school principals navigated the challenges presented by the COVID-19 pandemic and to explore the tensions principals experienced as they attempted to balance equity, excellence, and accountability while being mindful of both the wellbeing of students, families, and teachers, and their schools' outcomes. However, there is still limited research examining principal wellbeing

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alongside resilience factors during the COVID-19 pandemic. In order to understand ways in which principals build resilience during the COVID-19 pandemic, this paper examines the perceptions of work-related stressors of public-school principals in the state of California and the strategies that these principals used to cultivate resilience. We employ ecological system theory to examine how principal wellbeing is influenced by the interaction of their surrounding systems. Our results indicate a complicated, synergistic web of wellbeing that converges among systems, relationships, mental health, and moral/ethical foundations that work to construct and constitute factors of resilience which nurtures their wellbeing. Implications for policy, practice, and research are discussed.

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Introduction

The COVID-19 pandemic dramatically impacted the work of school principals and leadership practice. Over the past four and a half years, principals have been faced with the challenge of leading amidst great changes and uncertainty (Harris & Jones, 2020). Principals need not only to engage in effective communication and facilitate sensemaking amidst uncertainty, but also be attentive to the emotional wellbeing and health of their employees (McLeod & Dulsky, 2021). However, the recent pandemic crisis differs from other catastrophic events in its year-long impacts and how they unequally affected individuals and communities. Therefore, principals were put in a position not only to practice crisis leadership (Grissom & Condon, 2021) but also to lead

schools for equity—an unprecedentedly challenging role for many leaders. Furthermore, in many states in the U.S., principals also faced financial constraints, anticipated state budget reductions, and had to cope with remote instruction for the majority of the 2020-2021 school year—a set of particular challenges that arose in the state of California. In such circumstances, the responsibilities of principals have to expand to accommodate the ongoing challenges, and that can inadvertently undermine leader and principal wellbeing.

With some urgency, scholars worked to understand how principals navigated the challenges faced during the pandemic (Fernandez & Shaw, 2020; McLeod & Dulsky, 2020; Netolicky, 2020). Notably, Netolicky (2020) explored tensions that principals experienced when implementing the pandemic-era form of schooling as they adapted their leadership to balance equity, excellence, and accountability while being mindful of the well-being of students, families, and teachers and attending to school outcomes. The various demands principals faced throughout the period put them in jeopardy of high levels of stress and, ultimately, burnout. This is particularly concerning as the levels of stress and burnout magnified the already increasing rate of principals leaving the profession. For instance, according to the National Association of Secondary School Principals (NASSP; December 2021), the pandemic conditions contributed to alarming rates of principals expected to leave the profession. Specifically, they found that 4 out of 10 surveyed principals were planning to leave the profession within the subsequent three years. To minimize the already high levels of stress, burnout, and turnover of principals, it is imperative to better understand ways to support the resilience of our principals.

The purpose of this study is to examine ways in which principals cultivated resilience during the pandemic. We sought to answer to the following questions:

- What kinds of work-related stressors did school leaders encounter during the COVID-19 pandemic?
- How did school leaders cultivate resilience as they led their schools during the COVID-19 pandemic?

Our investigation was guided by the ecological systems theory and risk and resilience framework in order to best understand how principals cultivate resilience across the different levels of their surrounding ecological contexts whilst fostering their wellbeing in a period of uncertainty and crisis.

Theoretical Framework

Principals, as the heads of school communities and representatives within the district, are influenced by a synergistic web encompassing the surrounding ecological contexts in which they work. Thus, we employed the ecological system theory (Bronfenbrenner & Morris, 2006) to examine how school leader's wellbeing is influenced by the interaction of their surrounding contexts with a focus on resilience as a primary driver towards wellbeing. In our study, Bronfenbrenner's articulation of the various systems becomes particularly useful when investigating an already complex endeavor made critically complex by natural disasters and urgent situations. Additionally, we employ a risk and resilience framework to understand how principals cultivated resilience to overcome the stressors present in the COVID-19 context. These two conceptualizations work in tandem to elucidate which contextual factors might protect leaders from certain risks leading to

burnout within their role while moving to offer a framework for how principals navigate and negotiate their wellbeing as they move through and among various levels of their ecological systems.

Resilience of School Principals

Recent educational research has turned to resilience to combat the high levels of risk factors experienced by both educators and principals. Resilience, in leadership literature, can be understood as "a relative, evolving, and dynamic social construct that seeks the adaptation and positive development of individuals in the face of difficult circumstances" (Day & Gu, 2013). When examining the development of resilience in principals, the literature on leadership resilience suggests that individual factors such as academic optimism, trust, hope, and ethical purpose have been found to be qualities of resilient principals (Day, 2014). Furthermore, research on resilience among educators suggests that in addition to individual factors, the impact of contextual factors such as policies and the school climate within which they operate can impact the development of individual resilience (Harrison, 2012). Therefore, similar to educator resiliency, when making sense of principal resiliency it is important to adopt an ecological view to understand their experiences within broader social, cultural, and political arenas that either challenge or foster their resilience. Despite the growing literature on leadership resilience, there is a scarcity of research examining principal resilience as a factor in combating the stressors faced by principals during the COVID-19 pandemic. Understanding how to best support principals in the context of the pandemic through a resilience lens may help us better prepare for future extreme conditions that schools could possibly face.

In a recent turn to broaden concepts of resilience, researchers have urged inclusion of the contextual and environmental factors that shape

the experiences of resilience and risk for educators (Edwards, 2007; Moos et al., 2011). The conceptual development suggests the need to understand principal wellbeing not just by the individual's inner workings, but also by how the individual principal engages with a synergistic web of interconnected factors including stressors, contexts, interactions, and various resilience tools. Gurr and Drysdale (2007) highlight the power of networks in providing the capacity for personal growth and resilience. Whilst leaders can be introduced to new ideas for new experimentations through these different networks, they may serve as a safe zone providing stability, support, trust, and security.

Existing literature currently focuses on the individual level or conceptualizes resilience as individual characteristics or traits rather than a process situated within a broader context of interacting systems and levels that confer meaning and material conditions upon the individual. Thus, there is a lack of empirical understanding of the resilience process in an ecological framework that would render a thorough understanding of how individuals process and navigate stressors and resilience as one of the primary forms of principal wellbeing.

Ecological Systems Theory of Education

Bronfenbrenner (1979) theorized an ecological systems model for child development as a framework for understanding a broader conceptualization of human development that started with recognizing the role of the environment on development as well as implications for how researchers study development. The most recent iterations of the Ecological Systems Theory of Development (Bronfenbrenner & Morris, 2006) become particularly useful for understanding the multiple intersecting and co-constitutive forces that make up the context of any actor within the field of education. Given

the lack of attention regarding the experiences of principals during the pandemic, Bronfenbrenner (1979, 2006) offers a potent framework for understanding how an individual develops inside and in negotiation with the multiple, interacting, constitutive components of the environment around them. Additionally, the interactions between the individual and multiple aspects of their ecology become of critical importance as researchers endeavor to more fully understand and support the work of principals. For principals, the material fruition of the components differs, but the framework of how those components interact with one another to form the total development of the individual does not.

Principals do not operate within the narrow confines of their school spaces, which Bronfenbrenner conceptualizes as microsystems (Bronfenbrenner & Morris, 2006). Indeed, the nature of the principal's role requires that the individual occupying said role interacts with all actors within their immediate contexts in what Bronfenbrenner's model would conceptualize as mesosystems such as students, teachers, staff interactions while also engaging with social structures (exosystem) that are not directly interacting with the principal on a day-to-day basis but still influence their overall development and wellbeing. According to Bronfenbrenner, the manifestations of the exosystem (e.g., district apparatus, federal department of education, media, and in some cases state officials) also mediate the experience of the individual. While Bronfenbrenner constructed a framework to understand child development, the main tenets of his theory can be used to understand the multiple layers of systems that interact, resulting in any one person's development or, our use, wellbeing. Although Bronfenbrenner's ecological systems model has been mostly leveraged to understand the various interactions and linkages that

converge to give rise to a single organism's development, we employ the theory to also make sense of the individual's development around particular psychological functions such as resilience in their overall wellbeing. Based on this perspective, this study will examine the ways in which context plays a role in principals' experiences in the complex and dynamic contexts in which they are expected to adapt and take action. This leads us to relate to the notion of resilience, which lies at the "interface of person and contexts, where principals use strategies to enable them to overcome challenges and sustain their commitment and sense of wellbeing" (Volet, 1999).

To effectively situate principal resilience and stressors as one synergistic slice of their wellbeing, we bring Bronfenbrenner's ecological systems theory of development together with recent conceptualizations of resilience theory of education practitioners to honor the lived experiences of principals as they navigate their own environments and factors that might be constitutive of their wellbeing. We submit a framework that not only considers the individual and its accompanying environment, but also the interactions that individual has with their environment, and how those interactions might be part of a broader system that helps researchers consider resilience as not just a trait pertaining to the individual's capacities to respond to adverse circumstances and conditions.

The Study

This research endeavors to explore how principals cultivated resilience as they led their schools during the COVID-19 pandemic. We investigate this question by advancing a theory that sees resilience as a product of personal and professional interactions, navigating through beliefs, structure, systems, and conditions that, in turn, are influenced by factors in the micro, meso, exo, and macrosystems.

Together, these systems enable researchers to more fully honor the lived experiences of school principals in a way that sheds light on how school principals faced risk factors associated with their roles while pursuing and fashioning multiple forms of resilience.

Methods

Participants

The study is based on convergent mixed methods research design (Creswell & Creswell, 2018) in which follow-up qualitative research questions were administered in a second wave survey to find answers to questions raised in a previously analyzed survey implemented as part of the first-wave of research. Data was collected online in the fall of 2021 from 209 (67% female; n = 141) K–12 active school principals in California. The data used for the present paper was part of a larger research project examining principal's risk and protective factors throughout the COVID-19 pandemic. The racial/ethnic background of our participants was as follows: 5% Asian/Asian Americans, 7% Black or African American, 61% Caucasian/White, 16.5% Hispanic/Latinx, 10% Multiracial, and 1% Native American. With regards to educational background, 8% of our participants held a bachelor's degree, 77% held a master's degree, and 11% held an EdD or PhD. No specific information regarding the leaders and their school profiles is provided to ensure the privacy of the participants, and researchers followed all the ethical procedures in the data collection and analysis procedures mentioned in the remaining parts of this article.

Procedures

Our team used a snowball sampling method to recruit principals through alumni and director networks, California Department of Education listservs, social media, and e-mails from research team

members. Participants' demographic information and survey responses were collected using the university's online survey platform. All procedures were approved by the institutional review board at the author's affiliated university.

In accordance with a convergent mixed methods approach (Creswell & Creswell, 2018), data used for the current analysis were drawn from a Likert scale measure on stressors experienced by principals as well as from two open-response questions on additional stressors and principal resilience. The first open-response question followed the Likert scale measure on stressors and asked: "*Are there any other stressors you would like to share about that you have experienced in the 2021-2022 school year? Please describe.*" The second open-response question appeared at the end of the survey and asked: "*We'd like to learn from your personal resilience strategies during these unusual times. Please tell us about the strategies you used to support your resilience during the pandemic and if possible, what made these strategies successful.*"

Having collected the data, the research team analyzed the Likert scale stressor terms using descriptive statistics. The open-response stressor and resilience data were analyzed using a descriptive thematic analysis procedure (Braun & Clarke, 2006), comprising the following stages: "familiarizing oneself with the data, initial code generation, identifying themes, reviewing themes, defining and naming themes". Two doctoral student researchers created a codebook to describe the principals' various resilience factors. They then separately coded all the open-ended responses and met to resolve inconsistencies by using a negotiated agreement approach (Campbell et al., 2013). Once the coding process was complete, the code labels were grouped to generate sub-themes of both factors using thematic analysis. One of the researchers in the project team analyzed the emergent themes in

comparison with the codes and categories developed in the final codebook. After a series of data analysis meetings, the project team finalized the analysis and labeled the themes and sub-themes in conjunction with the research questions (Braun & Clarke, 2006). During these meetings, we challenged both our thinking and our interpretation of the data (Maxwell, 1996) whilst specifically focusing on the words and phrases used in the data. With these collection and analysis procedures, any issues of bias and validity were addressed.

Positionality

While the authors of this study come from various backgrounds, it is important to note that our diversity and various social locations within the field of education constrain complete objectivity. Yet, we also note that our combined, diverse sets of identities and social locations afford a depth of insight, familiarity (Bourke, 2014), and attention to the voices and experiences of school principals—a role that some of the authors have previously occupied. As many of us are former educational leaders, we recognize that some of us have particular proclivities toward attending to issues of resilience, justice, and equity in educational leadership practice. Further, we all come to the data with a certain attention to the ways in which the systems mediate actors within the field as they engage in their roles which may work to afford a constructionist approach to a thematic analysis (Braun & Clarke, 2006). While our diverse backgrounds and experiences may signal potential biases, the range of experiences (psychologists, researchers, and former public school leaders and teachers) also affords reliable checks to potential biases. Additionally, our collective familiarity with the normative contexts of people in the roles occupied by our participants provides us with insight into how to pose certain questions, investigate certain patterns, and detect nuances in

participant responses. Finally, we note our differences in theoretical and conceptual areas of expertise. While the various differences could constrain a level of agreement in some areas, our divergent areas of expertise afford a more nuanced conceptualization and analysis than would otherwise be had with a singular theoretical approach to the data. The result is the aforementioned development of an ecological framework of resilience towards principal wellbeing. Taken together, the aforementioned factors provide conditions for a thorough and cogent analysis of the data.

Results

The findings are presented in two sections: First principals' perceptions of risk factors were revealed within the frame of work-related stressors. Then we share the strategies used by the principals by showing the ways in which they cultivate resilience during a challenging time and context. Within each section, the stressors and resilience factors at the personal, micro-, macro-, and exo-system levels are explored in order to answer the overall research question: How did school leaders cultivate resilience as they led their schools during the COVID-19 pandemic? The following model conceptualizes the risk and resilience factors that influence principal well-being mapped onto the ecological systems model. Each part of this model will be further explored in the following sections.

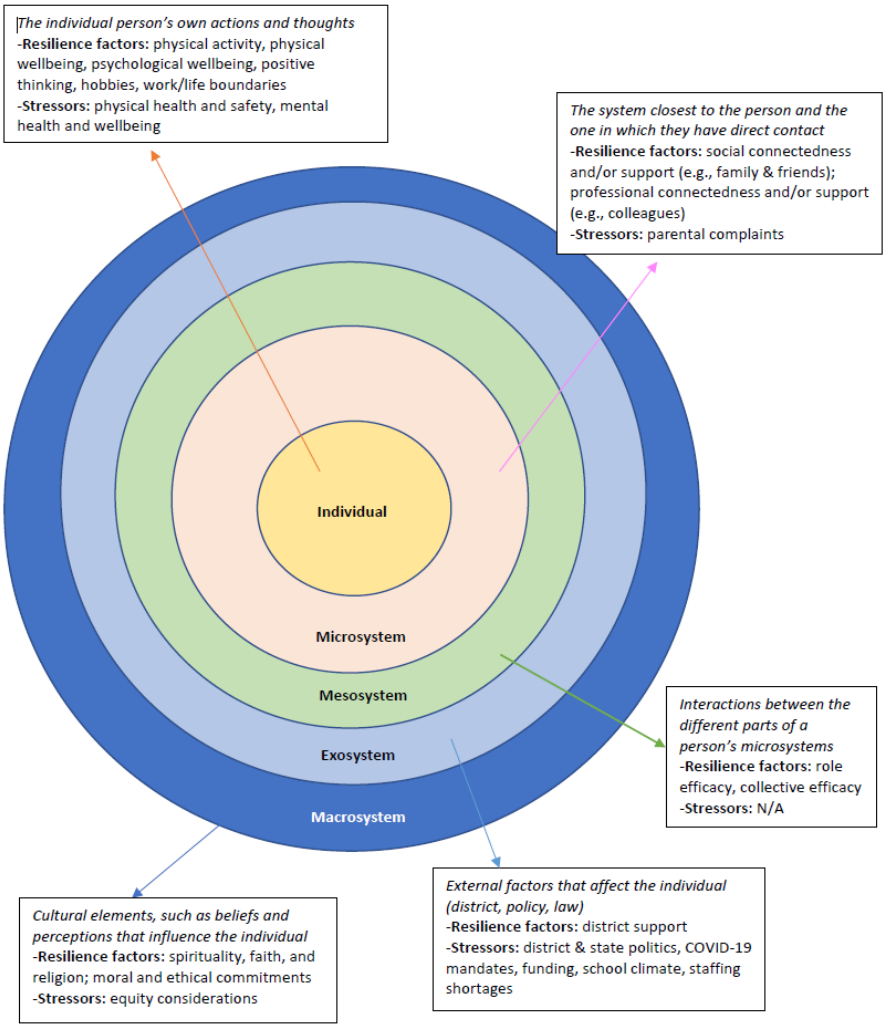

Figure 1. An Ecological Analysis of Principal Risk and Resilience

Risk Factors

Figure 1 shows the top seven stressors rated by our principals during the fall of 2021. We found that principals chose additional duties

surrounding public health mandates as the highest stressor. This was followed by staffing shortages, implementing/ communicating/ reinforcing pandemic-related policies, and meeting the needs of the school community as additional stressors, respectively. In comparison, the top stressors from the first wave survey collected in the spring of 2021 were: 1) reopening of schools as the highest stressor; 2) meeting the needs of the school community; and 3) stress related to technology-related issues. The shift in the highest-ranked stressors across a mere few months shows the evolving and expanding role of leadership across the different waves of the COVID-19 pandemic. Additionally, these findings elucidate the impact of staffing shortages across education and how it contributed to the jeopardization of principals' wellbeing.

When interpreting how the top-ranked stressors map onto the ecological systems model, it is evident that many of the leading stressors occurred at the exosystem (i.e., organizational factors that relate to the principal's work) followed by the individual level. Two of the top seven stressors, "my physical health and safety," and "my mental health and wellbeing" occurred at the individual level; these factors have a direct impact on the principal's wellbeing. Interestingly, the remaining five highest-ranked stressors (additional duties surrounding public health mandates, implementing, communicating, and or enforcing pandemic-related policies, issues related to school climate, and staffing shortages) all occurred at the exosystem level. The heavily ranked stressors at the exosystem level suggest that many of the most intense stressors experienced by principals were decisions and issues where the principal is not an active participant but were events or decisions that affect what would happen in the surrounding settings containing the principal. Given that principals may have less

direct agency in navigating risk factors that occur at the exosystem, it is important for schools and districts to understand how to mitigate these risk factors at the system level.

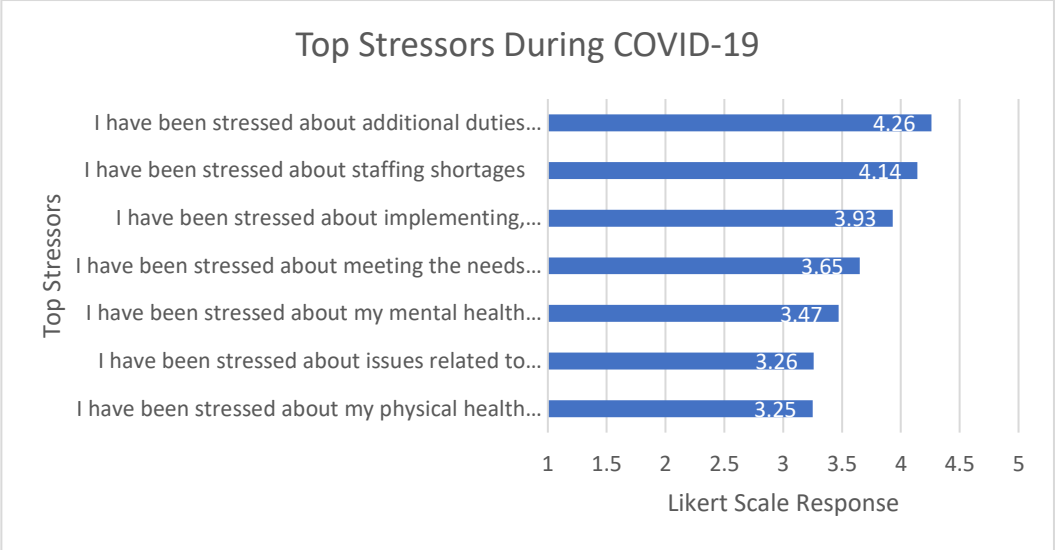

Figure 2. Top seven responses to the Likert scale items measuring principal stressors during the fall of 2021.

In addition to the Likert scale items, approximately a third of the leaders (29%) who completed the open-response question on additional stressors shared that they were stressed about district politics and organizational structures and practices. One principal shared:

> *The district communicates belief in principals but are relying on old dysfunctional ways some departments are run that perpetuate the same old patterns before school shut down. That is most*

> *disheartening—when site leaders are expected to do a lot more while being held accountable, but central leadership support departments don't have consistency in their ability to deliver central support (Principal 1).*

Another principal shared similar sentiments towards the district as well as the difficulties of staying in the profession:

> *After 22 years as a site administrator, this year is making me question how much longer I can sustain doing this work. I have never felt the sense of utter chaos and dysfunction from district and state leadership as I have this year. There is a total disconnect between the daily demands of site leadership in the pandemic and political expectations from above (Principal 2).*

In the two aforementioned quotes, the respondents note, of their own volition, the stress that is caused by district practices and policies. Specifically, Principal 1 highlights the difficulty felt when their support system (i.e., district roles) does not deliver on the espoused value they see in their principals. For this respondent, like the other (29%) principals who highlighted district practices, policies, and organizational structures as major stressors, there seems to be a connection between the microsystem and the mesosystem (i.e., site-specific responsibilities) and the influence of the exosystem (i.e., policies and politics). By only examining the stressors named, we begin to see that different systems engage and converge upon the site of the individual to influence their wellbeing. It is important to note that even with stressors already listed on the Likert scale items, roughly a third of the respondents named, of their own accord, district politics and organizational structures and practices as a stressor in response to the open-ended response. This might indicate the heightened role that a

particular stressor played in the work of principals at the time of the survey.

Resilience Factors

Results from a thematic analysis of the open-ended responses on resilience show that principals find their resilience across various levels of the ecological system (see Table 1 in the Appendix). Almost half the principals (44.8%) were found to navigate resilience at the individual level of the ecological system, utilizing strategies such as physical activity, physical wellbeing (i.e., sleep, healthy eating), mental wellbeing (i.e., therapy and counseling), positive thinking, hobbies, and maintaining work-life boundaries. For example, one principal noted *"I've intentionally strengthened boundaries between work and home life, limiting the hours my phone is on. I've worked to increase my time spent on hobbies and other outside activities that give me joy, so work isn't the only way I am fulfilled" (Principal 3).* As highlighted in this quote, many principals utilized personal-level factors that they have direct control over and set firm boundaries between their personal and professional lives to develop resilience in their work as principals.

Some principals (34%) reported using various microsystem level factors of support, or their direct support networks, to find resilience. These factors include support and connectedness from friends and family, and professional support and connectedness from colleagues and the school community. For instance, one principal shared:

> *There have been a few peers in my district and that are in other schools that I can reach out and talk. We share similar experiences and deal with similar issues. Finding a bit of time to call, email, laugh and joke about work and life helps bring perspective. Without these colleagues*

> *who are going through what can only be called uncharted waters I would consider walking away (Principal 4).*

Similarly, another principal shared how they gained resilience from their familial microsystem when they responded with *"[I] gain strength from my immediate family. Knowing I will be home with those who love me and care for me each day after work is huge" (Principal 5).* As displayed in this quote, many principals appear to lean on their interpersonal relationships, both inside and outside of the school, to foster a sense of resilience within their professional lives. In particular, the first quote elucidates the importance of the bidirectional relationship between the individual and their microsystem, and how resilience is fostered through the strength of the connection between the two systems.

A few principals (11.2%) shared that they find resilience through their mesosystem, which is conceptualized as interactions between the different parts of a person's microsystems. This level includes factors such as role efficacy, or the potential effectiveness of an individual occupying a particular role, and collective efficacy, or a group's shared belief in their capability to effectively execute and attain a course of action. For example, one principal shared: "We rely on our administration team to continue to push our school forward during this time. We have developed a shared responsibility to our goals as a school." Similarly, another principal shared "When I get most stressed about a new law or policy that has been dumped on us, I try to do my best to take a deep breath, evaluate, and do the best we can at the moment for our students and families, that is why we exist." These principals both shed light on how a shared responsibility at the school level or their duty as a principal contributes to how they find their resilience during these critical times. Only one principal (0.3%) mentioned finding resilience through the exosystem (i.e., district, state,

and policies that exist outside of the day-to-day), while many responses from the risk factors noted the exosystem as a factor. This particular principal shares how they utilized a tool provided by the district, in this case, an organized book club, to build a sense of shared resilience across administrators: *"Our district has organized administrators and has been working through Elena Aguilar's book Onward. This has helped put things into perspective as well as helped our staff develop resilience" (Principal 6).*

Finally, roughly 6% of principals mentioned finding resilience in their macrosystem, which includes broader cultural beliefs and shared perceptions such as spirituality, faith, and religion, and moral and ethical commitments. For example, one principal shared, *"My faith is a firm foundation for a positive, resilient attitude" (Principal 7).* Another shared how their moral ethical commitments to society contribute to their resilience: *"I try to stay focused on beliefs about education and its role in ending the inequities and racism in our communities. I use data to ground my emotions and remain logical" (Principal 8).*

Discussion

This study sought to better understand principal wellbeing through the lens of resilience during the COVID-19 pandemic with a specific focus on work related stressors and resilience strategies employed by the principals. Building on previous literature that suggests school leader wellbeing is becoming increasingly challenging in the face of an ever-stressful job with outsized demands on the leader (King et al., 2024), we approached the investigation by examining principals' perceptions of work-related stressors as well as strategies used to support their resilience during the pandemic with a combined ecological systems theory (Bronfenbrenner, 1979; Bronfenbrenner &

Morris, 2006) of wellbeing. Conceptualizing a framework that understands resilience as both individual and ecological–while also part of structures that work to confer certain experiences on school leaders–we analyzed principal perceptions and navigation of work stressors and strategies for resilience as reported by 209 principals through a broader survey on principal resilience and wellbeing.

Our analysis of the open-ended responses regarding stressors and resilience yielded several compelling results. Principal stress factors in our study resided predominantly in the macro- and exosystems of the ecological model pointing to stressors from the system playing an outsized role in the ecology of wellbeing when compared to the contribution of stress factors across all systems of the ecological model (i.e. individual, micro, meso, exo, and macro). Specifically, district and state politics were named by respondents of their own volition when given the chance to name any stressors without said stressors being categorized by researchers. Secondly, and consequential to an ecological systems view of wellbeing, principals consistently reported a process of negotiation and navigation of high levels of stressors from ecosystem factors that afford little to no (0.3%) resilience tools or support. Further, the leaders in this study indicated that many of their resilience tools were built and sustained through professional support at the site (micro and meso) level. Given that exosystem deals with factors that reside outside of individual control yet affect the individual, the data suggests that individuals were accruing stressors from sections of the ecological model that afford little sources of resilience. This finding highlights the importance of "*process focused perspectives in resilience*", which underlines the complex and dynamic contexts individuals are expected to "*adapt, act, and live*" (Volet, 1999; Stomski et al., 2022). In line with this definition, principals' experiences

show us the ways in which resilience lies at the "*interface of person and contexts*", struggling to cultivate their wellbeing while navigating in times of uncertainty. This leads us to the "*context focused perspectives of resilience*" (Beltman et al., 2011; Johnson et al., 2014), where leaders can cultivate skills and competencies in putting protective factors into practice in order to overcome risk factors and adjust to challenging contexts.

Lastly, the vast majority of principals (78.8%) reported resilience being conferred through the system levels closest to the individual (individual actions and thought and microsystems). This becomes crucial when considering that school leaders' direct supervisors (i.e., potential sources of support) are expected to be found outside of their school as their school sites are often seen as places where they should be offering support. This finding reminds us of the importance of person focused perspectives in resilience, where individual risk and protective factors should always be taken into consideration when constructing support structures for principals. Each principal's context is unique as well as one's personal circumstances. Therefore, our findings project the interplay between these systems, guiding us in the ways in which leadership preparation programs should support leaders from diverse backgrounds with unique individual needs.

The results from the resilience factors, paired with the stressors, help to round out the ecological framework in that not only are there clear leading resilience factors (i.e., tools and processes principals used that helped buffer against the stressors), but the evidence also suggests that the principals used concretized and material processes and tools to negotiate between resilience and stress as a means to navigate and safeguard the ecology of their wellbeing. Some principals relied on factors that rest at the individual level of the ecological system (i.e.,

physical activity, self-care, positive thinking, etc.), while others tended to rely on the microsystem (i.e., family, colleagues, and school communities). This new learning suggests the critical role school leaders play in academic improvement (Leithwood et al., 2004), which needs more nuanced attention to the ways individuals develop their sense of wellbeing which in turn affects their efficacy (Sogunro, 2012).

Contributions to Research, Practice, and Policy Implications

Principals continue to be crucial cornerstones of school success yet faced incredible challenges during the height of the COVID-19 pandemic (Harris & Jones, 2020). The results of this study build upon the research (Fernandez & Shaw, 2020; McLeod & Dulsky, 2021; Netolicky, 2020) that explores the intricacies of how principals continue to navigate the effects the pandemic has had (and continue to have) on their schools. In endeavoring to determine what constituted principal wellbeing and how it was negotiated during the COVID-19 pandemic, with a specific focus on the stressors and resilience strategies the principals employed, the research here implicates a host of considerations for research, practice, and policies regarding principal wellbeing–a factor crucial to the success of the schools which are entrusted to them.

Contributions to the Field of Education Research

While research continues to make sense of the correlations between various factors associated with the duties and experiences of principals, research can further support substantive and rich understandings of how principals process, navigate, manage, and function within and between those factors, not only as singular psychological functions but as subjects in an ecology of wellbeing. The results of this study open new doors to understanding the

interconnectedness of resilience tools among various systems and structures that constitute the public-school leaders' professional apparatus and efficacy. Yet, the evidence suggests a need to interrogate previously accepted notions of school principal resilience towards wellbeing that are predominantly associated with factors that are either under individual control or external material resources (Cherkowski & Walker, 2016; Kutsyuruba et al., 2024). Further, inquiry into the intimate duality and interaction of stressors and resilience tools is warranted to accurately and precisely explain the complicated, inter-enmeshed nature of principals' experience and processing as professional subjects in an ecological tapestry of psychological wellbeing. In doing so, researchers might investigate the decision-making and navigation web of principals as they respond to intensely demanding and challenging times that are, unfortunately, likely to resurface in a different form. The results of this study suggest that well-being through resilience could be more deeply understood as a multi-directional, multi-level nexus of professional and personal subjectivity. That is, the results of this study expand the field's current capacity to fully ascertain the constitutive forces that index principal wellbeing during times of duress and extreme difficulty. The investigation of such decision-making and navigation could help elucidate the ways in which educational research might cultivate inquiry that is as complex as the constructs addressed in this study. In bringing together the multi-level and multi-directional sensibilities of an ecological model of wellbeing, research can illuminate not just the individual leader's mind in the social, but also the way the mind and the social intimately refract off one another.

Further, the results from this study indicate a connected web of resilience factors that show how principals pull from a variety of

spaces, resources, tools, and strategies that at times are simultaneously located in singular levels of the ecological framework. While the data in this study indicates that only 5.7% of principals directly associated their resilience with the macro system, an understanding of the ways specific levels are interconnected in their structures and material realities could benefit from more research that might yield insight into the various levels of constructed, contested, (re)produced, and imagined experiences. In doing so, researchers might investigate connections both at the site of the individual as well as the ethos and mores found at the chronosystem (the COVID-19 pandemic context itself) and the macro system, which is comprised of spirituality, faith, moral and ethical commitments, and equity considerations—the levels that were not explored in-depth in this study. In developing such a study researchers might ask 'Do certain systems in the ecological systems theory operate as conditioners for how the individual experiences the other systems?'

While there are potential implications for research, there are some limitations to a study of this nature. First, our study did not perform in-depth interviews which might provide more understanding of how principals make sense of the phenomena presented in this study. Certainly, our participants noted very compelling explanations of their processes, tools, and broad reflections. However, more understanding of principal sensemaking, of how they negotiate and navigate the various levels, as well as the challenges that underpin the unique tie between the social and the individual apparatus, might usher more viable solutions to sustaining school principals towards flourishing (Kutsyuruba, Kharyati, and Arghash, 2024).

Implications for Policy and Practice

While research can continue to support our understanding of principals, there are implications from this research for how public schools as an apparatus and system might buffer the effects the pandemic is having on principals as well as their role in general. A major finding of this study sheds light on how principals experienced stressors at the singular level of the mesosystem (district policies, politics, new mandates, state policies, etc.) and yet few of their tools for resilience were located or experienced at that level. What is the role of school systems in supporting the resilience of its principals? School districts can provide coaching and support at the district level or institute a peer support and community-of-practice program where principals get time away from their school sites. The need for crisis leadership will likely continue beyond the COVID-19 pandemic. Additionally, we ask: How can systems anticipate the need to support principals through additional crises? States and districts can ensure that their mandates are aligned with the needs of schools as a whole without overlooking the specific consequences those mandates might have on principals. Districts and states should seek the perspectives of principals to inform emergency response task forces and crisis advisory boards that plan future emergency response protocols. The resilience of leaders should be considered as a major consideration when creating new emergency response policies. Taken together, these implications further reinforce a call to revise the ways in which structures can be established to support principals in accomplishing the difficult goals and charges set forth by their authorizers. We submit that a multifaceted approach to understanding principal resilience that is more inclusive of total wellbeing can afford new tools with which principals can achieve educational excellence for all students in their charge. Our study serves as a call for incorporating a multidisciplinary

approach to conceptual and theoretical perspectives on school leadership, which could open pathways to discover models to support the signature practices in leader preparation whilst moving the field of educational leadership forward both theoretically and in practice.

Principal resilience needs to be reframed as more than a case of individual fortitude or determination. Rather, principal resilience is highly influenced by the context of the role. Thus, if the system can be redesigned to prioritize principal resilience, more principals will experience higher levels of resilience. Yet, the results of this study indicate that the majority of school principals find their hope and resilience in contexts and factors that exist at the site of the individual actor as well as the microsystem that immediately surrounds them. Such a finding indicates that resilience factors are continuously being negotiated alongside the experience of principals. Policies that decenter uniform regulations and center instead a flexible, personalized approach could help buffer the strains reported by principals. One such policy could be mandating that districts give principals resources to spend more time with their school sites in generative and uplifting ways by providing much more district support for school operations, finance, and logistics. In times of crises, districts could activate their office personnel who were former school admin to coach other district staff in taking on creating verbiage for messages from schools to families; handling the coordination of attendance records and follow-ups with truancy; running the meal programs for students; etc. Additionally, district policies might benefit from having designated emergency response teams where certain district staff have 'on duty' shifts where they can answer questions principals have in times of unpredicted chaos and intensity. To support principals in fulfilling their roles rather than the idealized

'superhero narrative', researchers, practitioners, and policymakers can benefit from listening to principals as the system reacts and reels from a devastating pandemic.

Conclusion

Schools, principals, district, and state education departments are continually faced with a lack of resources and yet an increased set of expectations (Oskolkoff, 2019) to deliver on America's promise of an education that is free at the point of entry, open to all, and is the cornerstone of the great equalizing variable in the American dream (Robinson, 2010). The results of this study indicate that principals are not only faced with feeling an immense weight in delivering America's promise in a way that supports the superhero trope (Sutton & Gong, 2021), but affirm previous research that finds school principals experience continual stress (Kuing, Harris, and Vales, 2024) from the expectations and navigation of their role. The data here suggests that various factors of wellbeing exist in and outside of principal's immediate day-to-day interactions while prompting principals to enlist their same day-to-day material conditions as the primary resources for resilience. Due to the complex interconnectedness of our data regarding stress and resilience, we leveraged an ecological systems theory of development to conceptualize an ecological model that might account for factors both within the individual as well as interactional with societal factors (Christensen, 2016). In heading the call of previous researchers, our inquiry provides new inroads into a nuanced understanding of "the individual's role and behavior in relation to the context surrounding them on different levels" (Christensen, 2016). While Bronfenbrenner's original framework (1976) still provides a cogent analysis of different levels that mediate the individual's development, our results demonstrate a need to

expand the ecological model to account for more than resilience (Christensen, 2016), while not assuming the individual is the sole source of the development and maintenance of wellbeing.

Accordingly, our results show how school principals navigate in times of uncertainty and crisis as "risk-takers, who actively seek out new opportunities, experiences, and challenges for their schools to learn and achieve" (Day, 2014). Their ability to develop resilience enables them to cultivate their capacities to lead as well as opening pathways for their teachers and staff to build resilience. However, as was emphasized by Sablo and Gong (2021), "resilience alone does not necessarily lead to change. School leaders who are committed to change must also engage in a critical analysis of the unjust systems that shape inequitable outcomes at their sites in order to sharpen their equity lens and sustain themselves in the work of social justice leadership." Our results take note of Sablo and Gong's assertion and further indicate that change will require the leaders of state, county, and district public school institutions to engage in an equally vital and potent critical analysis of the very unjust systems that education institutions steward. Lastly, the results presented here highlight the need for action-oriented research studies that might be implemented in collaboration with public school districts as well as education leadership programs at universities as a means for creating networks of support among school leaders—ultimately leading principals to develop individual and collective resilience whilst providing opportunities for research-informed practices of change in school contexts. Californian leaders' experiences in this study are also expected to bring insights to the international scholarship and practice as to how leadership can be cultivated in challenging times no matter how hard the conditions are.

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Appendix

Table 1.

Resilience Factors by each level of the Ecological System

System	Resilience sub-themes	Examples of Quotes from Principal Participants	Percent
Individual *the individual person's own actions and thoughts*	-physical activity -physical wellbeing -mental wellbeing -positive thinking -hobbies -work/life boundaries	*"I've intentionally strengthened boundaries between work and home life, limiting the hours my phone is on. I've worked to increase my time spent on hobbies and other outside activities that give me joy so work isn't the only way I am fulfilled."*	44.8
Microsystem *the system closest to the person and the one in which they have direct contact.*	-social connectedness • friends and family -social support • friends and family professional connectedness • colleagues and school community professional support • colleagues and school community	*"There have been a few peers in my district and that are in other schools that I can reach out and talk. We share similar experiences and deal with similar issues. Finding a bit of time to call, email, laugh and joke about work and life helps bring perspective. Without these colleagues who are going through what can only be called uncharted waters I would consider walking away"* *"Gain strength from my immediate family. Knowing I will be home with those who love me and care for me each day after work is huge."*	34

Mesosystem *interactions between the different parts of a person's microsystem*	-role efficacy -collective efficacy	*"We rely on our administration team to continue to push our school forward during this time. We have developed a shared responsibility to our goals as a school".* *"When I get most stressed about a new law or policy that has been dumped on us, I try to do my best to take a deep breath, evaluate, and do the best we can at the moment for our students and families, that is why we exist."*	11.2
Exosystem *external factors beyond the daily interactions that affects them (e.g., district, policy, law)*	-district support	*"Our district has organized administrators and has been working through Elena Aguilar's book "Onward". This has helped put things into perspective and well as helped our staff develop resilience."*	0.3
Macrosystem *cultural elements such as beliefs and perceptions that influence the individual*	-spirituality, faith, and religion -moral and ethical commitments	*"My faith is a firm foundation for a positive, resilient attitude."* *"I try to stay focused on beliefs about education and its role in ending the inequities and racism in our communities. I use data to ground my emotions and remain logical and committed to outcomes."*	5.7

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Research in Educational Administration & Leadership

Local Quality Management for Developing Schools' Capacity Building: A Multiyear Study from Sweden

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Abstract

In recent decades, there has been a growing body of research that highlights local education authorities (LEA) as potential contributors to support school capacity building and result development. Despite this, there are few empirical studies that have explored what effects different strategies and policy actions from the LEAs actual have over time. Based on results from a five-year research project in a major Swedish municipality, the aim with this multiyear and multi-level study is to explore the effects of a LEA's quality management processes of six schools' capacity building. The results from the study show a clear strengthening of the schools' improvement agenda, improvement organization and improvement leadership of the six schools. Two LEA strategies can be distinguished as especially important to explain the school improvements: i) systematic and long-term data-based school improvement routines and processes; ii) quality dialogues for monitoring and support. Two conclusions can be drawn: i) the importance for the LEA to be responsive so its improvement strategies are integrated into the schools' local school improvement system; ii) the importance that the LEA work with multifaceted strategies containing aspects of control and accountability and learning and support.

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Introduction

In many school systems around the world, there is an increasing focus on strengthening the organizational capacity of school actors and schools to improve themselves and their students' academic performance. Consequently, school improvement and school effectiveness have become important issues at all levels of the school system. Traditionally, the school level has long been seen as the basic unit of change, which implies that researchers and policy actors sometimes tend to overlook the potential of districts and local education authorities (LEAs) as substantial contributors that can support school reform and school improvement. However, in the body of research concerning school improvement and school effectiveness, a number of studies do highlight this middle level within the school system (e.g. Leithwood, 2019; Leithwood & Azah, 2016). In the same way, several studies have pointed out that the construction and implementation of different forms of quality management systems and strategies have been an important way for LEAs to monitor school results and support school improvement work (e.g. Harris, 2001, 2011; Adolfsson, 2024a; Håkansson & Adolfsson, 2022). The LEA's potential to support schools' capacity for school improvement can be seen as particularly evident in decentralized school systems. Taking Sweden as an example, which constitutes the policy context for this study, LEAs, together with schools, have, in accordance with the Swedish

Education Act, been assigned a high degree of responsibility and accountability for assuring and improving educational quality (SFS, 2010). Accordingly, this actualizes questions concerning the interaction and relationship between the state, the LEA, and the local school linked to issues related to school governance, school leadership, and school improvement (Adolfsson, 2024b; Håkansson & Adolfsson, 2022; Adolfsson & Alvunger, 2020; Rorrer et al., 2008).

However, despite the growing body of research concerning the LEA's role, importance and potential for supporting school capacity building and strengthening student academic performance, there are few empirical studies that have explored the long-term outcomes. That is, we know very little about the effects different strategies and policy actions by the LEA actually have over time. Based on the analytical concept of "improvement capacity" (Stoll, 2009; Rönnström & Håkansson, 2021) and data from a multi-year research project in a major municipality in Sweden, this article explores the long-term effects of an LEA's quality management system and processes. The following research questions have guided the study:

1. What are the central strategies of the LEA's quality management system?
2. Considering the LEA's quality management, what long-term development of schools' improvement capacity can be distinguished?
3. Which quality management strategies can be distinguished as especially important concerning reinforcing schools' development of improvement capacity?

The article is structured as follows. After the introduction follows an overall description of the Swedish decentralized school system. After

that, in a previous research section, the study is contextualized by focusing on the LEA's role and potential importance for supporting schools. Then, the study's analytical framework is detailed. Thereafter, materials and methods are presented followed by a presentation of the results. The article ends with a discussion and some conclusions, including directives for further research.

The Swedish decentralized school system

The Swedish school system has been characterized by far-reaching decentralization since the early 1990s. This means that the responsibility for education is divided between the central government, school organizers and the principals. Accordingly, municipalities and independent school heads, together with the principals, have considerable authority over the schools for which they are responsible, which means that they are held accountable for ensuring that education is aligned with the national goals as well as legal requirements and school ordinances. Most public schools are organized by the municipalities, each having a school board, consisting of appointed politicians, and a superintendent which manage the Local educational authority. The superintendent and the LEA have the operational responsibility of leading principals, distributing resources but also in supporting schools' quality assurance work. According to the Swedish Education Act, (SFS, 2023), a school must be managed and coordinated by its principal. The principal acts as an educational leader and is responsible for working in accordance with the national objectives, which implies a continuous work for assuring and improving the school's educational quality. Due to the peculiarities of the Swedish decentralized school system detailed above, the LEA in the current study should be understood within the

tension and interplay between the national and local school level entailed by their position".

Previous research

Previous research has pointed out the local education authority as a potential important actor concerning create coherence and strengthened the couplings within the local school system. Among all, research points to the need for balancing overall and local strategies and getting different organizational levels to coordinatearound school improvement work with aim to reinforce conditions for a long-term and sustainable school development (Campbell, 2005; Hopkins & Woulfin, 2015; Moore Johnson et al., 2017). Other researchers use the concept of system leadership to illustrate how adaptive leadership at the macro level is based on an understanding of the complexity of educational contexts such as multiple and interrelated systems. System leadership can then be exercised for capacity building, system-wide change and improvement (cf. Harris, et al., 2021). Despite a growing knowledge linked to the function and value of the LEA in the school, there still seemed to be a need for further system-wide research, where the intricate interaction between different organizational levels is investigated: "Although a good deal of research exists about either school leadership or central office management, we were surprised at how few studies focus on the intersection between the two" (Moore et al. 2017, p. 8). That is, and in line with Harris (2011), the improvement reforms must be directed toward reinforcing the whole organization's capacity building. Leithwood (2010) and Leithwood and Azah (2016) have further explored the characteristics of high performing districts and point out nine crucial processes. These include for example sharing visions and missions; learning-oriented organizational

improvement; reinforcing professional development and leadership; using multiple sources of evidence to inform decisions, etc.

Accordingly, it appears that the impact of change initiatives from a superior level is largely dependent on how active the LEA's role was and the extent to which chosen strategies emphasized accountability around student academic performance or, for example, the building of networks between schools in the municipality/district (e.g. Fullan, 2005; Lee et al., , 2012; Seashore Louis, 2013, Campbell & Murillo, 2005). That is, a well-developed interaction between the system level, the school level and the classroom level has been identified as central condition, together with a number of strategies that reinforce improvement cycles of follow-up, analysis and development, as well as strategic leadership, organizational development, learning and school culture with a focus on the core of the school's work, teaching and learning (cf. Hopkins et al., 2014; Muijs, et al., 2014; Reynolds, et al. 2014).

Rorrer Et al. 2008) who conducted a research review based on around eighty research studies identify four roles that the municipality/district can adopt to promote improved academic performance and greater equivalence: a) providing instructional leadership, b) reorienting the organization, c) establishing policy coherence, d) maintaining equity focus. According to the researchers, these four roles are mutually dependent and in various ways (loosely or tightly) coupled in a non-linear process. How the roles are coupled is important for how the district can function as an institutional actor in a context of academic performance improvement and greater equivalence, but also in relation to capacity building at various levels. In particular, the concept of *instructional leadership* can be linked to the efforts to build up local capacity in the form of knowledge, skills, processes and an

organization that contribute to mobilizing staff, developing functions linked to change and creating links between the district level and the school level. Understanding and getting others to understand the reform idea is based on achieving a functioning communication, planning, cooperation, monitoring of targets, instructions, input data, transparency and accountability (Rorrer et al., 2008). Campbell & Murillo (2005) make similar conclusions by highlighting the opportunities LEAs have to support school improvement by, among other things, contributing consistently to professional leadership, strategic education planning, focus on and management of school improvement, joint commitment to improve school performance and stable and secure infrastructure for education (see also Leithwood, Sun & McCullough, 2019).

Without overlooking the profound body of research that have been discussed above, there is still need of empirical studies that study the long-termed effects of the LEA's quality management linked to schools' capacity building. It is in light of this knowledge need that this study wants to make an important contribution.

Analytical points of departure

Considering this study's specific research interest concerning the local education authority's potential to support schools' capacity building, there is a necessity to describe the studies theoretical underpinnings and analytical use of the concept of 'capacity building'.

Capacity building as a theoretical concept have been used repeatedly over time in the literature, but in slightly different ways. However, in this study, capacity building is understood as an organizations' ability and capability to continuously improve themselves and handle internally and externally changed conditions. Both individual and

collective learning as well as organizational development and various leadership aspects have been linked together with the concept. Stoll (2009) has defined capacity building as a generic concept and believes that capacity for school improvement encompasses individual, interpersonal, cultural, structural and organizational dimensions. More specifically she defines it as "... the power to engage in and maintain continuous learning among the teachers and the school itself, with the aim of strengthening student learning, impacted by individual teachers in a school, the school's social and structural learning context and the external context" (p.2).

Capacity building comprises a central focus when it comes to LEAs' quality management processes and strategies. Although there is a lack of unambiguous definitions of capacity building in previous research it is possible to trace important components that deal with "… creating the conditions, opportunities and experiences for collaboration and mutual learning" (Harris, 2001, p. 261; c.f. also Stoll, 2009). More precisely, it is also about how collaborative processes in schools are promoted and developed, as well as realizing the importance of a strong focus on teaching and learning.

For the purposes of this study, we use an analytical framework built on five categories that can be regarded as significant conditions of schools' capacity building based on previous school improvement research (Rönnström & Håkansson, 2021). These conditions for improvement, so-called improvement capacities, can be summarised in the following categories:

1) *Improvement agenda:* An ability to communicate and activate analyses and targets with practical consequences and participation from different groups in the improvement work (e.g. Kuipers et al., 2010; Sun & Leithwood, 2017).

2) *Improvement agents:* Individuals with the mandate, the desire and the knowledge to participate in the improvement work and who contribute to a high degree of participation among those concerned (e.g. Parr & Timperley, 2008).

3) *Improvement organization:* Includes coordinated arenas for joint work with analysis and collaborative learning before, during and after the improvement work, and contexts with opportunities to collaborate with external actors (e.g. Harris, 2001, 2011; Timperley, 2011).

4) *Improvement culture and history of improvement:* These are characterized by the division of responsibilities, trust in one's own ability and that of others, openness and deprivatization of educational and instructional practices and high expectations with associated support and resources (e.g. Dolph, 2017; Lee & Seashore Louis, 2019).

5) *Improvement leadership and improvement processes:* Distributed leadership among key individuals, suitable processes based on analyses and targets, and strategic planning and leadership with regard to the various phases of the improvement work (e.g. Leithwood et al., 2008; Day et al., 2016).

The different research-based categories above constituted an analytical framework over different aspects linked to schools' capacity building. This framework enables a more refined analysis of schools' development of their capacity building over time, in light of the LEA's quality management work. The same framework also become crucial when it comes to distinguish which, and in what degree, different strategies in the LEA's quality management system that seem to be

able to affect the development of different aspects of schools′ capacity building.

Research Design and Method

This study has a qualitative multi-level design (Bryman, 2002; Day et al., 2016) and is based on a five-year research project. In parallel with the research study, methodological development also took place in the form of evaluation of multi-level analyses and validation through feedback (see e.g. Andersen et al. 2018). The research project had a multi-method approach where a different variation of data was collected (cf. Tashakkori & Teddlie, 2010). However, in this study data from document analyses and recurring interviews with school actors at various levels (LEA officials, principals, and teachers) have been used.

The municipality in focus for this study is a city in Sweden with approximately 350,000 inhabitants. The city is characterized by inhabitants and areas with varying socio-economic levels and ethnic backgrounds. Consequently, the schools are diverse with concern to student composition and achievement. This implies that an important task of the work of LEAs in this municipality is comprised of dealing with a major equality problem.

In the first step, data received from the National Swedish Agency of Education in combination with data from the LEA in the current municipality guided a strategic selection of participating schools, based on schools' socio-economic conditions and student academic performance. In light of this school data, two of the schools was defined as high performing (schools 1 and school 2) and two as low performing schools (school 3 and school 4), while the other two participating schools (school 5 and school 6) could be labelled

somewhere in between. In this way, a cross section of the municipality's primary schools was created, which contributed to both the breadth and depth of the data collected. This in turn enabled an analysis of the relationship between the schools' results, socio-economic conditions and their quality assurance systems.

Table 1.
School characteristics

School	Grade	Location	Result level	Socioeconomic status (SES)
1	K-6	Suburb	High	High
2	K-9	Suburb	High	High
3	K-9	Suburb	Low	Low
4	K-9	City center	Low	Low
5	K-6	City center	Middle	Middle
6	K-9	Suburb	Middle	Middle

To get a thoroughly understanding of the LEA's quality assurance system, with its different strategies and activities, an analysis of central policy documents in combination of interviews with central LEA officials was conducted. The policy documents were consisted of descriptions of the LEA organisation, policy and vision, leadership and management structure, evaluations, school-development strategies and different functions' assignments and position within the organisation. The deepened understanding and insights of the LEA's quality assurance system comprised an important basis for the interviews with LEA officials and the subsequent school interviews.

In the first one and a half year, focus was directed towards collecting data and analyse the LEA's quality assurance. In the following three and a half years, three rounds of interviews with subsequent feedback

were conducted at each school. At the final round of interviews (year five), the respondents were also given the opportunity to retrospectively think over their understanding of the school's change with regard to key components in capacity building. The analytical framework, consisting of the five aspects of capacity building, comprised an outline for the interview-guide and the feedback to the schools. The continuous synthesizations of data and feedback to both school and administrative levels have been a part of the methodological approach, with the aim of validating preliminary analyses and generating new questions. The table below summarises the collected amount of data that has been used in this specific study:

Table 2.
Data Collection

Target groups – activities	Methods	Number	Documentation
LEA actors	Individual interviews	13	Transcriptions
Principals and assistance principals	Individual interviews	14	Transcriptions
	Group interviews	14	Transcriptions
"Expert teachers"	Group interviews	17	Transcriptions
Teachers	Group interviews	11	Transcriptions
Total number of informants: 175	Total number of interviews	69	Transcriptions

With aim to distinguish changes regarding different aspects of schools' capacity building in light of the LEA's quality management work, the first step of the analysis of the collected data were comprised of an analysis of the changes that could be distinguished over time of each school's capacity building. More specifically, this part of the analysis work comprised a close reading and, in a next step, a categorization of the interviews in combination of the schools' internal policy documents in light of the analytical framework. Based on the analysis of each school's development of their capacities, a comprehensive analysis of all six schools were conducted in the next step. Finally, in light of the research question regarding which quality management strategies that can be distinguished as especially important concerning reinforcing schools' development of capacity, these patterns of change were put in light of the results from the analysis of the characteristics of the LEA's quality assurance system.

Findings

In the first part of this section, the results are presented linked to the first research question concerning central strategies of the LEA's quality management system. The second part focuses on what long-term development of schools' capacity building that can be distinguished, as a consequence of the LEA's quality management. The third part discuss which quality management strategies that can be distinguished as especially important concerning reinforcing schools' development of improvement capacity.

Central strategies within the LEA's quality management system

Strategic framework for coherence and common sense

In recent years, the LEA in the studied municipality developed a central strategic framework for quality assurance and school development, with the aim of clarifying and pointing out central standards and processes linked to the LEA's and the schools' quality management, school improvement processes and quality assurance. The strategic framework can be seen as consisting of four main components: (1) common visions and direction (see above), (2) evidence and data-based school improvement, (3) leadership and professional learning, and (4) quality dialogues for assessment and development. These standards and processes aim to create a more coherent local school system linked to schools' leadership and school improvement. The interviewed principals in many ways confirmed this quite high degree of the LEA's standardization and regulation. However, at the same time, they expressed an understanding of this strong control:

> *(Principal 1) …everyone has to walk in the same direction and in the same line. It would take a lot for a principal to choose another way. That is, they, the LEA, will immediately notice that.*
>
> *(Principal 2) Yes, especially in the LEA's quality dialogues with the principals. In them, they directly find out if everyone is on track or if someone seems to take a side-track.*
>
> *(Principal 1) Yes, but this is a very large school organization, so I think they have to do this. I see this as a way of quality assurance.*

Data-based school improvement

Data use appears to constitute a central component in the LEA's quality management system. When LEA officials described the aim of using data in their quality management, two main perspectives emerged. The first perspective can be described in terms of control and quality assurance: *"we control the schools through evaluation, however the most important is that we don't tell them exactly what they should do, we are primarily interested in finding out what they have based their decisions on, with what data." (LEA official 2).* In other words, different forms of data enabled the LEA to monitor and check the schools' academic performance, make comparisons between schools, and evaluate and make decisions about school improvement initiatives. In addition, data is presented as an important way of achieving a neutral and research-based improvement effort disconnected from personal opinion and temporary, poorly supported school improvement strategies. As one LEA manager put it, *"After all, data is the neutral part. It's not about you as principal but about the results of the school. Because we have this data, and it's hard to argue against it" (LEA manager 2).*

The second aim of data use can be described in terms of development, learning and formative assessment. Officials from the LEA described that different forms of data, both quantitative and qualitative, comprised important knowledge sources for teachers' and principals' professional learning: "we will help the schools build up a capacity concerning their data use, in that way we want them to learn how to identify development needs in their organization" (LEA Official 3).

Quality dialogues for assessment and development

The quality dialogues take place four times a year with a specific focus and agenda. Like data use, these dialogues have both a monitoring and

a supporting/developing aim. In other words, the dialogues comprise both an important occasion for the LEA to get an extended understanding of the schools' results and to support the principals in their leadership and school improvement work. Some of the quality dialogues included school visits in the form of classroom visits and conversations with teachers and students. This was described as an important complement to the quality dialogue in the form of getting acquainted with the everyday work and exploring the extent to which the ongoing development work had reached the teachers and the teaching.

Leadership and professional learning

Another important part of the LEA's quality management system comprises a strong focus on developing and strengthening the leadership of the principals. The LEA officials described themselves as having a central function in the form of organizing professional learning meetings but also in the form of leading the principals' professional learning: *"An important task for the LEA officials includes developing the principals' leadership by challenging them and not just patting them on the back" (LEA manager 3).* In addition, a major part of the principals and the LEA officials underwent an extensive professional development programme with a focus on school leadership and school improvement. The programme was organized in the form of literature studies, seminars and training modules. This professional development programme is described by the principals and the LEA officials as having influenced the development of the LEA's quality management system to a great extent. Moreover, there are several contexts and activities, organized and led by the LEA, where principals are expected not only to receive information from the LEA but also to interact and learn together with other principals.

Long-term development of schools' improvement capacities

In this part, the schools' long-term development of their capacity building is discussed in light of the study's analytical framework.

Improvement agenda

In the analysis of the collected empirical material, certain patterns emerge with regard to schools' development of their capacity building. Over time, the empirical data points to that the improvement agenda seem to have strengthened in the six schools, however in varying degree. This means that the schools' ability to activate analyses, highlight and communicate results and development needs has strengthened. As was described above, an important focus in the LEA's quality management was on supporting schools' use of data as within their school improvement work. This also become evident in the interviews with principals and teachers concerning issues related to the development of their improvement agendas. Four schools seem to have developed a greater participation among the staff around the improvement agenda over time: *"Yes, there is now a living school development group where planning is done based on analyses. The commitments are now clearer" (Expert teacher, school 2),* while two schools (school 3 and 5) were moving much more slowly in a similar direction. At the four schools where we could distinguish a clear improvement of the agenda, the principals point out that the content of the improvement work has developed towards becoming more focused on what is of significance, i.e. teaching and how it affects student learning:

> *Just after working in this way for two years, I see an extreme effect, there is an ownership …, teaching and research practice are talked about in our staff rooms (principal, school 6)*

In contrast, in schools with a lower pace of development of their improvement agenda, the teachers appeared to not be as involved in the school's improvement work which implied that that the school improvement work were much more dependent on the school administration's ability to exercise clear and a more active leadership. Among other things, this comes to expression by the assistant principals stepping up and taking on extensive responsibility as the leaders of development processes in different work and subject teams. In other words, in these schools, the improvement agenda does not tend to be supported, communicated and incorporated in the same way as in schools with a well-developed improvement agenda.

Improvement agents

The school's development of its so-called improvement agents, i.e. school actors with the mandate, the desire and the knowledge to participate in the school's improvement work, constitute another central aspect of a school's overall capacity building. How principals choose to organize and work with their improvement agents was something that the LEA has taken an interest in both through the so-called quality dialogues and in the form of various improvement initiatives in form of, for example, different "process leading programs" for expert teachers. In line with this it was clear that the organization and processes around schools' expert teachers had developed at several of the schools, concerning clarifying and strengthened their mandates, responsibilities and assignments. For example, at school 6, extensive change work was carried out where the expert teachers were given a clear operational responsibility for the school's improvement work while the school administration had a clearer strategic responsibility. That is, considering the LEA's different leaderships programs for principals and expert teachers the findings

show that the skills and ability to run and lead the school improvement work over time had strengthened in several of the schools, which can be exemplified by a quote from a teacher at on of the schools:

> *I remember from the beginning that it was very vague what we would work with. But now we have a description of what is expected of us. But also ... we've attended a process leadership programme. So we work with these issues in particular, to understand our assignment better and I think that contributes a great deal (teacher, school 2).*

Overall, the findings accordingly show that the expertise of the improvement agents has increased over time in several of the schools, as a result of the LEA's quality management work, even if certain skills development needs seem to remain, especially when it comes to having a more combined effect of the schools' improvement work in relation to the development of the quality of teaching. However, relatively large differences still existed between schools with regard to the development of how their improvement agents are used in an appropriate manner. For example, in one of the schools (school 5), frequent changes of the principal had negatively impacted the school development work's continuity and structure, including the work of the improvement agents.

Development of the school improvement organization

The schools' work to develop their improvement organizations also comprised an important focus area in the LEA's quality management work. Here, too, it is possible to distinguish a positive development in most of the schools, including in the form that the schools have over time developed suitable contexts for teachers' data analysis:

> *I feel that it's more systematic, we work more based on data, look at the students' results and student surveys /.../ based on what we in our*

> *team believe is the problem, we look at data to confirm or disprove what we said ... and according to that we define our commitments (Assistant principal, school 6)*

However, in two of the schools (school 3 and school 5), there was an organizational development from a fairly basic level, while the other four schools (school 1, 2, 4 and 6) had a more stable development organization from the beginning. In the two schools with major organizational challenges, the improvement organization was characterized five years ago as being largely informal and individually based. In other words, there was possibly a development organization "on paper" but where the actual school development work was rather weak and to a large extent dependent on the individual teacher. Although it remained a lot to do regarding improving their development organization, the findings indicate that they are on the way to developing a clearer balance between top-down and bottom-up in the improvement work. In addition, it was clear that the principals worked to create greater involvement and participation among the staff by e.g. preparing, structuring and organizing meeting places for communication and learning:

However, in the organizationally "well-developed" schools, certain slumps could be seen over time, partly due to the COVID-19 pandemic, but also in some cases due to changes in the management structure. However, there have mainly been stable development organizations at these schools that have created stability and enabled a long-term perspective in the improvement work, regardless of changes in the management structure at the school.

School improvement culture and history of improvement

When it comes to the improvement culture and history of improvement of the schools, such as trust, openness and deprivatization of the teaching, it appears that these aspects are difficult for the LEA to address with its efforts and strategies. Just as the schools' organizations, the schools' have also had relatively different starting points with regard their improvement culture. Two of the schools were "encumbered" by earlier history and culture (school 3 and 5). For example, there were strong external expectations on the schools to improve their results, but at the same time there were limited conditions for development (such as having unqualified teachers). In addition, at one of the schools (school 5) it existed a fundamental lack of trust between the school administration and the teachers, which affected the school's capacity building a lot. Accordingly, it was clear that school cultural dilemmas like this was difficult for the LEA to handle.

Improvement leadership and improvement processes

As described earlier, at the initiative of the LEA, a comprehensive and joint continuing education initiative was implemented in the municipality with a focus on school leadership and improvement work. This training was also something that several LEA officials and principals regularly referred to. On an overall level, what characterises the six schools' development of their improvement leadership over time is a development towards a higher degree of distribution and decentralization of the leadership and improvement work, albeit from different starting points: "The whole concept is based on a large distributed leadership where you really rely on and have trust in the organization and the teachers" (Principal, school 2). Accordingly, two of the schools (school 3 and school 5) were initially characterized by a

quite centralized leadership to gradually develop in the direction of a distribution of the leadership, while other schools had a more stable improvement leadership throughout the period. The understanding of and respect for school improvement as long-term processes has generally increased, as has the acceptance of the need for adapted leadership from various actors. There, the leadership of the school improvement work has been consolidated and to some extent strengthened during the period despite changes in several school administrator positions. One challenge in many schools still appears to be how the distributed leadership should be organized, clarified and supported, both what can be tied to formally appointed assistant principals and to improvement agents, such as expert teachers and special education teachers:

> *The biggest challenge is that a lot of the school development work is still at our level (the principal level). There is still development over the previous year, when we had a non-functioning school development group. There were too few of us. Now we are building a school development group together with the principal. /.../ but we're not quite there yet (Assistant principal, school 1).*

LEA quality management in relation to school development of improvement capacity

Based on the presented findings in the two foregoing sections, the aim in this part is to make a comprehensive analysis of the schools' developed improvement strategies in relation to the LEA's quality management system.

The overall analysis for the six schools' build-up of the various aspects of the capacity building shows that the improvement agenda, improvement organization, improvement leadership and

improvement processes over time seem to have gradually been strengthened – however with a clear variation and strength between schools. The expertise, responsibilities and mandates of the improvement agents also developed to some extent over time, but the outcome varies even more between schools. Based on the same empirical material, it is clear that the LEA had much more difficulties in affecting the schools' improvement culture over time. At the same time, the schools' starting point in their improvement history with the degree of external and internal pressure seems to affect the pace and the possibility of developing this culture in the direction of result and quality improvement.

Two strategies of LEAs become particularly clear as possible explanations for the change and strengthening of the capacity building at the schools. Firstly, it is about a strong focus on data-based improvement work with organizational procedures concerning data collection, uniform results reports and joint continuous analysis work. However, the digital systems for student data and school reporting are to some extent disputed, which means that the significance of these is partly unclear. The data-based improvement work is strongly rooted between LEA officials and the school administrations, but the links to the teacher level are weaker. However, the strong focus that the LEA has on the use of data as a basis for its and the schools' improvement work in combination with extensive work to strengthen principal leadership seems to have had a clear impact on the schools' development of their improvement agenda, improvement organization and their improvement leadership with associated improvement processes. Among other things, this is expressed in the form of a greater degree of consensus with regard to e.g. priorities of resources, school development needs and what changes and efforts are

to be considered to be legitimate. The same strategies also seem to have involved a development of a common language and some shared "truths" linked to what counts as effective school development and good school leadership.

Secondly, the strategy with regular quality dialogues proves to create opportunities to regularly follow up the results, deepen the analyses and point out the direction of the school improvement work. At the same time, there is variation in how the principals translate and use the quality dialogues in local practice. Another aspect of LEA strategies that at least indirectly appears to have impacted the schools' improvement capacity is the so-called strategic framework. With this framework, there is clear substantive management and control that concerns the development of the schools' quality work, a strong focus on school leadership, as well as school documentation.

Discussion and implications

In the result section above, the findings linked to the long-term effects of an LEA's quality management work concerning supporting schools' capacity building have been analysed. In this final part of the article, the aim is to discuss how we can understand these results and what conclusions regarding conditions for LEA's quality management work that can be drawn.

As discussed initially, several studies have showed the important significance and role the LEAs can have in supporting schools' improvement of educational quality and strengthening equality: (e.g. Rorrer et al., 2008; Leithwood, 2010; Day et al., 2016). The results from this study confirm these studies and has demonstrated that the LEA, with a long-term and cohesive quality management work, appears to have an important function when it comes to supporting and

strengthening central aspects of the schools' capacity building. However, in what degree seemed to depend on schools' local contextual conditions and prerequisites. One such important prerequisite seems to be the school's degree of "receiving capacity". That is, if a school should receive and utilise support from the LEA in an effective way, some basic organizational and human resources appear to have to be in place, like an efficient organization and an established functioning school leadership in combination of a sufficient level of professional knowledge among the teachers etc. (Hargreaves, 2011; Timperley, 2011). Consequently, schools with a low degree of such receiving capacity may need a partly different, or maybe a more extensive, support from the LEA. This in turn raises question about how uniform or differentiated LEA strategies in relation to the schools should be.

Another important factor for LEA's ability to support the schools' capacity building, that is closely linked to the schools receiving capacity, tends to be how well the LEA quality management system ties into and is linked to the schools' local quality assurance work. In other words, the extent to which the LEA's strategies and activities are incorporated into and can constitute a support for the schools' improvement work seems to be crucial, rather than schools constantly adapting and (re-) acting in relation to LEA's quality management system. How well the LEA succeeds in this is also closely linked to the extent to which the LEA and school improvement processes reach all the way into the classrooms and succeed in generating actual effects on the teaching. Understanding this in light of a systemic school improvement approach (Harries et al., 2021; Hopkins et al., 2014), efforts to couple the LEA's and the schools' quality assurance work to

each other could be described in terms of strengthening the links between the organizational levels within the local school system.

In this effort to strengthen the couplings between the LEA's and the schools' quality work, with the aim of supporting the development of the teaching, the study's findings show that factors such as the schools' improvement history and improvement culture seem to be of great significance (Andersen et al., 2018). In other words, we also know that the local school context's social and psychological conditions with regard to e.g. school actor attitudes, dominant norms, the degree of trust and so on, will to a large extent affect the conditions and outcomes of the LEA's quality work. At the same time, this study showed that it is also these aspects of the schools' improvement capacity that tend to be the most difficult for the LEA to be able to affect with its quality management work (Lee et.al., 2012). It seems that more formal strategies, such as results follow-up, analysis of data and accountability, etc., are not the single way to address and be able to influence the school's capacity building, and especially the schools' improvement culture. In accordance with Lee et al. (2012), our findings indicate that, for instance, the data-based improvement work does not work in isolation, but needs to be backed up by more "soft" strategies that involve creating conditions for cooperation and support, dialogue and learning.

In the comparison between the schools' local quality assurance systems and their improvement work, it is clear that their quality does not seem to be dependent to which socio-economic area the schools are located in. In other words, in the study there were schools with well-developed and less well-developed quality systems in both favourable and less favourable school areas. Here, factors such as the schools' improvement leadership and improvement culture appear to play a

greater role. On the other hand, it was clear that schools located in disadvantaged areas were significantly more dependent on having a well-functioning quality system and a teaching practice of high quality that could effectively address and handle the often major challenges and problems. In more favourable areas, the students' academic performance was not as dependent on this as students were often having strong support from the home. It was also clear how the LEA made clearer demands on and was more involved in schools with low academic performance in the form of more follow-ups, more frequent school visits and more improvement initiatives. However, schools located in favourable socio-economic areas where the academic performance is often good tend to "get away" with a quality system that is not of good quality.

Implications with regard to the LEA's possibilities of strengthening schools' capacity building

In conclusion, in the light of the above discussion, a number of implications are raised with relevant issues also linked to the LEA's quality management.

- The study's findings indicate the importance of the LEA developing strategies and activities within the scope of its quality work that involve a development of all aspects of the school's improvement capacity. In several cases, this means a broadening of the LEA's quality management work where both more formal and traditional strategies are supplemented with more soft strategies where the focus in the capacity building takes place through mutual cooperation and learning.

- A further implication for the LEA's quality management is the importance of finding a balance between control and support.

Such a balance seems to be the most effective way of strengthening the links between the organizational levels and reaching all the way out to the teaching. The study's findings point to the importance of a mutual integration of the LEA's and the schools' quality work.

- The above aspect is also related to the question of how general or specific the LEA's quality work should be in relation to the local needs and conditions of the schools. With overly general strategies and efforts, there is a risk that the schools' actual development needs are not met. However, on the other hand, with excessively need-driven efforts, where the greatest resources are spent on schools with low academic performance, there is a risk of overloading the school's quality work. In other words, this is where LEA support goes on to become an obstacle to local school development work.

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Research in Educational Administration & Leadership

Understanding Teacher Leadership: A Survey of the Field

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Abstract

Teacher leadership (TL) has become a popular topic in educational research whereby teachers have increasing responsibilities and voice outside of their classrooms. TL has been shown to be important for school reforms, teacher satisfaction, and student learning. The amount of research on TL has grown; however, it continues to be criticized for lacking a coherent definition and theoretical base. Additionally, TL, as a field of study, lacks any organization or regularly occurring meetings. This study surveyed international TL scholars using both Likert items and open-ended questions. Convergent mixed methods analysis showed that participants agreed that TL lacks a cohesive definition, but four common themes emerged from the data on the definition. This analysis shows that while specifics of TL differ across settings, there are some common understandings of TL.

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Understanding Teacher Leadership: A Survey of the Field

Educational decentralization has been a trend in the United States since the mid-1980s with a particular aim to move away from a focus on individual leaders and hierarchical structures that too often result in teachers feeling overburdened, disenchanted, and alienated (Evans, 1996; Frymier, 1987). Shared governance has instead become more prevalent, whereby leadership is shared among a distributed group of professionals (Hallinger & Kovačević, 2021; Harris, 2003). One manifestation of this trend is the growing focus on teacher leadership (TL). Interest in TL as an academic field has grown in the last few decades (Pan et al., 2023) with 159 articles listed in the Scopus index over the previous two years that address the topic. However, as Berg and Zoellick (2019) state, "The research base on teacher leadership is notoriously weak" (p. 2). Even with this growth in research in the field of TL, there is no regularly functioning organization or meeting for scholars to come together and discuss issues specific to research in this area.

Meanwhile, the benefit of TL to schools has become increasingly clear. Research has consistently demonstrated that for schools to function optimally, teachers must be engaged in TL (Nguyen et al., 2020). When TL thrives in a school, teachers support each other towards instructional improvement (Fairman & MacKenzie, 2015; Miller et al., 2022). Likewise, school change is positively influenced through the

enactment of TL (Pan & Chen, 2021). TL has also been strongly associated with teacher job satisfaction (Bogler, 2001; Liu et al., 2021). Finally, TL has been correlated to student achievement (Sebastian et al., 2017; Shen et al., 2020).

Meanwhile, the benefit of TL to schools has become increasingly clear. Research has consistently demonstrated that for schools to function optimally, teachers must be engaged in TL (Nguyen et al., 2020). When TL thrives in a school, teachers support each other towards instructional improvement (Fairman & MacKenzie, 2015; Miller et al., 2022). Likewise, school change is positively influenced through the enactment of TL (Pan & Chen, 2021). TL has also been strongly associated with teacher job satisfaction (Bogler, 2001; Liu et al., 2021). Finally, TL has been correlated to student achievement (Sebastian et al., 2017; Shen et al., 2020).

However, the TL field has been criticized as being limited by the lack of a cohesive definition (Wenner & Campbell, 2017). Claims have also been made that the research base in TL is weak (Berg & Zoellick, 2019) and that it lacks theoretical foundations (York-Barr & Duke, 2004). This mixed methods research project seeks to understand how scholars in the field of teacher leadership understand the nature of the field by asking the following research questions:

- To what extent do TL scholars consider it to be a distinct field of study?
- Is there a desire among TL scholars for a more organized professional structure of the field?
- Do TL scholars consider the field of TL to have a cohesive definition?

Review of Literature

Defining Teacher Leadership

While research and attention on TL has grown over the past three decades (Pan et al., 2023), the field has been criticized as ill-defined and lacking a cohesive definition (Berg & Zoellick, 2019; Cosenza, 2015; Wenner & Campbell, 2017). The literature indicates that TL encompasses everything from the first wave of traditional classroom roles like department chair, to the second wave of roles leading out of the classroom (such as team leaders, curriculum developers, reading specialists, etc.), and now to the third wave of TL focused on teachers as agents of school change in and out of the classroom (Silva et al., 2000) with a movement towards TL as transformational classroom leadership (Pounder, 2006). This article takes a broad view of TL and recognizes that it can be conceptualized and practiced in a variety of ways depending on the school, organizational, and policy context (Anderson, 2002; Wenner & Campbell, 2017). Successful TL entails a distribution of leadership roles within the expertise areas of experienced teachers that disestablishes administrative hierarchy in order to model collaboration, create cross-curricular integration, promote collegial encouragement, form consensus among faculty, and display vigilant professionalism (Lambert, 2002). TL includes a variety

of responsibilities, such as mentoring for improved teacher practice, influencing the school for learning effectiveness, bridging gaps between administration and faculty, and contributing to a broader community of teacher leaders (Schott et al., 2020; Tsai, 2015). Thus, this study sought to further understand scholars' understanding of the definition of TL.

The research clearly indicates that context matters in TL (ex. Anderson, 2002; Arden & Okoko, 2021; Arden & Okoko, 2023). However, there have also been indications that certain aspects or conceptualizations of TL may be common across settings (Webber, 2021). The International Study of Teacher Leadership (Webber et al., 2023) examined TL in countries across the globe. That study found that TL is an "umbrella term that refers to the influence of primarily classroom-based teachers on the larger school community" (Webber & Andrews, 2023, p. 342). Within individual contexts there have been some attempts at defining TL. For example, one attempt at codifying TL in the United States has been the Teacher Leader Model Standards (Teacher Leadership Exploratory Consortium, nd.). The Teacher Leader Model Standards organize TL into seven domains as follows:

> Domain I: Fostering a Collaborative Culture to Support Educator Development and Student Learning
>
> Domain II: Accessing and Using Research to Improve Practice and Student Learning
>
> Domain III: Promoting Professional Learning for Continuous Improvement
>
> Domain IV: Facilitating Improvements in Instruction and Student Learning

Domain V: Promoting the Use of Assessments and Data for School and District Improvement

Domain VI: Improving Outreach and Collaboration with Families and Community

Domain VII: Advocating for Student Learning and the Profession

The Teacher Leader Model Standards have the potential to allow educators to see a third role within schools that has traditionally been divided between teachers and principals (von Frank, 2011) whereby teachers take on both formal and informal leadership positions and take part in school decision-making. These standards were developed by a broad consortium of partners from government agencies, education think tanks, universities, and preK-12 school district personnel. Additionally, these standards provide a framework for both teacher professional learning and conducting research (Ado, 2015). However, the Teacher Leader Model Standards continue to need more dissemination about teachers so they can better understand TL (Cosenza, 2015). Additionally, these standards have been criticized for not including building a shared vision and omitting effective classroom instruction (Berg et al., 2014). While the Teacher Leader Model Standards may have intended to provide a framework for defining and understanding the field of TL, it is unclear to what extent this has been achieved. This study builds on previous research by surveying scholars to understand their conceptions of TL as a unique field of study and their definitions of TL.

Teacher Leadership as a Field of Study

Another lingering question regarding TL is the extent to which it constitutes an independent field of study. As a field of study, it has

been criticized for lacking a theoretical foundation (Muijs & Harris, 2003; Wenner & Campbell, 2017). Scholars in TL have relied heavily on theories developed in the school leadership and administration literature (Pan et al., 2023) such as distributed leadership (Muijs & Harris, 2003) and shared leadership (Wiens et al., 2024). Other authors have based their work in TL on more teacher-centered theories such as constructivism (Nerlino, 2020). These uncertain theoretical underpinnings may lead some to question whether TL can be considered a distinct field of study.

In the environment of scholarly empirical and theoretical work in a field of study, many academic fields are organized through professional associations. Both in the United States and around the world, scholars organize themselves according to specific fields of study in these professional organizations. However, TL, as a field of study, does not currently have such an organization. While there has been several meetings and conferences convened to discuss TL, these were "one off" events such as meetings of scholars at conferences not devoted specifically to TL. Organizations focused on leadership and administration as well as on teacher education can include elements of TL, but it is not the focus of either. Berg and Zoellick (2019) describe one such meeting of scholars dedicated to TL that met at the American Educational Research Conference. In this meeting scholars worked towards a conceptual framework of TL. However, these meetings were not sustained. The question remains whether or not TL scholars think of TL as a distinct field of study.

While scholarly work does not convincingly situate TL as a distinct field of study, universities and other teacher professional learning programs have continued to create and offer TL programs. Berg et al. (2019) documented 285 programs in the United States that support TL.

In some states these programs have even received financial support from state departments of education (Wiens et al., 2024). Berg et al. (2019) found that these programs provide support to teachers in three ways:

> *(1) preparation of teachers with knowledge and skills that can help them to lead; (2) positioning of teachers in leadership roles to capitalize upon their expertise; and (3) recognition of teachers as leaders through awards and other forms of appreciation or acknowledgement. (p. 3)*

Based on the understandings of teacher leadership, and derived from teacher education/curriculum and leadership/administration literature these programs prepare teachers to be leaders not as a pathway to administrative positions, but from their own classrooms.

Research and theory in TL are situated at the crossroads of the broad fields of teacher education/professional learning and leadership/administration. While TL literature is informed by theory and research in these fields, it does not fit comfortably in either field at the exclusion of the other. This paper sought to understand how scholars whose work focuses on TL, see the field as distinct from other fields of study while also understanding if TL lacks a cohesive definition and if there is a desire for more formalized structures in TL.

Methods

This study employed a convergent mixed methods design (Creswell & Plano Clark, 2018). Data was collected through an online survey of TL scholars that included both Likert-style items and open-ended questions. Quantitative and qualitative data were collected

simultaneously, and coded separately before being analyzed together. The participants, instrument, and analysis are described in this section.

Sample

There were three types of TL scholars. First, were individuals publishing literature in TL. These TL scholars were identified as any person who published a work that was cataloged in the Scopus database during any time period and used the keywords "teacher leadership". The second group were individuals who teach in a university-based TL program. To identify these individuals, an internet search was conducted to find faculty members who taught in a TL university-based program. Any faculty or program email addresses found during this search were added to the mailing list. The mailing list included 641 valid email addresses. Finally, there is a list of scholars who attended the meeting described by Berg et al. (2019) at the American Educational Research Conference over the course of several years who signed up for a listserv. The survey was provided to participants through the Qualtrics online survey platform.

In all, 118 TL scholars completed at least some part of the survey. Due to the nature of our research questions, we asked very limited demographic questions. Not all participants responded to all questions. Of those that responded, 88.6% indicated that they were affiliated with a university and 11.4% were affiliated with other educational intuitions or retired. Participants came from 26 different countries as illustrated in Table 1. Of these countries, by far the largest number (n = 65) were located within the US. As shown in Table 2, 53.7% of participants responded that their institution had a TL program.

Table 1.

Participant Countries

Country	# Of Participants
Australia	4
Belgium	1
Brazil	1
Canada	6
China	1
Colombia	1
Estonia	1
Germany	1
Hong Kong	1
Indonesia	1
Ireland	1
Jordan	1
Lithuania	2
Malta	1
Netherlands	3
New Zealand	1
Portugal	1
Qatar	2
Singapore	5
Spain	3
Sweden	1
Switzerland	1
Taiwan	1
Turkey	3
United Kingdom	3
United States	65
Total	112*

* Not all participants listed their country.

Table 2.

Teacher Leadership Programs

Does your institution have a TL program?	Number of Responses
Yes	44 (53.7%)
No	38 (46.3%)
Total	82*

*Not all participants answered this question.

Instrument

The survey was developed by all three members of the research team to address the three research questions noted earlier. The research team collaborated equally in the question generation process based on their understanding of the literature and current practices in TL. In addition to the limited demographic questions, eight statements that were relevant to our research questions were selected for analysis. Participants responded to each question on a five-point Likert scale with the following scale: 1 = strongly disagree, 2 = somewhat disagree, 3 = neither agree or disagree, 4 = somewhat agree, and 5 = strongly agree. The full list of questions can be seen in Table 3. One of the open-ended questions was selected for analysis whereby participants responded to an open-ended question related to their definition of TL.

Table 3.

Likert-style Survey Statements

Survey Statements
Teacher leadership is a distinctive field of study.
Teacher leadership research lacks a cohesive definition.
Teacher leadership research lacks a strong theoretical foundation.
Teacher leadership would benefit from having a professional conference dedicated to the empirical and theoretical study of the field.

Teacher leadership would benefit from having a professional conference dedicated to gathering individuals who lead teacher leadership training programs (ex. university programs, professional development organizations).
I am very interested in attending a regularly occurring North American conference dedicated to the study and development of teacher leadership.
I am very interested in joining a professional organization dedicated to the study and development of teacher leadership.
I would only attend a teacher leadership conference if it was associated with a conference I already attend (or held concurrently in the same place).

Analysis

Quantitative Analysis

Quantitative analysis included examination of the Likert-style questions from the survey. Descriptive analysis was used to understand scholar responses to provide statements (Hinkle, et al., 2002). For each item, frequency counts were generated. These counts will be described below. Quantitative analysis was conducted using SPSS version 29 software.

Qualitative Analysis

In addition to the quantitative data, the present study also examined the perspectives of those engaged in teacher leadership on the meaning of teacher leadership. A single, open-ended question asked respondents: "How do you define teacher leadership?" The intent of the question was to encourage responses that reflected both a range of views and to attempt to identify commonalities or similarities across all or most narrative responses.

This study sought to refine scholarly and applicable definitions of the scope and nature of teacher leadership as perceived by those working in the field. It was intended not to confirm or reject a specific

hypothesis or to develop policy in the field, but rather to provide guidance that may help clarify what is or is not generally assumed to reflect work that can be considered unique to teacher leadership as distinct from other professional activities or roles of educators (see Krippendorf, 2004 and Neuendorf, 2002).

To this end, the second author conducted an iterative content analysis process of all responses to this question focused on identifying patterns (commonalities) and significant discontinuities across the range of responses provided. Constant comparative techniques described by Glaser and Strauss (1967), Estabrooks, Field and Morse (1994), and Tesch (1990) were used to further refine analytic categories. These techniques were applied iteratively until consistency of coding and resulting constructs was achieved as suggested by White and Marsh (2008). The first author read the data and checked the codes and provided feedback to the second author and any issues were settled through dialogue.

The process required six phases:

1. Individual responses were examined in randomly generated order to derive the original authors' intended meaning. Notes were made by the investigator clarifying intent and the rationale by which this intent was inferred, but no coding of responses was made at this phase.

2. Individual responses were again read in a newly randomized order to clarify or refine the investigator's interpretation of the original authors' meaning. Again, no coding was done at this phase.

3. Individual responses were again randomly ordered and descriptive codes were assigned to each distinct element of

aspect of teacher leadership referenced by the original author. Because individual responses frequently included reference to multiple elements or aspects of teacher leadership, each distinct reference was coded (i.e., multiple distinct codes could be assigned across a single extended response.

4. Individual responses were randomly reordered and descriptive codes were revisited and refined as deemed appropriate to appropriately describe the author's intent.
5. Coded response elements were organized into eight emerging categories that collectively encompassed each individual response element.
6. Individual responses were again randomly ordered (without codes) and response elements examined for assignment to the eight categories. This process resulted in four categories that reflected commonalities across respondents and fifth that included individual response elements that diverged from the common patterns.

Mixed Analysis

For mixed analysis we examined how both the qualitative and quantitative data answered the research questions together. This involved identifying concurrent and discordant themes between the two sets of data. The research team worked collaboratively on this stage of the process in order to boost the validity of the findings.

Results

Quantitative Data

We began the data analysis by calculating descriptive statistics for the Likert-style questions. Full participant response data can be seen in Table 4.We computed the frequencies of each response. The first statement read, "Teacher leadership is a distinctive field of study." Of the participants that responded to this item, 88.5% either strongly agreed or somewhat agreed. The most frequent response was "strongly agree" (n = 61). For the item, "Teacher leadership research lacks a cohesive definition", 72.8% of respondents selected either "strongly agree" or "somewhat agree". The most frequently selected response for this item was "somewhat agree" (n = 60). The third item that participants responded to was, "Teacher leadership research lacks a strong theoretical foundation." For this item, 48.7% of participants that responded indicated that they either strongly agreed or somewhat agreed. On the other hand, 32.7% of respondents selected either strongly disagree or somewhat disagree. The most frequent response was "somewhat agree" (n = 40); however, the second most frequent response was "somewhat disagree" (n = 32). For the item, "Teacher leadership would benefit from having a professional conference dedicated to the empirical and theoretical study of the field", 89.3% of individuals that responded selected either strongly agree or somewhat agree. The most frequent response was "strongly agree" (n = 61). The fifth Likert-style item was, "Teacher leadership would benefit from having a professional conference dedicated to gathering individuals who lead teacher leadership training programs", whereby 86.8% of respondents selected either "strongly agree" or "somewhat agree". The most frequently selected item was "strongly agree" (n = 65). The next item asked participants to respond to the

statement, "I am very interested in attending a regularly occurring North American conference dedicated to the study and development of teacher leadership." For this item, 60.1% of respondents either strongly agreed or somewhat agreed. The most frequent response was "somewhat agree" (n = 37); however, "strongly agree" (n = 31) and "neither agree nor disagree (n = 25) were close behind. For the statement, "I am very interested in joining a professional organization dedicated to the study and development of teacher leadership.", 78.0% or respondents selected either "strongly agree" or somewhat agree". The final Likert-style item read, "I would only attend a teacher leadership conference if it was associated with a conference I already attend (or held concurrently in the same place)." and 36.8% or respondents selected either "strongly agree" or "somewhat agree". However, 31.6% of respondents selected either "strongly disagree" or "somewhat disagree". The most frequently selected response was "neither agree nor disagree" (n = 36). "Somewhat agree" was the second most frequently selected response (n = 30).

Table 4.

Participant Responses to Likert Items with Response Numbers and Percentages

Statement	Strongly Agree	Somewhat Agree	Neither agree nor disagree	Somewhat agree	Strongly disagree	Total
Teacher leadership is a distinctive field of study.	61 53.98%	39 34.51%	5 4.42%	6 5.31%	2 1.77%	113
Teacher leadership research lacks a cohesive definition.	23 20.18%	60 52.63%	12 10.53%	16 14.04%	3 2.63%	114
Teacher leadership research lacks a strong theoretical foundation.	15 13.27	40 35.40%	21 18.58%	32 28.32%	5 4.42%	113
Teacher leadership would benefit from having a professional conference dedicated to the empirical and theoretical study of the field.	61 54.46%	39 34.82%	6 5.36%	6 5.36%	0 0%	112
Teacher leadership would benefit from having a professional conference dedicated to gathering individuals who lead teacher leadership training programs	65 57.02%	34 29.82%	10 8.77%	5 4.39%	0 0%	114
I am very interested in attending a regularly occurring North American conference dedicated to the study and development of teacher leadership.	31 27.43%	37 32.74%	25 22.12%	13 11.50%	7 6.19%	113
I am very interested in joining a professional organization dedicated to the study and development of teacher leadership.	42 36.84%	47 41.23%	14 12.28%	9 7.89%	2 1.75%	114
I would only attend a teacher leadership conference if it was associated with a conference I already attend (or held concurrently in the same place).	12 10.53%	30 26.32%	36 31.58%	17 14.91%	19 16.67%	114

Qualitative Data

Of the 118 survey respondents, all but three provided some response to the open-ended question, "How do you define teacher leadership?" These ranged from a single word to expansive, multi-paragraph responses. Across these, responses suggest that the item did, indeed, elicit thoughtful and insightful contributions. Some respondents acknowledged frustration about what they felt was a lack of consistency in defining teacher leadership ("The longer I do this, the less I know how to define it," or "This is the problem with this field – a definition that encompasses all of what scholars call 'teacher leadership' is so broad it's effectively useless"). Nonetheless, nearly every respondent provided insights into how to define or distinguish what teacher leadership is, what teacher leaders do, and the primary purposes or benefits of teacher leadership.

Content analytic methods (described above) identified four themes across responses. Each of the themes is discussed below.

Theme 1: Teacher leadership includes ongoing classroom and direct "student-facing" responsibilities. Nearly unanimously, respondents noted that a defining characteristic of teacher leadership is continued responsibility as an active classroom teacher. This sustained grounding in direct classroom or student engagement is, for many respondents what distinguishes teacher leadership from other forms of school leadership (e.g., administrative roles). This is reflected in the direct responses like *"…roles for educators who remain in student-facing positions to use their social capital through mentoring,"* and *"Teacher leaders are teachers who maintain K-12 classroom-based teaching responsibilities while also taking on leadership responsibilities outside the classroom."*

Others expanded on this basic idea, often by elaborating on the additional activities or responsibilities assumed by teacher leaders. For many respondents, this was directed toward instructional improvement within the professional learning community or school. For example,

> *[Teacher leaders are] classroom teachers who hold classroom teaching responsibility while also assuming a leadership role in improving and strengthening the instructional practices of other teachers in the school through mentoring individual teachers and leading the professional learning community.*
>
> Or another,
>
> *People whose professional/organizational position is as a teacher (student-facing role in a classroom, primary responsibilities being teaching and learning) who take on leadership responsibilities related to instructional leadership among the instructional faculty in a school.*

Theme 2: Teacher leadership involves work and impact beyond one's own classroom. Respondents felt strongly that teacher leaders maintain classroom-based responsibilities. At the same time, all felt that teacher leadership required responsibility and impact "*beyond the scope of one's own classroo*m" and in ways that "contribute to improvement." A respondent from South Africa describes this well, "Teacher leaders [have and use] influence in different ways and on different terrains or areas inside and outside their classroom."

The breadth of the influence of teacher leaders was described differently among respondents. Several drew from noted scholars in the field (e.g., York-Barr & Duke, 2004) and emphasized that "teacher leadership occurs when teacher leaders influence their colleagues to

improve" often intended to "innovate and transform practices" and "advocate for development of best practices." Others explicitly noted that teacher leaders affect a range of education professionals both within and beyond a school or district. For example,

> *Teacher leadership is the process in which teachers, based on expertise and affinity, influence colleagues, school leaders, and others inside and outside the school.*
>
> And,
>
> *Teachers who take on additional responsibilities to support school, district/CMO, or state-level initiatives to improve teaching and learning beyond the scope of their own students.*

This influence might include leadership among grade-level peers or at the department or school levels, but it need not be limited in this way. Many respondents felt that this impact might well extend across one's state or nationally. Common also was the idea that this impact should engage non-school audiences (e.g., communities, decision or policymakers, etc).

Theme 3: Teacher leadership manifests through formal and informal roles. An interesting theme throughout the responses was that teacher leadership was distinctly different from other formal roles in education. In many ways, this reflects a logical extension of the earlier themes, particularly in terms of establishing teacher leadership as something that differs from other forms of educational leadership. It is "defined by formal and informal roles" or, differently, "at the intersection of formal and informal leadership." In an extensive and thoughtful response that focused on the nature of teacher leadership, a respondent from New Zealand included,

> *The typical conception of leadership is according to position – a named role, with a title, status and remuneration. . . I think of teacher leadership more broadly so that it encompasses leadership according to position AND leadership as practice. This broader definition recognizes informal leadership and non-positional leadership by teachers.*

Notably, not all respondents felt this way. For a small number of respondents, teacher leadership is defined in clearly formal ways. Some of these distinguish teacher leadership from administrative roles. For example, "District leaders or site level leaders who are not the principal." However, others did not. One respondent noted that teacher leadership is a state-defined role,

> *In my state, a Teacher Leader is a teacher in the K-12 setting [who] has obtained additional credentials to lead their peers and assist them with being more effective teachers. The Teacher Leader serves as a classroom teacher in a school and is either currently in or aspiring to take on a leadership role.*

Theme 4: Teacher Leadership is a collaborative, interactive endeavor. Whether formal or informal in nature, respondents overwhelmingly spoke of Teacher Leadership in terms of influence or persuasion focused on the professional growth and development of oneself and others – "Teacher leadership is grounded, regardless of formal and informal roles, in teachers influencing others." Highlighted throughout responses was a focus on collaboration and engagement with professional peers. This "collegial" element of teacher leadership is reflected in each of these respondents' contributions,

> *I believe that we need to fuse/connect teaching, learning, and leading. The leading occurs in the flow of daily work as colleagues influence*

each other with questions and insights about what works and why for students as learners.

Teacher Leadership is a shared endeavor rather than a solo activity which implies that educators have similar values and attributes that they share.

The "different terrains," as one respondent described them, in which this form of leadership was manifested were also frequently mentioned. In some cases, professional learning communities were specifically noted as a conducive setting for promoting teacher leadership. As in, "Assuming leadership roles through mentoring individual teachers and leading the professional learning community." In other cases, teacher leadership was described in ways that reflect shared decision-making responsibility within a school community – "I like to link the notion of teacher leadership with distributed leadership" or, more expansively, "teacher influence in different domains – instruction, discipline, curriculum, organizational management financial planning, hiring, etc."

It is important to note that these four themes represent generally consistently mentioned aspects of teacher leadership across all respondents, but they do not and cannot reflect the uniqueness or diversity of ideas that arose across the 115 responses. For instance, several respondents suggested that leadership, and particularly teacher leadership, should focus on justice and equity rather than on simply academic outcomes. Others referenced the benefits of teacher leadership, among them - "providing teachers voice and agency" or "fostering leadership advancement." And though not often explicated by respondents, the inherent, even unknowing leadership of teachers seemed common. As one respondent aptly stated, *"Teachers can be leaders without realizing it."*

It is also interesting that none of the respondents referenced the Teacher Leader Model Standards or other national or international standards documents for TL. The ways in which respondents describe teacher leadership often reflect constructs embedded within the Standards (e.g., building collaborative relationships and fostering teachers' professional development), but these are not explicitly linked with the Standards developed for the field. This suggests that the substance of many of the Standards reflects the views or experiences of those working in the field. However, it is not clear that the Standards have or do guide the work of teacher leaders or those who prepare them.

Mixed Results

The mixed analysis of data is centered around the third research question, "Do TL scholars consider the field of TL to have a cohesive definition?" The quantitative data provided two relevant statements related to this question, "Teacher leadership is a distinctive field of study" and "Teacher leadership lacks a cohesive definition". Quantitative data support that participants see TL as distinctive with 88.5% of respondents saying they agree with this idea. However, while they indicate they think of TL as a distinct field of study, the participants also agree that TL lacks a definition with 72.8% of respondents agreeing there is not a cohesive definition. The qualitative data reflect this ambivalence. Participants agree with the statement that TL lacks a cohesive definition, in providing their own definitions of TL, there was some level of agreement about four essential components of TL including ongoing student-facing (classroom) duties, work, and impact beyond one's own classroom, including both formal and informal roles, and collaboration. However, participants also acknowledged the difficulty with even trying to create a definition

with one scholar stating, "This is the problem with this field – a definition that encompasses all of what scholars call 'teacher leadership' is so broad it's useless."

While data did coalesce around the four themes, there was substantial variation in the comparative emphasis respondents placed on each of these. There was also far less agreement about the nature of the work of teacher leaders. Commonly TL behaviors included supporting or informing colleagues' professional practice (developing others professionally), empowering teachers by giving them "agency" or "voice", contributing to the community of learners, and improving student learning, achievement, and success was a very commonly mentioned aspect of a teacher leader's work. There were also areas in which little consensus was found in regard to some components of TL. For some participants, particularly those based in the United States, there was an emphasis on TL focused on issues of social justice. Nearly all participants agreed that TL involved both formal and informal roles; however, a subset of participants focused more on formal roles (department chair, union representative, or work in higher education). The mixed data show that TL scholars agree on some basic, fundamental aspects of TL, but beyond that there is variation in conceptions of TL.

Discussion

Defining Teacher Leadership has been a subject of increased research and discussion since the beginning of this century (Pan et al., 2023). However, the field has been criticized for lacking a cohesive definition (Wenner & Campbell, 2017). TL literature suggests that teacher leadership encompasses various roles, from traditional classroom responsibilities to broader roles aimed at initiating school-wide change

(Nguyen et al., 2020). Successful TL involves distributing leadership roles among experienced teachers to foster collaboration, integrate curricula, encourage colleagues, build consensus, and uphold professionalism (Wenner & Campbell, 2017; Schott et al., 2020).

Teacher Leadership as a Field of Study faces criticism for lacking a robust theoretical foundation and distinct organizational structure (Berg, & Zoellick, 2019). Meanwhile, unlike established academic fields, teacher leadership lacks a dedicated professional association, relying instead on sporadic conferences and meetings. Despite this, universities and professional learning programs continue to offer teacher leadership programs, reflecting a growing interest in cultivating teacher leadership skills (Berg et al., 2019). This study sought to understand how scholars conceptualize TL as a field of study, their definition of TL, and the need for a more organized structure in the field.

Previous research has shown that cross-national research in TL can reveal both common themes across contexts as well as distinct aspects of TL in local situations (Arden & Okoko, 2021, 2023). The purpose of this study was to examine if there was a consensus definition of TL as well as a further need for professional organization among TL scholars. Surveys administered to TL scholars reveal a consensus on the distinctiveness of teacher leadership as a field of study yet highlight a lack of cohesive definition. Qualitative analysis further underscores this ambivalence, revealing common themes such as teacher leadership involving ongoing classroom responsibilities, broader impacts beyond the classroom, formal and informal roles, and collaboration. However, variations in emphasis and differing interpretations suggest a need for further clarification and consensus in defining teacher leadership. Meanwhile, the participants in this

study recognized that TL, as a field of study, would benefit from a more organized structure including a professional organization and regularly occurring meetings or conferences.

Data presented in this study indicate that there are some shared understandings of what TL is as defined by participants in this study who consider a teacher leader someone with both student facing and adult facing responsibilities. Beyond that basic definition, it is more complicated. Webber and Andrews (2023), following an international study of TL, concluded that TL is an umbrella term for a broad range of teacher beliefs and behaviors. Instead of scholars continually wringing their hands about the lack of a cohesive definition (Berg & Zoellick, 2019; Cosenza, 2015; Wenner & Campbell, 2017), the field would benefit from using this basic idea of TL as a starting point for research and discussion about policies, practices, and theories that support teacher empowerment and leadership for the benefit of students in schools across the globe.

Limitations and Future Research

To the best of our knowledge, this is the first attempt to survey international TL scholars to better understand the status of the field. The first limitation of this study is the sample. The total number of participants is a fraction of the total number of scholars in TL internationally. This study makes no claim that this is a representative sample; however, it does provide the first examination of scholars' opinions on TL. Additionally, the sample is heavily weighted towards scholars from the United States. This is likely a reflection of where names and email addresses were identified. A recent bibliographic analysis of TL literature included in the SCOPUS index (Pan et al., 2023) found that 53.80% of works came from the United States. This is

similar to 58.04% of scholars in this sample were located in the United States. Certainly, there is a need to prioritize the scholarship of scholars from a broader range of countries to inform the discussion on TL.

This study sought to bring together the voices of scholars from around the world. However, there continues to be a need for international comparative work in TL. Webber (2021) makes a compelling case for the need for additional research in this area. Webber and colleagues (2023) have provided an excellent start to this work. However, as research indicates the context-specific applications of TL (Anderson, 2002), the need to better understand the conceptualizations and implementations across multiple contexts remains. This work needs to continue across countries and across different contexts within countries.

Conclusion

While scholars of TL continue to conclude that the field lacks cohesive definition, certain aspects of TL have emerged as key components of a definition. Specifically, TL scholars point to TL including student-facing as well as work beyond the classroom in formal and informal roles that is collaborative. However, for the field to move forward coalescing around a professional organization or a regularly occurring conference may be the next step in TL beginning a distinctive field of study. As scholars continue to conduct research and engage in the development of TL theories, the opportunity to further define and understand TL will continue to grow.

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Research in Educational Administration & Leadership

The Adaptation and Psychometric Analysis of the Global Transformational Leadership (GTL) Scale for Turkish Educational Institutions

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Abstract

Effective leadership is essential in transforming schools into vibrant learning environments that foster teachers' professional growth and boost student achievement. Among various leadership styles, transformational leadership, with its emphasis on vision, support, and innovation, stands out due to its potential to maximize performance and foster school success. The objective of this research is to translate and culturally adapt the Global Transformational Leadership Scale (GTL) by Carless et al. (2000) into Turkish, with a focus on its application in educational institutions. The adaptation process followed a rigorous methodology to ensure the scale's semantic and conceptual equivalence in Turkish culture. This process involved translation, back-translation, and revisions based on expert feedback. The research was conducted with a sample of 322 teachers from a mid-sized city in eastern

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Türkiye, and data collection took place in three phases: linguistic equivalence testing with English teachers, parallel testing with the Multifactor Leadership Questionnaire and other relevant scales, and test-retest reliability analysis. CFA was performed to verify the scale's factor structure, and various validity and reliability measures were assessed, including convergent validity, nomological validity, and measurement invariance across gender, education level, and tenure. The results indicated that the adapted GTL scale is a reliable and valid instrument for measuring transformational leadership in Turkish educational institutions.

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Introduction

Effective leadership plays a crucial role in transforming educational institutions into dynamic learning environments, supporting the professional development of teachers, and comprehensively promoting student achievement. This facilitates schools in achieving their shared goals and contributes to establishing a clear direction towards their objectives (Day et al., 2016; Garcia-Martinez et al., 2020). The literature contains numerous studies that highlight the significance of effective leadership in educational organizations (Gumus et al., 2018; Hallinger & Hosseingholizadeh, 2020). Notably, learning-centered leadership (Alanoglu, 2023; Male & Palaiologou, 2012), participative leadership (Somech, 2005), distributive leadership

(Tran et al., 2022), and transformational leadership (Nedelcu, 2013) emerge as prominent leadership structures on which school principals rely. Each of these leadership structures holds the potential to enhance student learning and improve the quality of teaching. Among these leadership types, transformational leadership stands out due to its unique characteristics (Dahlgaard-Park, 2015; Marks & Printy, 2003; Piccolo & Colquitt, 2006). It constitutes a vital component of effective school leadership by maximizing teacher and student performance and fostering school achievement (Boberg & Bourgeois, 2016; Leithwood & Sun, 2012; Ratna et al., 2022).

Transformational leadership is an approach that primarily focuses on the leader's vision and leadership style to improve the performance of teachers and students (Alzoraiki et al., 2023). This leadership style involves the leader collaborating with teachers to consistently provide support and motivation (Aydın et al., 2013). To promote the professional development of teachers, leaders should have a comprehensive understanding of their needs and offer appropriate support and resources (Leithwood et al., 2008; Thomas et al., 2020). As part of this process, leaders can establish mentoring programs, provide continuing education opportunities, and cultivate collaborative work environments to facilitate teachers' professional growth. However, Sun and Leithwood (2012) argue that transformational leadership not only aims to enhance teacher development but also strives to improve student achievement. Therefore, leaders should adapt educational programs and teaching strategies to meet the diverse needs and learning styles of students (Robinson et al., 2008). Student-centered learning methods and personalized educational programs have the potential to enhance student satisfaction and academic performance (Kumar et al., 2004). Adapting teaching methods to different learning

styles can also boost students' confidence and knowledge levels (Brannan et al., 2016). Taking individual differences into account can also improve the inclusion of disadvantaged students in the educational process (Gadbow, 2001). Thus, it can be argued that transformational leadership has the capacity to enhance the overall success of a school by optimizing the performance of both teachers and students (Boberg & Bourgeois, 2016).

Developing and supporting the leadership skills of school administrators is paramount for schools to achieve their goals. To accurately evaluate the leadership behaviors of school administrators and ensure their long-term viability (Demirbilek & Çetin, 2021), it is crucial to focus on transformational leadership. This leadership style positively impacts overall school performance by fostering the professional growth and motivation of teachers (Abuhassira et al., 2024; Zhang et al., 2022). Consequently, measuring teachers' perceptions of school leaders' transformational leadership skills is essential. This process provides valuable insights into school effectiveness and empowers school administrators to enhance their leadership practices. Furthermore, it supports the professional development of teachers, enabling them to discover their leadership potential and contribute to creating a more effective educational environment within schools.

The aim of this study is to adapt the Global Transformational Leadership Scale (GTL), developed by Carless et al. (2000), to the Turkish cultural context. Various transformational leadership scales, such as the Leadership Practices Inventory (Kouzes & Posner, 1990), the Conger-Kanungo Charismatic Leadership Scale (Conger & Kanungo, 1994), the Multifactor Leadership Questionnaire (MLQ; Avolio & Bass, 1995), and the Transformational Leadership Scale (Taş

& Çetiner, 2011), allow for a broad evaluation of transformational leadership behaviors. However, there is a growing interest in the use of the GTL for measuring transformational leadership in educational institutions in the international literature (e.g., Al-Aamri et al., 2024; Berkovich & Hassan, 2023; Charoensukmongkol & Puyod, 2021; Iqbal et al., 2023; Schmitz et al., 2023; Özdemir et al., 2024). This suggests that the GTL is a valid tool for educational settings, and its inclusion in the Turkish educational administration literature would be valuable. Validity and reliability analyses of the scale adapted to Portuguese culture have shown that the scale is valid and reliable (Van Beveren et al., 2017). As a brief, seven-item tool, the GTL offers a practical solution for measuring transformational leadership. Each item of the scale evaluates a different dimension of transformational leadership, demonstrating its comprehensiveness, efficiency, and effectiveness as a tool for researchers and practitioners to measure leadership behaviors (Carless et al., 2000). Therefore, the scale contributes to a faster and more comprehensive assessment of leadership skills and facilitates the examination of the impacts of the transformational leadership model.

Transformational Leadership Behaviors

Based on a comprehensive review of transformational leadership literature, Podsakoff et al. (1990) identified six key behaviors: vision setting and communication, role modeling, support of group goals, high performance expectations, individualized support, and intellectual stimulation. Carless et al. (2000) expanded this framework by distinguishing between staff support and individual development, leading to the identification of seven core behaviors influencing transformational leadership. Podsakoff et al. (1990) used "high performance expectancy," which Bass (1985) linked to charismatic

behavior, thus referring to it as "charisma" in the original scale. Carless et al. (2000) also adapted the term "staff development" to "teacher development" for educational contexts. The transformational leadership behaviors according to Carless et al. (2000) are: (1) vision, (2) teacher development, (3) support, (4) empowerment, (5) innovative thinking, (6) leading by example, and (7) charisma.

Vision: The capacity to articulate a cogent and compelling vision is fundamental to transformative leadership. Leaders adeptly convey their prospective objectives in order to steer and motivate the entire educational community towards common goals. This vision plays a pivotal role in nurturing a sense of purpose and guidance (Bass, 1985).

Teacher Development: Transformational leaders place a high priority on the ongoing development of teachers through the implementation of comprehensive professional development programs. This unwavering dedication not only strengthens teachers' skills but also cultivates a culture of perpetual improvement and adaptability, which is essential in the ever-changing educational landscape (Leithwood & Jantzi, 2000).

Support: Providing robust support systems is of utmost importance in an academic context. Leaders play a crucial role in improving both job satisfaction and performance by guaranteeing that teachers and staff members have access to the necessary resources and emotional support, enabling them to effectively carry out their respective roles (Demirtaş, 2010; Demirtaş & Alanoglu, 2015; Tschannen-Moran & Gareis, 2015).

Empowerment: Empowerment is a key element in which leaders inspire their staff to proactively take on more responsibilities and demonstrate initiative. Such empowerment fosters a more engaged and proactive

institutional milieu, thereby facilitating innovation and personal commitment to the institution's overall prosperity (Avolio & Bass, 1995).

Innovative or Lateral Thinking: Leaders foster an environment where creative solutions and new ideas are welcomed. This culture of innovation is crucial for adapting to changing educational demands and keeping the school at the forefront of educational practices (Moolenaar et al., 2010).

Lead by Example: Transformational leaders, who serve as exemplars, demonstrate elevated ethical principles and professional conduct. Their unwavering integrity and unwavering commitment profoundly impact the school culture and establish an exceptional benchmark for all community members to emulate (Brown & Treviño, 2006).

Charisma: Charisma enhances a leader's ability to motivate and inspire their team. Charismatic leaders exhibit personal charm and an alluring appeal, which prove to be highly efficacious in instigating transformative change and fostering unwavering dedication among their followers (Conger & Kanungo, 1998).

Method

The adaptation of the GTL Scale to Turkish was conducted in three stages, focusing on reliability and validity. Each stage's findings are presented in detail, ensuring a thorough examination of the adaptation process. The initial stage entailed an examination of paired sample t-tests and correlations based on the responses of 48 English teachers to the translated and back-translated scale. Next, the fundamental structure of the scale was verified through CFA using teachers' responses. The resulting outcomes were presented as validity statistics, encompassing analyses of convergent validity, nomological

validity, and measurement invariance. Finally, in the third stage, reliability evidence was provided by assessing Cronbach's Alpha, McDonald's Omega, CR, and test-retest values.

Participants

The study's population includes teachers from a medium-sized city (population 500,000-1,000,000) in eastern Türkiye during the 2023-2024 academic year. The study involved the participation of 322 teachers from this population. Data were collected at three different time points. In the first period (T1), the translated and original English versions of the GTL were administered to English teachers to assess linguistic equivalence. During the second data collection period (T2), the GTL was administered along with the "Multifactor Leadership Questionnaire" for parallel testing, focusing on the Transformational Leadership dimension, the "Short Transformational Leadership Scale," and the "Job Satisfaction Scale." Three weeks after these data were collected, the GTL was re-administered to the same group of 111 participants for test-retest reliability (T3). Table 1 provides participant information for both time points.

Table 1.

Participants' Demographic Information

Category	Variable	N	%
T1 (N = 48)			
Gender	Female	31	64.6
	Male	17	35.4
Education Level	Undergraduate	30	62.5
	Graduate	18	37.5
Tenure	14 years and below	25	52.1
	15 years and above	23	47.9

T2 (N = 322)			
Gender	Female	147	45.7
	Male	175	54.3
Education Level	Undergraduate	193	59.9
	Graduate	123	40.1
Tenure	15 years below	167	51.9
	15 years above	155	48.1
T3 (N = 111)			
Gender	Female	45	40.5
	Male	65	59.5
Education Level	Undergraduate	78	70.3
	Graduate	33	29.7
Tenure	14 years and below	63	56.8
	15 years and above	48	43.2

In the first group, 64.6% are female (n = 31) and 35.4% are male (n = 17), with 62.5% (n = 30) holding an undergraduate degree and 37.5% (n = 18) holding a graduate degree. Additionally, 52.1% (n = 25) have 14 years or less of experience, while 47.9% (n = 23) have 15 years or more. In the second group, 45.7% are female (n = 147) and 54.3% are male (n = 175). Among them, 59.9% (n = 193) hold an undergraduate degree and 40.1% (n = 123) hold a graduate degree. Moreover, 51.9% (n = 167) have 14 years or less of experience, while 48.1% (n = 155) have 15 years or more. In the third group, 40.5% are female (n = 45) and 59.5% are male (n = 65). Among these teachers, 29.7% (n = 33) hold a graduate degree. Furthermore, 56.8% (n = 63) have 14 years or less of tenure, while 43.2% (n = 48) have 15 years or more.

Ethical consideration

Ethical approval for the study was obtained from the Ethics Committee for Social and Human Sciences Research at Fırat University. All procedures were conducted in accordance with the ethical standards

set by the committee and the 1964 Helsinki Declaration and its subsequent amendments.

Scale and Procedure

The aim of this research is to adapt the Global Transformational Leadership Scale (GTL), developed by Carless et al. (2000), to the Turkish educational context. The GTL is a brief yet effective tool that measures seven key behaviors associated with transformational leadership using a five-point Likert scale. The scale was initially developed in Australia by evaluating 695 branch managers through assessments by their regional managers and subordinates. However, the transformational leadership behaviors emphasized by the scale—such as providing vision, enhancing motivation, and supporting individual development—are universal in nature and can be similarly evaluated across different types of organizations (Bass, 1997). The broad applicability of transformational leadership principles supports the usability of the GTL in the educational field. Indeed, studies by Eyal and Roth (2011) and Leithwood and Jantzi (2006) have demonstrated that leadership scales developed in non-educational settings can be successfully applied within the educational context. The increasing international use of the GTL in educational institutions (e.g., Al-Aamri et al., 2024; Berkovich & Hassan, 2023) provides further evidence supporting its adaptation to the Turkish cultural and educational organizational context. In this study, the GTL has been culturally and contextually adapted for Turkish educational institutions, following internationally recognized guidelines for scale adaptation (Hambleton & Patsula, 1999; International Test Commission, 2017; Seçer, 2015). First, permission was obtained from the original developers to adapt the scale. The researchers translated the scale items into Turkish, and the translation was reviewed by four

faculty members: two experts in Educational Administration and two in Educational Measurement and Evaluation. The items were revised based on their feedback and then reviewed by two Turkish language experts. Using the back-translation method (Brislin, 1970), the items were translated back into English and checked by two English language experts for any loss of meaning. Revisions were made according to their recommendations. To test the semantic, conceptual, linguistic, and experiential equivalence of the scale, both the Turkish and English forms were administered to English teachers with a two-week interval. Following these tests, the Turkish version of the scale was finalized. For nomological validity, the Multifactor Leadership Questionnaire (Avolio & Bass, 1995), the Short Transformational Leadership Scale (Berger et al., 2012; adapted to Turkish by Okan & Okan, 2021), and the Job Satisfaction Scale (Ho & Au, 2006; adapted to Turkish by Demirtaş, 2010) were used.

Data Analysis

First, the data were checked for missing values, and then skewness and kurtosis values were assessed. Values within ±1.5 were considered evidence of univariate normality (Tabachnick & Fidell, 2013). The values ranged from -1.130 to 1.243, demonstrating that univariate normality was achieved. Following this, the mean and standard deviation of the scale's dimensions were calculated to further assess the data's distribution. The adaptation of the scale was carried out in three stages: (1) language equivalence, (2) validity evidence related to the scale structure, and (3) reliability.

In the initial phase, to ensure the linguistic equivalence of the GTL, a paired samples t-test was administered. This test compared the responses from 48 English teachers at two-week intervals. The lack of

a significant difference in the t-test results confirmed linguistic equivalence.

In the next phase, various validity analyses of the GTL were conducted. Confirmatory Factor Analysis (CFA) was performed to assess the scale's unidimensional structure. Model fit was evaluated using the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Standardized Root Mean Square Residual (SRMR), following the guidelines of Xu and Tracey (2017). A good model fit is indicated by CFI and TLI values above .90, and RMSEA and SRMR values below .08, as per Hu and Bentler (1999). Convergent validity was assessed through Composite Reliability (CR) and Average Variance Extracted (AVE), where CR values higher than AVE values and an AVE above .50 suggest convergent validity (Fornell & Larcker, 1981). For nomological validity, parallel test correlations were examined. Measurement invariance was evaluated using the CFA model, with changes in $\chi 2$ used to assess measurement invariance (Byrne et al., 1989). Muthén and Muthén (2012) recommend testing for non-significant changes, indicating that a more constrained model fits the data as well as a less constrained model but with greater parsimony. Due to $\chi 2$'s sensitivity to sample size (Chen, 2007), multiple fit indices were used to evaluate nested models. Cheung and Rensvold (2002) suggest that a change of -.01 in ΔCFI is acceptable for measurement invariance. Alternative indices such as ΔRMSEA and ΔSRMR were also considered (Meade et al., 2008). Chen (2007) recommends a variation of .01 for ΔCFI and ΔTLI, and .015 for ΔRMSEA and ΔSRMR.

In the third stage, reliability analyses of the GTL were performed. The internal consistency of the scale was evaluated by calculating the Cronbach's Alpha and McDonald's Omega reliability coefficients, with

values of .70 or higher deemed acceptable (Hayes & Coutts, 2020; McDonald, 2013). Additional reliability evidence was provided by calculating composite reliability (CR) from the CFA factor loadings. To measure the scale's stability, a test-retest correlation was conducted, with significant correlation values at $p<.01$ indicating stability (Gravesande et al., 2019). For parallel tests, a correlation coefficient of .50 was accepted as the threshold value (Cohen, 1988).

Findings

This section sequentially presents the findings from the stages of linguistic equivalence, validity, and reliability of the GTL Scale.

t-test Results for the Linguistic Equivalence of the Scale

The paired samples t-test results related to the linguistic validity of the GTL Scale are presented in Table 2.

Table 2.

Correlation and Paired Samples t-test Results for the Linguistic Validity of the GTL Scale

		Paired Samples Test					
		N	X	r	ss	t	p
Item1	Turkish1	48	3.17	.743	.919	.628	.533
	English1		3.08				
Item2	Turkish2	48	3.27	.854	.714	1.415	.164
	English2		3.13				
Item3	Turkish3	48	3.27	.846	.772	1.310	.197
	English3		3.13				

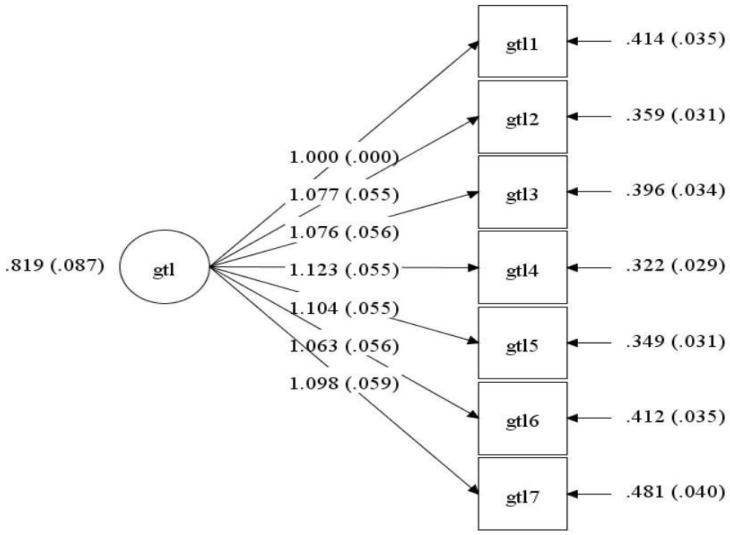
Item4	Turkish4	48	3.38	.815	.875	1.155	.254
	English4		3.23				
Item5	Turkish5	48	3.27	.810	.850	1.188	.241
	English5		3.13				
Item6	Turkish6	48	3.25	.798	.866	1.000	.322
	English6		3.13				
Item7	Turkish7	48	3.10	.858	.798	-.362	.719
	English7		3.15				
General	Turkish	48	3.24	.927	.493	1.504	.139
	English		3.14				

Correlation is significant at the 0.01 level (2-tailed).

The paired samples t-test results compare the scores of each item's Turkish and English versions. The correlation coefficients range from .743 to .927, indicating a moderate to strong relationship between the scores in both languages. For individual items, the mean scores are similar across the two languages. The t-values range from -.362 to 1.504, showing variability in statistical significance levels. However, since none of the p-values are below .05, it is evident that none of these differences are statistically significant at the conventional significance threshold.

CFA Results for the Basic Factor Structure of the Scale

The diagram for the CFA related to the unidimensional structure of the GTL Scale is presented in Figure 1.



Note(s): gtl refers to Global Transformational Leadership

Figure 1. CFA Model for the GTL Scale (Unstandardized)

The CFA results indicate that the measurement model of the scale fits well and confirms the unidimensional structure of the GTL Scale in Turkish culture ($\chi 2 = 45.492$ ($df = 13$; $p < 0.01$), RMSEA = 0.078 (90% CIs = 0.053-0.104), CFI = .985, TLI = .978, and SRMR = 0.017). The CFA results are presented in Table 3.

Table 3.

Validity Values of the GTL Scale (Standardized)

	Item Name	Factor Loading	S.E.	z	p	χ2/df	RMSEA	CFI	TLI	SRMR
GTL	Vision	.815	0.019	42.281	.000					
	Teacher Development	.852	0.016	52.829	.000					
	Support	.840	0.017	48.897	.000	3.249	.078	.985	.978	0.017
	Empowerment	.873	0.014	60.796	.000					
	Innovative Thinking	.861	0.015	55.894	.000					
	Lead by Example	.832	0.018	46.649	.000					
	Charisma	.820	0.019	43.570	.000					

GTL; Global Transformational Leadership

As seen in Table 3, the standardized factor loadings of the CFA model range from .815 to .873, and all path coefficients of the factor loadings are significant ($z > 2.56$; $p < .01$). The mean and standard deviation values for the GTL Scale and the scales used for parallel testing, as well as the parallel test and test-retest correlation values, are presented in Table 4.

Table 4.

Correlation Results for Parallel Test

Parallel test (N = 322)	1	2	3	4	Skewness	Kurtosis
GTL (1)	1				-1.130	1.243
MLQ (2)	.866	1			-1.091	1.327
STL (3)	.895	.822	1		-1.146	1.519
JS (4)	.481	.560	.443	1	-.974	1.192

**p < .01; GTL. Global Transformational Leadership; 2. MLQ; Multiple Leadership Questionnaire; 3. STL; Short Transformational Leadership Scale; 4. JS; Job Satisfaction;

The correlation analysis results indicate the relationship between the GTL Scale and the Multifactor Leadership Questionnaire is (r = .866; p < .01), the relationship with the Short Transformational Leadership Scale is (r = .895; p < .01), and the relationship with the Job Satisfaction Scale is (r = .481; p < .01). The correlation values, which can be considered evidence of convergent validity for the GTL Scale, are above the threshold value (r = .50; p < .01). This indicates that the scale's nomological validity is established. Additionally, as shown in Table 6, the CR/AVE values with CR above .70 and AVE above .50, and the CR (.944) value being higher than the AVE (.709) value, demonstrate that convergent validity is also established.

Measurement Invariance Results

The categories determined by gender, education level, and seniority were evaluated in terms of the four levels of measurement invariance (configural, metric, scalar, and strict). The results are presented in Table 5.

Table 5.

Measurement Invariance Results for the GTL Scale

Model	$\chi 2$ (df)	CFI	TLI	RMSEA	SRMR	$\Delta\chi 2$(df)	p($\chi 2$)	ΔCFI	ΔTLI	ΔRMSEA	ΔSRMR
Gender (N=322)											
Model 1: Full Configural	71.925 (28)	.973	.960	.099	.026	-	-	-	-	-	-
Model 2: Full Metric	72.999 (34)	.976	.971	.084	.032	1.074 (6)	.983	.003	.011	-.015	.006
Model 3: Full Scalar	77.321 (40)	.977	.976	.076	.034	4.322 (6)	.633	.001	.005	-.008	.002
Model 4: Full Strict	82.150 (47)	.979	.981	.068	.044	4.829 (7)	.567	.002	.005	-.008	.010

Education (N=322)											
Model 1: Full Configural	108.462 (47)	.963	.967	.090	.085	-	-	-	-	-	-
Model 2: Full Metric	113.917 (53)	.964	.970	.084	.077	5.455 (6)	.607	.001	.003	-.006	-.008
Model 3: Full Scalar	118.561 (59)	.964	.972	.079	.081	4.644 (6)	.593	.000	.002	-.005	.004
Model 4: Full Strict	123.206 (65)	.964	.973	.075	.084	4.645 (6)	.590	.000	.001	-.004	.003
Tenure (N= 322)											
Model 1: Full Configural	67.063 (28)	.976	.964	.093	.024	-	-	-	-	-	-
Model 2: Full Metric	68.059 (34)	.979	.974	.079	.030	.996 (6)	.986	.003	.010	-.014	.006
Model 3: Full Scalar	70.157 (40)	.982	.981	.068	.032	2.097 (6)	.911	.003	.007	-.011	.002
Model 4: Full Strict	73.507 (47)	.984	.986	.059	.032	3.350 (7)	.914	.002	.005	-.009	.000

The measurement invariance tests by gender produced the following fit indices for the configural model: χ^2 (df) = 71.925 (28), CFI = .973, TLI = .960, RMSEA = .099, and SRMR = .026. For the metric model, the fit indices were χ^2 (df) = 72.999 (34), CFI = .976, TLI = .971, RMSEA = .084, and SRMR = .032, meeting the conditions for metric invariance. The scalar model's fit indices were χ^2 (df) = 77.321 (40), CFI = .977, TLI = .976, RMSEA = .076, and SRMR = .034, indicating scalar invariance. The strict model's fit indices were χ^2 (df) = 82.150 (47), CFI = .979, TLI = .981, RMSEA = .068, and SRMR = .044, confirming strict invariance. Thus, the dataset demonstrates full measurement invariance for gender

across all models, supported by both non-significant chi-square difference tests and changes in CFI, TLI, RMSEA, and SRMR.

For measurement invariance by education level, the fit indices for the configural model were χ^2 (df) = 108.462 (47), CFI = .963, TLI = .967, RMSEA = .090, and SRMR = .085. The metric model showed fit indices of χ^2 (df) = 113.917 (53), CFI = .964, TLI = .970, RMSEA = .084, and SRMR = .077, satisfying metric invariance conditions. The scalar model fit indices were χ^2 (df) = 118.561 (59), CFI = .964, TLI = .972, RMSEA = .079, and SRMR = .081, indicating scalar invariance. The strict model had fit indices of χ^2 (df) = 123.206 (65), CFI = .964, TLI = .973, RMSEA = .075, and SRMR = .084, meeting strict invariance conditions. Therefore, the dataset fulfills measurement invariance requirements for education level across all models, as demonstrated by non-significant chi-square difference tests and changes in CFI, TLI, RMSEA, and SRMR.

Regarding tenure, the configural model's fit indices were χ^2 (df) = 67.063 (28), CFI = .976, TLI = .964, RMSEA = .093, and SRMR = .024. The metric model fit indices were χ^2 (df) = 68.059 (34), CFI = .979, TLI = .974, RMSEA = .079, and SRMR = .030, confirming metric invariance. The scalar model fit indices were χ^2 (df) = 70.157 (40), CFI = .982, TLI = .981, RMSEA = .068, and SRMR = .032, supporting scalar invariance. The strict model's fit indices were χ^2 (df) = 73.507 (47), CFI = .984, TLI = .986, RMSEA = .059, and SRMR = .032, verifying strict invariance. Thus, the dataset shows full measurement invariance for tenure across all models, as evidenced by non-significant chi-square difference tests and changes in CFI, TLI, RMSEA, and SRMR.

Reliability Analyses

The results of the reliability analyses for the GTL Scale are presented in Table 6.

Table 6.

Reliability Analysis Results for the GTL Scale

		Paired Samples Test									
		N	X	r	ss	t	p	α	ω	Ave	Cr
Item1	Test1	111	3.95	.743	.286	-.332	.741				
	Retest1		3.95								
Item2	Test2	111	4.11	.854	.392	.726	.469				
	Retest2		4.08								
Item3	Test3	111	4.04	.846	.569	1.000	.320				
	Retest3		3.98								
Item4	Test4	111	4.05	.815	.269	-.706	.482				
	Retest4		4.06								
Item5	Test5	111	4.05	.810	.416	.228	.820				
	Retest5		4.04								
Item6	Test6	111	4.00	.798	.344	.276	.783				
	Retest6		3.99								
Item7	Test7	111	3.97	.858	.493	.962	.338				
	Retest7		3.93								
General	Test	111	4.02	.927	.139	1.272	.206	.933	.932	.709	.944
	Retest		4.00								

Upon examining the results from the paired samples t-test analysis for the test-retest reliability of the items on the GTL Scale, the following was observed: item one ($p = .741$; $r = .743$; $p < .01$), item two ($p = .469$; $r = .854$; $p < .01$), item three ($p = .320$; $r = .846$; $p < .01$), item four ($p = .482$; $r = .815$; $p < .01$), item five ($p = .820$; $r = .810$; $p < .01$), item six ($p = .783$; $r = .798$; $p < .01$), item seven ($p = .338$; $r = .858$; $p < .01$), and the overall scale ($p = .206$; $r = .927$; $p < .01$). The t-test results indicate that the values ($p > .05$; $r > .50$; $p < .01$) sufficiently demonstrate the test-retest reliability of the GTL Scale. Additional reliability assessments included Cronbach's Alpha ($\alpha = .933$) and McDonald's Omega ($\omega = .932$) for internal consistency, with AVE (.709) and CR (.944) values also

reported. A Cronbach's Alpha and McDonald's Omega above .70, AVE over .50, and CR over .70 confirm the scale's reliability.

Discussion

This study aims to adapt the Global Transformational Leadership Scale (GTL), developed by Carless et al. (2002), to the Turkish cultural context and evaluate its validity and reliability. The original scale was developed in English and validated using data collected from managers and their subordinates in a factory setting. However, in recent years, the GTL has been widely used in educational institutions across the international literature, with studies consistently demonstrating its reliability and validity. In this context, the present study investigates the applicability of the scale in educational institutions by collecting data from teachers and evaluates how effectively a scale developed for one profession can measure school administrators' transformational leadership behaviors as perceived by teachers. The linguistic equivalence, validity, and reliability analyses of the GTL were carried out in three stages. In the first stage, data collected from English teachers were analyzed for correlations and paired samples t-tests to ensure the validity of the English and Turkish forms. In the second stage, CFA was performed to evaluate the construct validity of the original scale's structure within the context of Turkish culture. Convergent validity was established by evaluating nomological validity, CR, and AVE values. Additionally, measurement invariance was examined based on gender, education level, and seniority. In the third stage, the reliability of the scale was evaluated through multiple methods: test-retest stability, internal consistency using Cronbach's alpha and McDonald's omega coefficients, and CR values. This comprehensive approach ensured

that the adapted GTL serves as an effective tool for measuring transformational leadership within the Turkish educational context.

First Stage

In examining the data collected from English teachers at two different time intervals for the linguistic equivalence of the scale, the correlation analysis and paired samples t-test results indicated sufficient evidence for linguistic equivalence. The high correlation coefficients obtained in the correlation analysis (generally 0.70 and above) confirmed that the scale measures similarly in both languages. These high correlation coefficients demonstrate that the English and Turkish versions measure the same construct, thus ensuring linguistic equivalence. Similarly, the paired samples t-test results showed no statistically significant differences between the two languages, supporting the linguistic consistency of the scale. These analyses indicate that the scales in both languages provide consistent and compatible results, confirming that the Turkish version of the scale is equivalent to the original English format. Geisinger (1994) emphasizes the critical role of pilot testing in ensuring linguistic and cultural validity. Van de Vijver and Leung (1997) also highlight the importance of ensuring linguistic equivalence for the validity of scales used in different cultural contexts. These results demonstrate that the original format of the scale has been successfully adapted to Turkish and that the Turkish version can be used valid measurement tool.

Second Stage

The CFA fit indices for the GTL (χ^2/df, RMSEA, CFI, TLI, and SRMR) demonstrated that the single-factor measurement model was well-fitted. Additionally, the z-values for the factor loadings confirmed that all path coefficients were statistically significant. These findings

validated the construct validity of the scale in the Turkish language and cultural setting. The CR and AVE values calculated from the CFA factor loadings supported the scale's convergent validity. For nomological validity, scales representing similar constructs to the GTL, such as MLQ and the Short Transformational Leadership Scale (STL), were applied and confirmed the theoretical expectations by showing empirical relationships with the GTL. The correlation with the "Job Satisfaction Scale" also supported the positive link between transformational leadership and job satisfaction, reinforcing findings in the literature. (Choi et al., 2014; Hanaysha et al., 2012; Tesfaw, 2014; Yıldız & Şimşek, 2016).

High correlation coefficients between the GTL and other leadership scales such as the MLQ and STL indicated strong relationships among theoretically similar constructs, ensuring the nomological validity of the GTL. The positive correlation with the Job Satisfaction Scale demonstrated that transformational leadership significantly impacts teachers' job satisfaction, aligning with existing literature (Munir et al., 2012).

The GTL was evaluated for measurement invariance across gender, education level, and tenure. Achieving measurement invariance is crucial for ensuring that the scale measures the same construct across different groups (Millsap, 2011). The study achieved strict invariance for these demographic variables, which is essential for comparing group factor means and understanding differences in latent factor means (Chen, 2007; Schmitt & Kuljanin, 2008). These results indicate that the GTL is comparable across different demographic groups, providing a reliable basis for analyzing leadership behaviors based on gender, education level, and seniority. This validation ensures that statistical analyses across these groups are valid, supporting

meaningful comparisons and insights into transformational leadership in educational settings.

Third Stage

To evaluate the scale's reliability, internal consistency coefficients were initially examined, focusing on Cronbach's α and McDonald's ω. The coefficients exceeding the threshold value and the close values between the dimensions indicate that the scale is reliable (Kline, 2016). High internal consistency coefficients suggest that the scale items are consistent and coherent, thus providing reliable data. Additionally, the CR values for composite reliability being above the established threshold provide evidence of the scale's composite reliability. This suggests that the scale has a generally reliable structure, with the items consistently reflecting the concepts they are designed to measure. The stability of the scale was assessed using the test-retest method. Significant correlation values and non-significant paired samples t-test results between the scale scores administered to the same participants at three-week intervals indicate that the scale provides consistent results over time and is thus stable. The test-retest method is an important approach for confirming the reliability of the scale. As a result of these analyses, the high internal consistency coefficients and the consistency of the composite reliability and test-retest results demonstrate that the GTL Scale is a reliable and stable measurement tool. This indicates that the scale can accurately and consistently measure leadership behaviors in educational institutions and that the obtained data are reliable.

Limitations

This study has some limitations and could provide guidance for future research. First of all, the study did not test the longitudinal invariance

of the GTL Scale. The longitudinal validity of the scale, which assesses whether teachers' responses to the scale remain consistent over time, was not investigated. This limitation leaves an important gap in the reliability and validity of the scale for long-term use. Future studies are recommended to conduct longitudinal research to evaluate the scale's validity and invariance over time (Millsap & Cham, 2013). Such research will determine whether the scale provides consistent results over time and will test its suitability for broader use. Additionally, the data for this study were collected from a limited geographical area. Conducting the study with a broader sample from different cities and regions could enhance the generalizability of the findings and allow for a more comprehensive examination of transformational leadership practices across educational institutions in Türkiye. Addressing these limitations in future studies will allow for more comprehensive and detailed analyses of the scale's validity and reliability.

Conclusion

The GTL Scale is a reliable and valid tool for measuring school principals' transformational leadership according to teachers' perceptions and has the potential to be used in Türkiye. Its brevity offers practicality and time savings in implementation and evaluation processes (Carless et al., 2000). Additionally, this study significantly contributes to understanding the impact of transformational leadership in educational institutions within the context of educational leadership. Considering that school administrators can potentially enhance teachers' and students' performance by adopting a transformational leadership approach, the use of this scale can help leaders develop effective strategies.

The scale also has high potential for use in further research or practical applications in schools in Türkiye. It can be utilized to explore the impacts of transformational leadership within educational institutions in greater depth. Additionally, this scale can serve as a tool for leaders to evaluate and develop their leadership behaviors. In this context, it can contribute to improving educational environments by enhancing the quality of leadership studies conducted in schools in Türkiye. Moreover, in recent years, this scale has been frequently used in studies within the context of educational institutions (Berkovich & Hassan, 2023; Fernet et al., 2015; Fleming et al., 2023; Schmitz et al., 2023), establishing itself as a proven measurement tool. This supports the scale's international validity and reliability, indicating that it can also be effectively used in educational institutions.

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Appendix

GLOBAL TRANSFORMATIONAL LEADERSHIP SCALE ORIGINAL ENGLISH ITEMS

Represented Leadership Behaviors	Item No	GLOBAL TRANSFORMATIONAL LEADERSHIP SCALE **My Principal;**	Never	Rarely	Sometimes	Often	Always
Vision	**1.**	Communicates a clear and positive vision of the future	1	2	3	4	5
Staff Development	**2.**	Treats staff as individuals, supports, and encourages their development	1	2	3	4	5
Supportive Leadership	**3.**	Gives encouragement and recognition to staff	1	2	3	4	5
Empowerment	**4.**	Fosters trust, involvement, and cooperation among team members	1	2	3	4	5
Innovative Thinking	**5.**	Encourages thinking about problems in new ways and questions assumptions	1	2	3	4	5
Lead by Example	**6.**	Is clear about his/her values and practices what he/she preaches	1	2	3	4	5
Charisma	**7.**	Instills pride and respect in others and inspires me by being highly competent	1	2	3	4	5

Note(s): The scale can be used in academic studies by following proper citation rules. It is not necessary to obtain the author's permission for its use

KÜRESEL DÖNÜŞÜMSEL LİDERLİK ÖLÇEĞİ TÜRKÇE FORMU

Temsil Edilen Liderlik Davranışları	Madde No	KÜRESEL DÖNÜŞÜMSEL LİDERLİK ÖLÇEĞİ Okul Müdürüm;	Hiçbir zaman	Nadiren	Bazen	Çoğunlukla	Her zaman
Vizyon	**1.**	Geleceğe dair açık ve olumlu bir vizyon ortaya koyar	1	2	3	4	5
Personel Gelişimi	**2.**	Öğretmenlere değer verir ve kendilerini geliştirmelerini teşvik eder.	1	2	3	4	5
Destekleyici Liderlik	**3.**	Öğretmenleri cesaretlendirir ve takdir eder.	1	2	3	4	5
Güçlendirme	**4.**	Öğretmenler arasında güven, katılım ve işbirliğini teşvik eder.	1	2	3	4	5
Yenilikçi Düşünme	**5.**	Sorunlar hakkında yeni yollarla düşünmeyi teşvik eder ve varsayımları sorgular.	1	2	3	4	5
Davranışlarıyla Örnek Olma	**6.**	Değerleri konusunda nettir ve başkalarına söylediklerini kendisi uygular	1	2	3	4	5
Karizma	**7.**	Başkalarında gurur ve saygı uyandırır ve yetkinliğiyle bana ilham verir.	1	2	3	4	5

Not: Ölçek, akademik çalışmalarda uygun atıf kurallarına uyularak kullanılabilir. Kullanımı için yazarın izninin alınması gerekli değildir.

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Research in Educational Administration & Leadership

School Management Activities in a Digital Age: An International Comparison Based on ICILS 2018

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Abstract

Principals have an important role to play in the implementation of digitalization in schools. They can be seen as role models for teachers with regard to information and communication technology (ICT) usage. Furthermore, there is nowadays a solid research linking educational leadership and management indirectly to student

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achievement. However, there is a lack of studies on the specific ICT usage of principals and the relationship with students' ICT skills. Against this background, our research aimed to find out whether different clusters of principals in Chile, Denmark, Germany, the Republic of Korea, and the United States can be identified on the basis of their leadership and management activities using ICT and whether there are differences in the distribution of the identified clusters across the countries. A latent class analysis was conducted using the International Computer and Information Literacy Study (ICILS) 2018 school questionnaire data. Across the five countries, three different clusters were identified based on principals' activities using ICT. Proportions of principals' distribution across the clusters varied significantly between the countries. In addition, it was investigated whether the clusters are related to students' computer and information literacy (CIL) using the means of student's scores in the computer based CIL test. No significant relation was found either when the five countries were considered together or individually.

Keywords: *International Computer and Information Literacy Study (ICILS), Latent Class Analysis, secondary school, school management, digitalization, ICT.*

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Introduction

Digitalization is permeating the entire world of work and life worldwide (Kupaysinovna & Abduvakhobovich, 2021**;** Rohatgi et al., 2020; Tiede et al., 2015). Digitalization processes are also being driven forward in education systems through educational reforms, the increasing usage of media and technologies in classrooms, and in the routine tasks of teachers and principals around the world (Nadrljanski et al., 2022; Tiede et al., 2015). Principals are often expected to lead the digital transformation in schools to promote students' learning of 21st century skills which will prepare them for life in the digital world (Håkansson Lindqvist & Pettersson, 2019; Rojas Briñez et al., 2023; Tiede et al., 2015). In order to fulfil these tasks, a good understanding of ICT usage in the school context and the corresponding digital skills are required (Dexter, 2018). As leaders, principals are expected to create conditions that promote ICT usage in schools (Dexter, 2018) and act as role models for teachers with regard to ICT usage in the digitalization of the school system (Nababan et al., 2021).

There is strong evidence linking school leadership to the capacity of teachers and (indirectly) to student achievement (Leithwood et al., 2017; Mulford, 2003; Robinson et al., 2008). However, there is a lack of empirical research on the importance of principals for the deployment and (competent) usage of ICT in schools, especially research that uses large international data sets. An international understanding of how principals use ICT and how they might influence ICT integration in schools seems especially important as the pandemic has highlighted the potential of ICT in schooling but also – in many countries – that the current state of integration leaves room for improvement (Karakose et al., 2021; Pietsch et al., 2022; Ramos-Pla et al., 2021).

In this article, we describe the relevance of school leadership in the context of ICT (integration) in schools and introduce the framework of our study including information on national contexts for ICT-related education and students' performance in our five comparison countries: Chile, Denmark, Germany, the Republic of Korea, and the United States. Then, we will present the sources of data and methods, followed by our findings and a discussion including a reflection on areas of future research.

The relevance of school leadership in a digitalized world

School leadership – an increasingly digital profession under pressure?

The profession of a school leader is characterized as a position of high responsibility (Tan et al., 2022). School leaders are expected to manage – among other things – "enhanced administrative and managerial tasks, handle financial and human resources, manage public relations and build coalitions, engage in quality management and public reporting processes and provide leadership for learning" (Pont et al., 2008, pp. 28–29). Their position has sometimes been likened to that of a middle manager. They are expected to not only be administrators but also drivers of change. They act as points of contact for a variety of stakeholders, among them teachers, students, parents, and local authorities/school boards. As such, acts of communication and information management can be considered two key areas of their job. These domains have been heavily influenced by technological advances over the past two decades and have consequently also changed the day-to-day work of principals (see, e.g., Akhtar, 2022). Nevertheless, there are currently only a few studies on the use of ICT by principals (see, e.g., Tulowitzki et al., 2022). Moreover, existing research is not internationally comparative. An earlier study by Stuart et al. (2009) showed that 64 principals surveyed in New Zealand

frequently use ICT in their work. A study in Canada (Pollock & Hauseman, 2018) based on interviews with 70 school principals revealed that the increasing usage of e-mails was seen as a double-edged sword, providing efficiency but also leading to an increased volume of communication and extension of the workday. Similarly, Akhtar (2022) concludes that while the use of ICT infrastructure improves the effectiveness of Pakistani school management and raises school standards, it can also create additional challenges for principals due to technology failures. Other studies have shown that school principals are considered role models for teachers and other stakeholders with regard to ICT usage (Apsorn et al., 2019; Baydar, 2022). Further research into the usage of ICT by principals therefore appears valuable to identify starting points for the further development of digitalization processes in schools.

We argue that better understanding the ICT usage of principals is relevant on two levels: First, because digital tools and technology are nowadays part of many working contexts including the working context of principals. Second, because the actions of principals, including their use of ICT, can influence the overall technology integration in a school.

The ICT-related influence of principals

Overall, there have been few studies on the leadership role in educational technology reforms, but the school leadership role is seen as a crucial aspect for successful ICT adoption (Arham et al., 2022; Dexter & Richardson, 2020; Rojas Briñez et al., 2023). Principals have long been identified as "change agents" (Fullan, 1993) that can act as gatekeepers or drivers of innovation in schools (Hall & Hord, 2019), depending on their open innovation mindset (Witthöft et al., 2024). These innovations include ICT usage in schools. Here, principals have

been found to influence teachers' knowledge and usage of ICT (Dexter, 2018; Petersen, 2014; Petko & Prasse, 2018). Principals' engagement in ICT has also been shown to influence teachers' self-efficacy (Ismail et al., 2021), beliefs (Schmitz et al., 2023), and attitudes towards ICT (Petko & Prasse, 2018). The different (ICT-related) leadership approaches that principals can choose also have an impact on their staff (Navaridas-Nalda et al., 2020). In particular, there is an indication that a transformational leadership is linked to (comparatively faster) implementation of ICT by teachers (Ruloff & Petko, 2021; Vermeulen et al., 2015). The concept of transformational leadership originated with Burns (1978) and was further developed by Bass (1985). Next to functions in the area of management and administration, transformational principals lay emphasis on inspiring and motivating teachers, being a role model, and developing a meaningful vision for the future of the school (also see, e.g., Daniëls et al., 2019; Leithwood & Sun, 2012). By using transformational leadership practices, such as setting a good example and thus acting as a role model, principals' own usage of ICT can influence how teachers engage with, perceive and use ICT (see, e.g., Schmitz et al., 2023; Tulowitzky et al., 2023). This is also emphasized in Hope and Stakenas (1999) approach about principals' three primary roles for being a technology leader for better integration of ICT in schools (also see, Mwambo, 2019).

Principals need to interact with various stakeholders in their day-to-day work and build strong relationships in order to successfully lead technological innovation and change in schools (Dexter & Richardson, 2020). The choice of communication methods can have an impact on the quality of these interactions. For example, Mazza (2015) highlighted the potential benefits of US American principals utilizing social media to enhance communication and relationships between

schools and parents, complementing traditional forms of two-way/multi-way communication in the modern era.

Furthermore, there is nowadays a wealth of evidence linking educational leadership indirectly to student outcomes (see, for example ten Bruggencate et al., 2012; Grissom et al., 2021). Principals can influence teacher capacity, motivation and working conditions which then in turn affect classroom instruction and student performance (Leithwood & Louis, 2012; Leithwood et al., 2017; Mulford, 2003). For example, a study in Texas with 1779 primary school teachers and data on student grades has shown that school leadership has a positive indirect impact on student performance by creating a rational climate in the school (Leithwood et al., 2020). The study by Tan (2018) also demonstrated an indirect influence of school leadership on the students' mathematic performance in various countries. With regard to a direct influence, however, the results are different: In various studies, there is little to no direct influence of individual practices of transformational leadership on student performance (Allen et al., 2015; Sun & Leithwood, 2012). In addition, there is currently a lack of studies that deal with the influence of school leadership practices in relation to digital media on student ICT skills.

Theoretical and empirical framework

Theoretical framework model

Our research uses secondary analyses to examine school leadership in the context of digitalization. To do this, we draw on data from the *International Computer and Information Literacy Study* (IEA-ICILS 2018). ICILS 2018 is the most recent comparative study providing data about ICT in schools with a representative database. For the second time since 2013, the Computer And Information Literacy (CIL) of Grade 8

students was examined in an international comparison using computer-based test environments. In addition, information on school improvement processes as well as teaching and learning with ICT was collected using questionnaires (Mikheeva & Meyer, 2020). ICILS 2018 as an international comparative large-scale study is based on a theoretical framework model (Fraillon et al., 2020). In line with previous models, it takes into account the multilevel structure when it comes to student learning (e.g. Scheerens, 1990; Scheerens & Bosker, 1997). The model differentiates between antecedents and processes, following the assumptions that antecedents influence processes and that processes are closely connected to the outcome, i.e. the level of CIL competence. School leadership is posited as one of the relevant process factors on the level of the school and the classroom (see Figure 1).

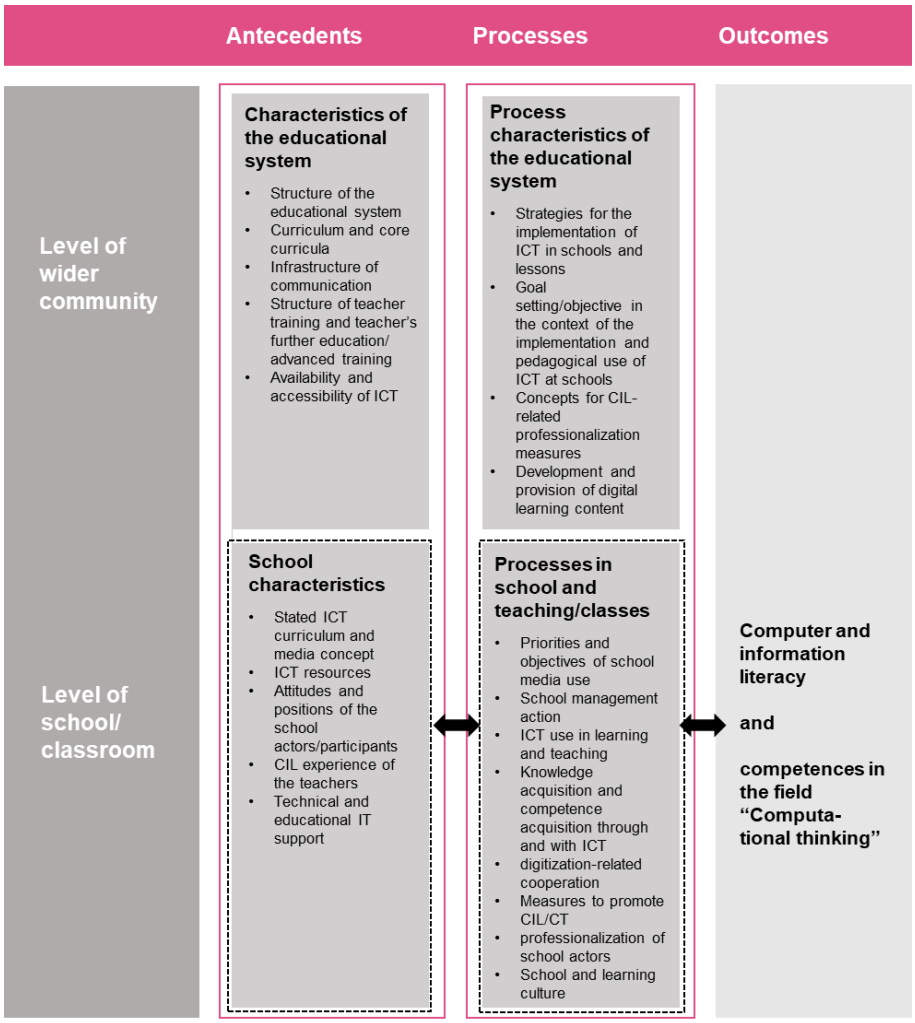

Figure 1. Theoretical Framework of the International Computer and Information Literacy Study (Eickelmann, 2019, shortened and translated by the authors; based on Fraillon et al., 2020)

We therefore take a closer look at this topic in this paper. In order to be able to better interpret the following international comparative

analyses, information on the national context of the countries considered is summarized below.

National contexts for CIL education

Since, according to the framework, the (process) characteristics of the educational systems have an influence on the school and classroom level, some country-specific background information on the context for CIL education until the ICILS survey in 2018 is provided as follows. The following five countries are considered in this article: Chile, Denmark, Germany, the Republic of Korea, and the United States. These countries were chosen in order to provide a diverse representation of school management activities across four different continents, allowing for a comprehensive global perspective on the issue. In addition, Denmark was used as a comparison country because it is the ICILS winning country where students have the best computer and information skills (Fraillon et al., 2020). Furthermore, the inclusion of both Denmark and Germany allows for an intra-European comparison to further utilize the rich potential of the international data set. As shown in the following, the selected countries cover a wide range of ICT-related educational practices and policies and differ in terms of their level of digitalization and student achievement. This diverse selection of countries enhances the generalizability and applicability of the study findings to a broader context.

First of all, it should be noted that, according to the findings of Fraillon et al. (2020) from the ICILS national contexts survey, the five countries differ in terms of the curricula for ICT usage in the classroom, the timing, and responsibilities for implementing these. While in Chile, Denmark and Korea, guidelines for ICT curricula were defined and implemented at state level, in the USA additional guidelines were

implemented at federal level by 2018, and in Germany only at federal level (Fraillon et al., 2020).

Furthermore, there are differences in the current state of implementation, particularly concerning the availability of technology-related resources for teaching and learning: Results of ICILS 2018 show that while Danish schools are comparatively best equipped, the availability of resources in Chile and Korea varies greatly depending on the resource. In comparison with all ICILS countries, German schools lag behind in terms of technology resources (Fraillon et al., 2020). Denmark also leads in software-related resources, with Korea also performing well in ICILS country comparison. Germany faces shortages in various software resources, while Chile's schools lag overall in software provision. The availability of technology facilities for teaching and student learning is also comparatively good in Denmark, while it varies in Germany depending on the facility and is notably lacking in Chile and Korea in ICILS country comparison. Chile places a higher priority on facilitating ICT usage in education compared to other countries, while Denmark, Germany, and Korea prioritize it less. The United States does not meet the high ICLS sample participation requirements for a comparison across all aspects (Fraillon et al., 2020). It is also difficult to draw general conclusions about the US education system due to its highly decentralized nature, with the national Department of Education playing a minor role compared to the state and local school council level (Vachkova et al., 2021). However, according to ICILS 2018, the United States has a very good availability of technology-related and software-related resources and technology facilities for teaching and student learning. In addition, the United States places a high priority

on many ways of facilitating ICT use in teaching and learning (Fraillon et al., 2020).

Students CIL in international comparison

Within the ICILS framework, CIL is defined as the ability "to use computers to investigate, create, and communicate in order to participate effectively" in various areas of life (Fraillon et al., 2020, p. v). Two overarching strands of CIL are distinguished: *Collecting and managing information* which involves "a practical understanding of how to use a computer and the capability to find and critically evaluate online information" and *producing and exchanging information* which includes "communication, safe use of information, secure use of information and transforming and creating digital information" (Rohatgi et al., 2020, p. 145).

Based on the individual test results of the students, five levels of CIL with increasing difficulty are distinguished. With scores between 518 and 553 (see Table 1), students from Denmark, Germany, the Republic of Korea and the United States on average are on Level 2 and thus manage to "use computers, under direct instruction, to complete basic and explicit information gathering and management tasks" (Fraillon et al., 2020, p. 51) while students of Chile are on average in Level 1 and thus "demonstrate a functional working knowledge of computers as tools" (Fraillon et al., 2020, p. 51). The highest average scores can be found in Denmark. In the Republic of Korea, the highest proportion of students (9 %) reached the highest CIL level. These ICILS findings are also reflected in further comparative studies, with Denmark (see, e.g., Rohatgi et al., 2020; Storte et al., 2019) and the Republic of Korea (see, e.g., Fiş Erümit & Keles, 2021) being in particular regarded as global role models in terms of digital integration and student performance.

Table 1.
Student performance in CIL in the five countries: results from ICILS 2018

	Average CIL scores
Chile	476
Denmark	553
Germany	518
Republic of Korea	542
United States[a]	519
ICLS Total	**496**

[a] does not meet the high IEA sample participation requirements

Research questions

Due to the lack of international comparative studies on the use of ICT by principals, this topic was examined in more detail in the present study. Therefore, the following three research questions were addressed:

1. Is it possible to empirically identify distinct clusters of principals across Chile, Denmark, Germany, the Republic of Korea, and the United States based on their leadership and management activities using ICT?
2. If so, are there any differences in the distribution of the identified clusters across these five countries?
3. Are the identified clusters related to students' competence in CIL?

The next section explains how such distinct clusters are identified.

Data sources, methods, statistical techniques

To answer the research questions, data from the second cycle of the *International Computer and Information Literacy Study* (ICILS 2018) was used. The main aim of the study was to investigate to which extent students in grade 8 (or equivalent) have computer and information-related skills. To this purpose, the students completed various computer-based tests. In addition, the framework conditions for skills acquisition were recorded using various additional questionnaires for different stakeholders (Fraillon et al., 2020). This study is based on the information from the school principal questionnaire and the students' test results (see, e.g., Mikheeva & Meyer, 2020). Data from the following countries is taken into account: Chile, Denmark, Germany, the Republic of Korea and the USA. The respondents completed the tests and questionnaires in their respective national languages. Table 2 shows the sample sizes of the principals who took part in the 2018 ICILS survey for the five countries.

Table 2.
Sample sizes in the five countries taken into account

	Sample size in the analysis sample	Percentage
Chile	174	19.3
Denmark	140	15.5
Germany	194	21.5
Republic of Korea	150	16.6
United States	245	27.1
Overall	**903**	**100.0**

In order to answer the research question 1, a Latent Class Analysis (LCA) was conducted (Geiser, 2013; Lazarsfeld & Henry, 1968; McCutcheon, 1987) using M*plus* 7.0 (Muthén & Muthén, 2012). Using

methodological approaches to cluster data to identify different classes appears particularly fruitful and has been conducted recently in different contexts using large scale assessment data on the student (e.g. Bundsgaard & Gerick, 2017; Ünlü & Schurig, 2016; Wendt & Kasper, 2016), the teacher (e.g., Eickelmann & Vennemann, 2017), and the school level (Gerick, 2018). In order to identify the statistically optimal amount of clusters, different statistical models are analyzed separately and subsequently compared. To compare the different models, the information criteria *Akaike Information Criterion* (AIC; Akaike, 1974) and the *Bayesian Information Crite*rion (BIC; Schwarz, 1978) were used. Lower AIC and BIC values for a model indicate a better model fit (Rost, 2004). In cases of small differences between models with different amounts of clusters, the selection of the model with fewer clusters is recommended. To assess the reliability of the classification, the average latent class probabilities for most likely latent class membership are considered (Geiser, 2013).

Since the number of schools varies in the five countries, and to make sure that each country contributes the same proportion of data into the LCAs, the school weights in all schools across the five countries were rescaled (Gonzalez, 2012) to a sample size of 150 from each country. This led to an equal weighting of the countries irrespective of the individual sample size within the country. Cases with missing values in any of the relevant variables were omitted from the analyses.

All 14 items of question 3 in the school questionnaire of ICILS 2018 were used in the analyses to answer the research question (Mikheeva & Meyer, 2020), covering facets like using ICT for information search, organization of databases, communication with various stakeholder

and management of various aspects of schools. The following list shows the items used in English:

How often do you use ICT for the following activities?
a) Search for information on the Internet or a network maintained by education authorities for its schools
b) Provide information about an educational issue through a website
c) Look up records in a database (e.g. in a student information system)
d) Maintain, organize and analyze data (e.g. with a spreadsheet or database)
e) Prepare presentations
f) Communicate with teachers in your school
g) Communicate with education authorities
h) Communicate with principals and senior staff in other schools
i) Communicate with parents
j) Work with a learning management system (e.g. [Moodle])
k) Use social media to communicate with the wider community about school-related activities
l) Management of staff (e.g. scheduling, professional development)
m) Preparing the curriculum
n) School financial management
Response categories: Every day, At least once a week but not every day, At least once a month but not every week, Less than once a month, Never

For the second research question, descriptive statistics were calculated in order to illustrate the proportions of principals who can be categorized into the identified clusters for each country. For the third research question, the student achievement in the computer based CIL test were taken into account. For the analyses, mean difference analyses (*t*-Tests) were conducted for all countries together and for each country separately using the means of students score in the five tasks of the test module (plausible values) and the respective

weighting variables. The analyses for research questions 2 and 3 were conducted with the IEA IDB Analyzer 4.0.39 (Mirazchiyski, 2015).

Results

To answer the *first research question*, we analyzed whether it is possible to identify different clusters across the five countries based on the leadership and management activities using ICT. As table 3 shows, the three-cluster model describes the data particularly well, because the AIC and the (sample size adjusted) BIC are not considerably smaller for the four-cluster model than for the three-cluster model, thus underlining the decision in favor of the less complex model. Furthermore, the three-cluster model has a higher quality of classification than the four-cluster model with average latent class probabilities of ≥ .89. Figure 2 shows the distribution of the three clusters. It becomes obvious that besides the level differences, different priorities can be identified which characterize the three clusters.

Table 3.

Results of latent class analyses

Number of cluster	AIC	BIC	Sample size adjusted BIC	Average Latent Class Probabilities
2	12795.60	12934.96	12842.86	≥ .93
3	*12440.96*	*12652.41*	*12512.67*	*≥ .89*
4	12273.05	12556.59	12369.21	≥ .87
5	12209.69	12565.32	12330.30	≥ .80

Note: The cluster solution highlighted in italics is pursued further in this article.

Cluster 1: Comprehensive digital school management (34 % of all principals in the five countries): This cluster is marked by a high

probability of the principals making use of ICT at least once a week across all domains: For all activities, the probabilities are above 60 percent.

Cluster 2: Partial digital school management (55 % of all principals in the five countries): This cluster can be characterized by using ICT at least once a week only for management activities in a narrower sense. For four leadership and management activities that could be viewed as being more oriented towards the pedagogical part of school management, the probability that school principals will conduct them using ICT at least once a week is less than 50 percent: Prepare presentations, preparing the curriculum, use social media to communicate with the wider community and work with a learning management system.

Cluster 3: Rudimentary digital school management (12 % of all principals in the five countries): This cluster can be characterized by usage patterns that are focused on very few areas: Only for the activities 'communicate with teachers in the school', 'search for information on the internet', and 'communicate with education authorities', the probability that school principals will conduct them using ICT at least once a week is more than 50 percent.

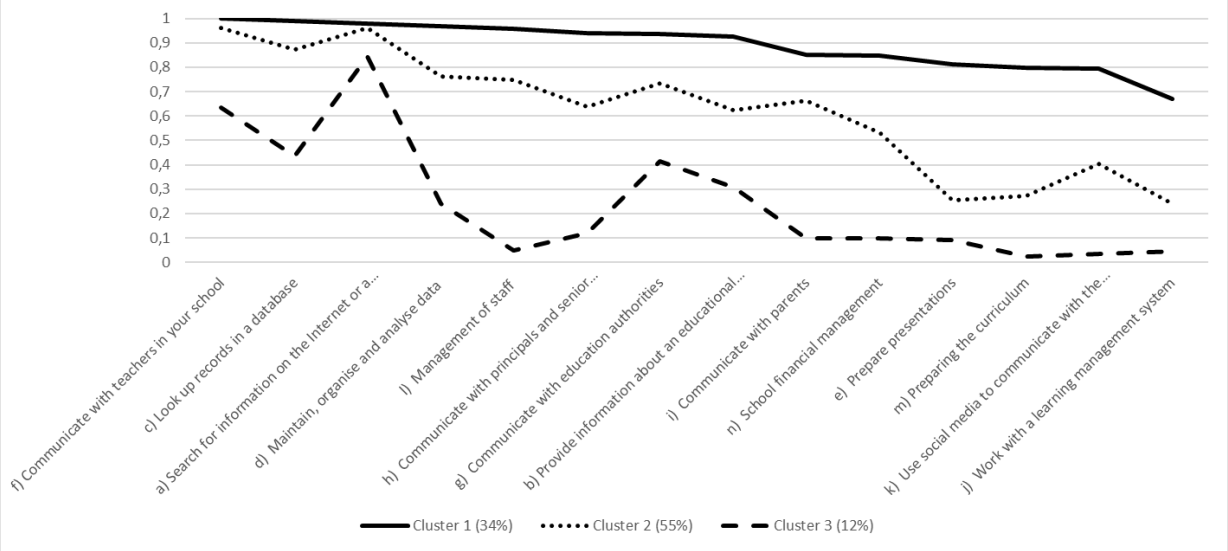

Figure 2. Distribution of the identified clusters

Table 4 shows the results for *research question 2*, indicating the proportions of principals who can be categorized into the three clusters. The extent to which the proportion per country differs significantly from the mean value is also calculated.

Table 4.

Distribution of principals across the clusters

	Cluster 1			Cluster 2			Cluster 3		
	%	SE		%	SE		%	SE	
Chile	43.67	5.86	●	41.83	5.81	▼	14.51	3.59	●
Denmark	29.73	5.07	●	68.46	5.00	▲	1.81	1.06	▼
Germany	22.31	5.20	▼	62.85	6.46	●	14.85	5.88	●
Republic of Korea	32.14	4.22	●	49.59	5.24	●	18.27	3.98	●
United States	40.46	4.96	●	50.49	5.60	●	9.04	4.43	●
Average	**33.66**	**2.28**		**54.64**	**2.52**		**11.70**	**1.83**	

Notes: SE – Standard Error; Significances in the percentages are calculated in comparison to the average frequency of each cluster.

● no significant difference to overall average; ▼ significantly lower percentage than the overall average; ▲ significantly higher percentage than the overall average.

The results for cluster 1 initially show that the proportion of school principals in Germany who can be assigned to this cluster is significantly lower than the average across the five countries. Only slightly more than one-fifth (22 %) of school administrators in Germany use ICT for leadership and management activities, which are characterized by 'Comprehensive digital school management'. In Chile, on the contrary, 44 % and thus the majority of the school principals can be assigned to this cluster, as well as a high proportion of school principals from the United States (40 %).

For cluster 2, it is clear that the proportion of school principals in Denmark who can be assigned to this cluster is significantly higher than the mean value (55 %). Almost 70 percent of school administrators in Denmark perform leadership and management activities with ICT, which can be described as 'Partial digital school management'. In contrast, the proportion of school principals who can be assigned to this cluster in Chile is significantly below the average (42 %). In all other four countries, the largest proportion of school principals can be assigned to this cluster.

Looking at cluster 3, it is clear that once again Denmark shows a significant deviation from the average value. In this cluster, which is characterized by a rather low, infrequent use of ICT, only a very small proportion (approx. 2 %) of school principals in Denmark can be classified. On average, the proportion in this cluster is 11 percent across all five participating countries.

In regard to the *third research question*, the results show that when considering the five countries together there is no significant relation between the identified clusters and the average level of students' competence in CIL opting for a 95 percent confidence level. Similarly, there are no significant differences when the five countries are considered separately.

Discussion and Conclusions

The results show that it is empirically possible to identify clusters of school principals' digital leadership and management activities (research question 1). Concerning the first cluster (*comprehensive*), there is a slightly lower probability of using ICT for presentations, preparing curricula, and working with learning management systems, suggesting that either these activities connected to pedagogical management are less frequent in the daily practice of principals or that ICT is less frequently used for these activities. In cluster 3 (*rudimentary*), the activity 'search for information in the internet' should be considered more specifically. One could argue that this is an activity that is part of everybody's everyday routine, and it might not be connected to school management. Then this group is only using ICT for communication with principal collaborators (teachers and authorities). Also it should be taken into consideration that there are some principals in this cluster who have started using ICT for basic administrative tasks connected to working with and communicating data and information.

Furthermore, we see variation in regard to the distribution of principals across clusters between countries (research question 2). For Germany, the result that the proportion of principals in cluster 1 '*Comprehensive* digital school management' is significantly below

average is not surprising, as ICT was not considered a priority at the time of data collection. While there have been numerous developments since then (see, e.g., German Federal Ministry of Education and Research, 2023), it's doubtful that this situation has changed significantly as principals in Germany are facing many challenges which might lead to matters of ICT being relegated to the fringe. There is a need for school principals to understand their new role to set directions in schools when it comes to school leadership (Dexter, 2018). Almost no Danish schools are in the cluster of limited use (*rudimentary* digital school management), and the results thereby confirm that Danish schools are highly digitized as it has been intended and promoted in a number of Government initiatives during the last three decades (Bundsgaard et al., 2019; Caeli & Bundsgaard, 2020). However, the results also show that most Danish principals are not among the cluster 1-respondents of *comprehensive* digital school management. Thus, most Danish principals do not use ICT intensely for a variety of pedagogical activities. This can be considered somewhat surprising in view of the fact that Danish principals historically have prioritized the pedagogical aspects of school management and are encouraged to do so by the educational authorities (Danmarks Evalueringsinstitut, 2006, 2017). In Chile, on the other hand, where schools are equipped with different levels of technology from region to region and are less well equipped with software compared to other countries (Fraillon et al., 2020), principals use ICT relatively regularly for various work tasks, which is reflected in a particularly high percentage in the cluster of *comprehensive* digital school management. This shows that the integration of ICT into the day-to-day work of school principals depends not only on the educational policy framework and the availability of resources, but

also on further country and school-specific differences that still require further research.

The analyses for research question 3 showed that the patterns of ICT use by principals do not have a significant impact on pupils' CIL in any of the countries studied. The comparison within Europe based on ICILS 2018 results (Fraillon et al., 2020) indicates that pupils in Denmark achieve significantly better CIL results than pupils in Germany. However, as this study shows, this cannot be explained by the use of ICT by principals, which also differs between the two countries. The results presented could either indicate that there simply is no significant relation between the ICT use pattern of principals and students' competence in CIL or that a possible link is mediated by various factors that were not taken into account in the context of this study. This would echo insights regarding the importance of context when trying to assess the impact of educational leadership. The ICILS Framework takes many additional factors into account. Future research around educational leadership research could therefore look into possible links between the activities of principals making use of ICT and those factors. Future research should also look more deeply into possible reasons why certain countries have school principals with such high usage patterns. Also looking into possible barriers to using ICT for principals appears to be fruitful.

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Research in Educational Administration & Leadership

Construction and Validation of a Secure-base Leadership Model in Educational Organizations: A Mixed-methods Exploratory Study

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Abstract

There is no doubt about the importance of leadership and attachment styles on individual behavior and organizational outcomes. However, researchers have neglected to apply and integrate attachment concepts in management and organizational studies for years. One of the basic concepts in attachment theory is the secure base. In 2010, Coombe considered the application of this concept in leadership, which resulted in representing the theory of secure base leadership. The present study aimed at constructing and validating a secure base leadership model. The research method is a mixed exploratory method composed of qualitative and quantitative measures including thematic analysis and survey, respectively. The participants of the qualitative section were 14 faculty members, specialists, and experts in the field of

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educational management and psychology selected using the purposive sampling method and snowball technique. Besides, the participants of the quantitative part included 441 administrative staff and teachers in Tehran were by cluster sampling. Open, axial, and selective coding was used to analyze interview data in the former part, while in the latter, structural equations were used. The results of the qualitative analysis indicated that secure base leadership includes three main aspects, namely security (accepting people (acceptance), support, providing security, mutual trust, independence, fairness, staying calm (controlling and adjusting emotions)), exploration (risk-taking, increasing individual capacities, being responsive and sensible, intellectual stimulation), and deep intellectual bond (positive attitude, high emotional capacity, transparency in relationships, compatibility, being a good listener). Also, the quantitative part of the research results showed validity and reliability as well as a good fit of the proposed model.

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Introduction

There is a growing belief that says the organizational structure of older institutions simply cannot adapt to the learning of the required skills in the 21st century. Therefore, new methods are based on mutual cooperation, professional learning communities and networking and group efforts. Nevertheless, to establish this thinking, the proper use

of effective leadership styles seems to be necessary. From this point of view, the importance of management and leadership in educational organizations and their role in the success and improvement of organizations becomes more obvious day by day. As educational researchers and policy makers believe, leadership is the main pillar of organizational improvement. With this approach, various researchers recognize new leadership styles as an answer to face the diverse challenges of the varying world. They consider leadership as a strong pillar and guide to overcome these challenges and to obtain the desired educational system. In other words, leadership can act as an effective strategy in improving and developing the educational system (Seegers, 2016). In order to overcome such challenges, managers need to apply new leadership styles that incorporate a variety of flexible skills and practices to meet the challenges of the new demands. By taking advantage of these leadership styles, managers can expand their influence and effectiveness in their organizations (Göksoy, 2015; Harris, and Jones, 2021). Accordingly, Secure Base Leadership is one of the emerging theories in the field of leadership style. This approach focuses on the principle that the leader should try to maintain the security of the organization and prevent the occurrence of risks, manage risks and create security in the organization. In other words, secure base leadership is of great importance in order to maintain security and reduce risks in the organization.

Secure base leadership is a new concept which was first introduced by Coombe (2010). The way a leader builds trust and influence over others by providing a sense of security, protection, and care, and by creating an inspiring source of daring, exploration, risk-taking and seeking challenges in employees, is defined as the secure base leadership (Coombe, 2010). According to Coombe (2010), the sense of security,

protection and care in employees mean three different characteristics that are discussed in relation to the security of employees and the organization. The feeling of security means having confidence and peace regarding personal and organizational security. This concept does not include an unpleasant feeling such as worry and fear, but rather means having confidence and trust that personal and organizational security is maintained now and in the future. The feeling of protection means the measures taken to maintain security and prevent possible dangers from occurring. These measures include the use of various technologies such as CCTV cameras and security systems, the use of security policies and procedures, and the training of employees in the field of security. The sense of care means observing and implementing the measures that are taken to maintain the safety and health of employees. These measures include things such as providing protective equipment and tools for employees, providing health and medical services, and providing advice and guidance on maintaining the health and safety of employees. On the other hand, in the definition provided by Coombe (2010), the sense of challenge acceptance in employees means having the desire and willing to face challenges and try to improve and develop themselves and the organization. This sense is known as one of the effective factors in creating growth and progress in organizations and can be considered as a competitive advantage for the organization in the labor market. To create a sense of challenge acceptance in employees, leaders can encourage employees to be innovative and creative in solving organizational problems by creating a suitable organizational culture and presenting specific and challenging goals, as well as providing necessary facilities, promoting a sense of challenge acceptance in employees.

Secure base leadership plays the role of a secure base in the organization, which has features such as creating security through valuing, acceptability and appreciation, providing exploration through emphasizing growth, developing potential and addressing tasks and situations through a positive method. As a positive theory in leadership, since concepts and values such as valuing, accepting and appreciating employees in a timely manner in order to create a safe working environment, respecting the inherent value of humans and emphasizing their growth and development in a positive way are noted and emphasized in secure base leadership, it seems that such behaviors probably lead to a common result, which is an increase in the feeling of respect, trust and mutual appreciation towards organizational leaders and other employees. In such a way that such a mentality becomes an important motivating factor during which the employees will try to show their mutual trust and respect to the secure-based leader by accepting and following the leader and doing better work activities, and in such an atmosphere, a feeling of confidence exists that the work team will not embarrass or reject any person for commenting (Kessel, Kratzer and Schultz, 2012; Trujillo, Møller, Jensen, Kissell and Larsen, 2021). Research shows that the difference between a successful and a failed leader is the presence or absence of a secure base in their personal lives. Having a secure base in life reduces anxiety and fear, increases satisfaction (Bae, 2016; Paetzold, Rholes, and Andrus, 2017; Scannell and Gifford, 2017; Simpson and Rholes, 2017), and increases trust and risk-taking in the organization and elevates employee happiness (Khalijian, Shams, Pardakhtchi, and Mirkamali, 2023). In organizations, a secure base can include bosses, co-workers, subordinates, the organization itself, work, or even the product (Kessel, Kratzer and Schultz, 2012; Liu, Chen and Lee, 2021).

Issues such as lack of meritocracy, the prevailing atmosphere of silence, little attention to improving employee welfare, little flexibility in work, lack of attention to employees' talents and not utilizing these talents in practice, lack of acceptance and support of employees by their managers, lack of attention to the needs of employees, and consequently, low motivation of staff in improving their performance and quality of their work in the current educational environments has led education staff, especially teachers among other jobs, to be continuously exposed to job pressures and stresses because of the demands of their jobs (Bernard, 2016; Malinen and Savolainen, 2016; Shirbagi and Naderi, 2023). This causes educational organizations to face challenges such as reduced satisfaction (Arifin, 2015; Roch and Sai, 2017), reduced commitment (Raman, Cheah, Don, Daun, and Khalid, 2015; Okçu and Uçar, 2016), reduced quality of life (Yisunthet and Chen, 2017) and reduced employee performance and organizational health and effectiveness (Yozgat, Yurtkoru, and Bilginoglu, 2013). One of the important and effective factors in occurrences of these challenges is the behavior and leadership style of managers and educational officials (Geda; 2015; Moorosi and Bantwini, 2016; Urick, 2016; Karahroodi, Shams, ShamiZanjani, and Abolghasemi, 2020).

As a secure base, the leader has great effects on employees' performance and organizational results. This leadership style is presented based on a research study (Coombe, 2010) with regard to the organizational atmosphere in the organizations of western societies, which is not consistent with that of Eastern ones, especially in Iran. One of these differences is in the role of the family as the first and most important secure base during a person's life. In eastern societies, a person experiences the role of family and its support from childhood to adulthood and always understands the family as a secure base, but

in western societies, the definition of family and its base is different. In addition to the family, a noticeable difference can be felt between the culture and the organizational atmosphere in the organizations of Western societies, which are mostly decentralized and constantly emphasize the happiness of the organization's environment and the collaborative activities of the employees and the centralized and individualistic organizational culture and atmosphere of Eastern societies such as Iran. In addition, the intra-organizational problems of Iran's education and training organization in areas such as the methods of employment, attraction, training and retention of the working manpower, the inefficiency of the selection system of managers, especially at the level of education and training departments (both headquarters, provincial and regional), lack of dynamism in the management of schools, especially in the field of attracting the participation of parents and teachers for better school management, the inefficiency of the control system, monitoring and scientific evaluation of programs, plans, methods and practices, lack of motivation for teachers to actively train in the classrooms, the lack of love and humane and intimate relationships between school management staff, teachers and students and as a result, the lack of vitality in the school, cause the necessity of this research which aims to identify and explain the dimensions of secure base leadership in the education organization, prove it as much as possible to the policy makers and senior managers of the education system. Therefore, considering such a research gap in the field of secure based leadership in Iran, the need to identify the dimensions of this leadership style based on the characteristics of the Iranian society in the field of education, which itself is an important base in the education and training of active members of the society is strongly felt. Therefore, this study seeks to answer these questions, what is the model of secure

based leadership style in the education organization? And does this model of leadership style have proper validity and reliability?

The rest of the article is organized as follows. The next section examines the existing theoretical foundations related to the concept of the secure base and secure base leadership, as well as the key concepts of this leadership style. In the research literature section, some domestic and foreign studies conducted in the field of secure base leadership style are discussed. In the methodology section, the method of conducting the study in two phases, qualitative and quantitative, will be presented. In the following, explanations will be provided regarding the data collection tool as well as the statistical population of the qualitative and quantitative parts of the research. In the findings section, the obtained results would be analyzed in two separate qualitative and quantitative parts. Finally, the current study ends in the conclusion section by presenting discussions on the qualitative and quantitative findings of the research, as well as providing practical suggestions about secure base leadership in Iran's education and training organization.

Theoretical Basics

Secure Base

The term secure base has its roots in John Bowlby and Marie Ainsworth's research on attachment theory. The main concept of attachment theory is that all human beings have a natural desire to be close to a person who gives them a sense of care and reaching comfort in this way. At the end of their research, Bowlby concluded that the bond between the child and the mother and the relationship between the two gives babies a sense of strength and improvability (Bowlby, 2005).

J. W. Anderson, continuing Bowlby's research, concluded that children are constantly looking for a base, and in the meantime, most of them look for their mothers as a secure base. Toddlers just started to walk were playing in a certain place, but most of the time they went to their mother and calmed down. It is very interesting that different children showed different behaviors. Some of them were very close to their mothers and were afraid to take risks, but some other children were playing in distant areas and did not pay much attention to their mothers. However, what was common among all these children was that whenever they were depressed or scared, they would go to their mothers and their mothers would also show two types of behavior: on one hand, their accepting and pleasant behaviors indicated providing security for children, and on the other hand, mothers gave their children the opportunity to take risks, and this enabled children to discover their own solutions and maintain their independence. Ainsworth proved that attachment reduces anxiety. What she calls the secure base effect enables the child to let go out of attachments and explore the environment, and the child can explore the environment with encouragement and confidence (Hetland et al., 2008).

Although humans are considered the strongest secure bases, this concept applies to any form that stops the primary system of danger warnings in the mind and provides energy and creativity for the challenge. From this point of view, places, goals and objects can be considered as a secure base like the country, religion or God, an event, group or even a pet. Any creature that can strengthen a person's sense of inner security and inspire creativity through making a relationship can be considered a secure base. The stronger the secure base, the more resistant to difficult and unfavorable conditions. Since the need for a secure base is rooted in the human brain, it can be said that the concept

of a secure base is common in all cultures and between generations. On the other hand, since the concept of secure base is multidimensional, its contradiction increases layer by layer. A secure base supports people and encourages them to take risks. In addition, the secure base both waits and interferes in the affairs. People need both other people and goals as a secure base. A leader can be a secure base for other people only if he has several secure bases. The figure below shows the functioning of the secure base (Chen, 2015).

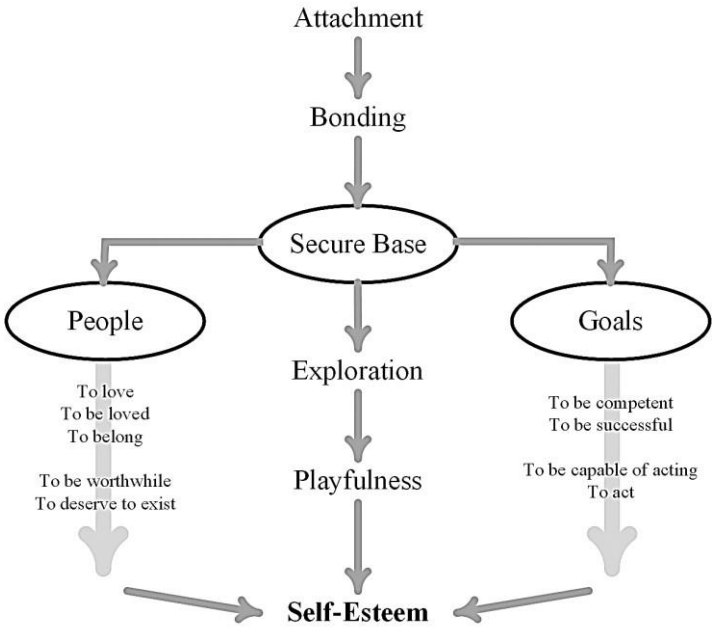

Figure 1. The function of secure base

Secure Leadership

Great leaders around the world, by building trust, creating change and emphasizing that group participation can provide the conditions for progress and innovation, constantly try to bring the extraordinary capabilities of themselves, employees and organizations to the fore.

Such people easily achieve stable performance because they use their secure base and are considered a secure base for other people. Above performance means challenging self and others in order to achieve something beyond normal expectations, this is where you have to move away from your safe zone and do the impossible (Pepping et al., 2017).

In fact, a person moves towards the ultimate risk and possibility. Although secure base leadership is a very deep and complex concept, it does not take long to learn it. In fact, the keys to learning and developing secure base leadership lie within the individual himself, his life story, experiences and the method of institutionalizing success and failure in his life. Since the necessity of a secure base leader is to be a secure base and have its characteristics and features, therefore, before defining this type of leadership, the definition of a secure base is discussed (Antunes, 2017).

Secure base leadership plays the role of a secure base in the organization, which has features such as creating security through valuing, acceptability and appreciation, providing exploration by emphasizing growth, developing potential and addressing tasks and situations through a positive method. Among these factors, Coombe (2010) lists two basic elements as the foundation of secure base leadership and its main elements, which include security (through valuing, acceptability and appreciation), and exploration (through emphasizing on growth, development and potential). The factors security and exploration in secure base leadership have been emphasized considerably from a theoretical point of view, and they are consistent with the concepts of Ainsworth and Bowlby of security and exploration factors. Therefore, secure base leadership always provides the possibility of effective activity and cooperation in the

organization's environment through human relations combined with trust. As a result, it facilitates the role of leadership by the manager and ensures the effective and continuous activity of the organization and the efficient performance of the employees. Secure base leadership is important in educational organizations whose main capital is human power (Coombe, 2010).

Key Concepts in Secure Leadership

Security/risk conflict. The communication system is associated with safety and comfort, while the exploration system is associated with learning and exploration. As Ainsworth points out: communication and discovery support each other (Ainsworth, 1989). This protection is because it is necessary for discovery to occur that a person knows that he is fully protected in times of danger or anxiety. Security is shown through attention and danger through boldness. A secure base tries to provide security, certainty and comfort for exploration and risk-taking, and at the same time it stops the brain's focus on fear, threat and even survival and encourages humans towards curiosity and risk-taking. Therefore, the secure base in a way blossoms the inherent potential in the individual. If the leader only provides security, he will only be known as a source of comfort. However, if it does not instill the spirit of discovery, challenge and risk-taking in a person, it has actually limited his freedom. In other words, if a person is encouraged to take risks without providing security and assurance, you have undoubtedly asked him to gain some kind of assurance without any support for taking risks. In this situation, the person becomes vulnerable and becomes defensive against the danger. A secure

childhood base that balances safety and risk, plays a key role and tremendous impact. The secure base takes one out of the comfort zone. In other words, if a boss is interested in an employee but does not challenge him and does not encourage him to take risks, he is not considered a secure base in any way. Bowlby is of the opinion that a secure base should not have predetermined actions but should only intervene when necessary. Bowlby states that "this issue is a time-wasting policy". Accordingly, a secure base should always be ready and available. A secure base is someone who listens well to the other party, understands the signs (verbal or non-verbal) and tries to pay attention to their needs instead of imposing his opinions on people. In addition, a secure base never defends its position, but always tries to challenge people's thinking with the wise use of questions and make them think creatively and critically. Secure bases do not think for others and do not save them either; also, they never do what the person can do by himself, but they give the person the possibility to do the work themselves and then help him to understand the meaning of the experience (Top et al., 2015).

Commitment to people and goals. Another basic concept in secure base is a "combination of commitment to people and goals". The reason for commitment to the people is very clear; people need interpersonal relationships to feel intimacy, presence, and love. The reason for "commitment to goals" is also almost clear. To commit to goals, we must first define our goal and then be committed to the steps to achieve it. If a person has people as a secure base but does not pursue any goal, he may feel secure, but he feels so confident that he will no longer take risks to increase his abilities. In this situation, the person feels that other people love him, but he feels defeated. Also, if he pursues goals as a secure base but is not committed to people, he may achieve

material success in his work, but he will be completely deprived of love for people and commitment to them. Some external successes are considered personal failures due to the heavy costs caused by high stress and the loss of individual capabilities. A secure base leader tries to prevent these failures. People who only pursue goals as a secure base can simply be "Independent Loner". Many leaders carry wounds from the past without even realizing it, which severely affects their leadership negatively (Kohlrieser et al., 2012). Maintaining a balance between commitment to people and commitment to goals is very important in having a healthy performance, high self-esteem and optimal work performance. When a person is not committed to goals or people, he is afraid of rejection, he is afraid of success, and he is also afraid of failure. For this reason, it does not reach its real capabilities. No matter how strong a person is mentally and psychologically, fear still prevents a person from reaching his goals because it makes him feel unworthy. A secure base helps a person focus on potential success, protects them from insecurities, and instills a sense of courage. Secure bases not only play an important role in learning people's skills, but also affect the perception of human existence. A secure base affects people's belief. In fact, they form the secure base of people's thinking, thinking can shape people's concentration, and the concentration itself is also the shaper of results. Although people's personal beliefs are rooted and established, they can be influenced or, more precisely, these beliefs can be shaped. It is the individual who chooses to positively or negatively influence other people's beliefs. Secure base leadership emphasizes both the relational nature of leadership (people) and the operational aspect of doing work optimally. By focusing on people, the leader can encourage them and use their participation to achieve something beyond the expectations. A person's personal life defines his leadership status. In fact, the leader's personal life is the source of

inspiration and limitations in his leadership style. In short, the leader's humanity is reflected in his leadership. The integration of people and goals as a secure base allows one to trust each other, to be creative, to take risks, to explore and innovate, and to be cheerful and lively in one's work. When we ask people to describe being a member of a high-performance team, they sometimes say that working in such teams is very difficult but enjoyable. In other words, these people were closely related to goals and people. If people feel insecure because of the leader's behavior, they will never be able to explore and learn. A leader who is a secure base for his people allows them to form new mental models and achieve more "self-confidence, independence, efficiency, self-efficacy and self-esteem" (Cynthia et al., 2014).

Bonding. The concept of bonding in secure base leadership is defined as one of the key concepts as follows: creating a kind of friendship and belonging that creates more physical, emotional, mental or spiritual energy for a person or people compared to when they are alone. A secure base leader communicates with his followers. This relationship eventually turns into a sense of "trust", that is, people will trust that the leader has nothing but their interests in mind, and if they make a mistake or fail in their work, the leader will support them, because the leader knows how much challenge is suitable for them. A secure base leader encourages his people to move forward, accepts bigger challenges with an open mind and meets them carefully and proudly. In today's highly competitive world, communication with people is the biggest challenge facing secure base leaders and is a suitable test to measure their capabilities. A secure base leader considers failure as a natural process and instead of focusing on discomfort, he focuses on benefits and successes because he has created a sense of trust between members, this allows them to face their fears and express their feelings

of hopelessness. At the end of this process, people reach the stage of forgiveness and gratitude and are ready to deal with new challenges and relationships (Kohlrieser et al., 2012).

Literature Review

In this section, the review and evaluation of some domestic and foreign studies conducted in the field of the subject under study are discussed:

Ghalavandi and Ahmadian (2017) investigated the relationship between secure base leadership and work ethics. Their results showed a positive and significant relationship between secure base and the dimensions of interest in work, healthy relationships and cooperation in the workplace.

Nasiri and Sepahvand (2016) examined the secure base situation in Bu Ali Sina University from the perspective of the employees. The results showed that the use of secure base style in Bu Ali Sina University is higher than average from the employees' point of view.

Nasiri and Sepahvand (2016) conducted a correlation analysis between organizational identity and secure base style with employees' job performance. The results showed a positive and significant relationship between organizational identity and secure base style with the job performance of Bu Ali Sina University employees. Among the dimensions of organizational identity, the component strategic knowledge had the greatest effect in predicting job performance, and among the dimensions of secure base style, the components acceptability and use of intrinsic motivation respectively had the greatest effect in predicting the job performance of employees, in Buali Sina University, Hamedan.

Mohajeran, Khalili and Ashrafi (2016) investigated the relationship between secure base leadership and organizational commitment with the mediation of job satisfaction using structural equation modeling. The results showed significant relationships between secure base leadership, job satisfaction and organizational commitment. Also, job satisfaction plays a mediating role in the relationship between secure base leadership and organizational commitment.

Wu and Parker (2017) investigated the role of leader support in facilitating active employee behavior in terms of attachment theory. The results showed that leaders' secure support (support in the form of leader's availability, encouragement, and non-interference in affairs) significantly predicts the positive and active behavior of employees. Leaders who have a secure attachment style take the lead in supporting employees for active and positive behavior and increase the ability of employees to perform active behavior.

Shams and Khalijian (2014) examined the relationship between secure base leadership and leadership effectiveness and job satisfaction. Their results showed a positive and significant relationship between the components of secure base leadership with leadership effectiveness and job satisfaction.

Coombe (2010) found that secure base leadership as a positive theory in leadership directly affects leadership effectiveness, job satisfaction and psychological security and leader-follower relationship.

Methodology

The present study was conducted on a hybrid basis according to exploratory mixed research design and carried out in two consecutive qualitative-quantitative phases. In the first phase (qualitative), by

reviewing and evaluating the studies conducted in the field of the topic raised in the current research, as well as in-depth interviews with experts in the field of leadership styles, especially the secure base leadership style, the necessary data was collected and using the grounded theory along with Glazer's approach (Stern, 2016), the conceptual model was coded, classified and presented. Grounded theory is an inductive and exploratory research method that allows researchers in various subject areas to develop their own theory instead of relying on existing theories. This theory is developed systematically and based on real data. This method is used in cases where our knowledge in those fields is limited. In this method, the steps of analyzing the collected qualitative data are carried out in three stages: open coding, axial coding and selective coding: 1) Open coding is an analytical process through which the concepts and characteristics and dimensions are identified are discovered from within. In the open coding phase, the researcher identifies the concepts and expands them according to their characteristics and dimensions. At this stage, from the primary raw data, the researcher makes the preliminary categories related to the phenomenon under investigation by dividing the data into categories of information about the phenomenon under study, asking questions about the data, comparing cases, events and other states of phenomena are used to obtain similarities and differences. 2) Axial coding: the researcher makes one of the categories the focus of the process under investigation and discovery (main dimension) and then relates other categories (components) to it. In this regard, here, the main dimensions and related components have been identified. 3) Selective coding: it is the process of regularly selecting the core category and relating it to other categories, validating the relationships and filling the gaps with categories that need to be modified and expanded. Data analysis in this section was done using MAXQDA

2020 software. At this stage, in order to evaluate the validity of the model, the focus group was used, and in order to evaluate the reliability of the model, the Kappa coefficient was used.

The second phase (quantitative phase) of the study was quantitative and by the method of structural equation modeling, for this purpose, the data collected from the researcher-made questionnaire based on the proposed model (resulting from the qualitative phase of the study) was evaluated. In the current research, at the level of descriptive statistics, frequency, frequency percentage related to demographic variables (gender, etc.) as well as mean, standard deviation related to research variables were used. In the inferential statistics section of the present study, the Kolmogorov-Smirnov (K-S) test was used to test the assumptions for normality, and the Structural Equation Modeling (SEM) was used to analyze the data. It should be noted that due to the fact that the accuracy of the results obtained from the Smart PLS software is not sensitive to the number or normality of the data and it has higher accuracy and quality compared to other structural equation modeling software packages. In order to evaluate validity, convergent validity and divergent validity were used, and in order to evaluate reliability, Cronbach's alpha coefficient and composite reliability were employed.

This study, in terms of purpose, is among applied researches that are conducted in the field. The method of the present research is mixed in terms of data collection method, which has been implemented qualitatively and quantitatively. Also, the design of this exploratory research is sequential and of the instrumental type. Therefore, first the qualitative section was done to identify the components of secure base leadership and then the quantitative section was performed to statistically review the findings of the qualitative section. This research

has been done in the qualitative part by thematic analysis method and in the quantitative part, a descriptive-survey method has been used. The statistical population for the qualitative part is discussed in the next subsection, followed by the discussion on the data collection tool that is used in this study.

Statistical population

The statistical population of this research includes two communities, in the qualitative part of the research, faculty members and experts and professionals in the field of educational management and psychology were selected as potential participants for the design and formulation of the model. In order to select these people, factors such as experience, position, education, relevance to the subject, interest and having enough time for interview, etc. were taken into consideration. In order to extract the codes, interviews were conducted using the theoretical sampling method until the theoretical saturation is reached. Theoretical saturation is achieved when additional data do not help to complete and specify a theoretical category and the samples then look similar, in other words, the point of theoretical saturation is the repetition of data in research and this repetition of data and the results obtained from it in the methodology, shows the reliability of the research method. The sampling method in this qualitative design was theoretical sampling, namely, the purposeful selection of key informants based on the specific information they have about the research topic. Theoretical sampling requires data collection based on categories to develop theory. The sampling of experts in this research continued until the process of discovery and analysis reached the point of theoretical saturation. In this study, after conducting the interview process with 14 experts, the researcher reached theoretical saturation

and encountered duplicate data; thus, the interview process was stopped.

In the quantitative part, the statistical population included all the administrative staff of the Education and Training Organization and teachers in Tehran (n=115,277), and using Cochran's equation, the number of investigated people is equal to 383 people. The sampling method at this stage was multi-stage cluster sampling. For this purpose, the educational areas of Tehran city were divided into five areas: north, south, center, east and west, and then one educational district was selected from each area, and in the next stage, a number of schools of different courses were randomly selected from among the schools of the selected educational areas and questionnaires were distributed. The demographic characteristics of the statistical sample are presented in Table 1.

Table 1.

Demographic characteristics of the statistical sample

Variable	Group	Frequency	Percentage
Age	30-40 years	103	26.89
	40-50 years	1085	48.30
	Above 50	95	24.80
Gender	Male	128	33.42
	Female	255	66.58
Education	Master	268	69.97
	PhD and above	115	30.03
Experience	5-10 years	90	23.50
	10-20 years	157	44.99
	Above 20 years	136	35.51

Data collection tool

Key informants and experts in the field of educational management and psychology have been interviewed in-depth with the aim of discovering dimensions and features of secure base leadership in the qualitative part. The interview protocol includes 8 general questions about the time that these people experienced secure base leadership. Most interview questions determined their experience of other people acting as their secure base. These questions were asked based on the results of the document analysis of the qualitative part of the research. In the research process, efforts were made to maintain the principles of research ethics, informed consent of participants was obtained and the confidentiality, anonymity, fidelity and freedom of opinion of the participants during and after the interview was ensured. Due to the personal nature of the interview questions at the beginning of the interview, the purpose of the research was stated and emphasized that the interviews will only be used for research purposes and the identities of individuals will not be specified in any way in research reports.

In the quantitative part of the research, a questionnaire with 56 questions was designed to determine the validity and reliability of the secure base leadership model available in schools according to the markers obtained from the study of documents and the in-depth interviews. This questionnaire measured three main dimensions including security, exploration and intellectual bond and 16 features. After designing the questionnaire, in order to evaluate the validity of the questionnaire and the questions asked, in a preliminary investigation, it was sent to the professors, experts and managers. Based on receiving corrective feedback and correcting the wording of the questionnaire according to their opinion, the validity of the

questionnaire, the compatibility of the subject with the questions and the usability and appropriateness of the questions were ensured. Considering this, it was found that the questionnaire questions have the power to explain and test the designed measurement tool. Also, to check the reliability, the questionnaire was distributed among 45 people from the statistical sample and based on the answers they gave to the questionnaire, the reliability was also approved.

Findings

Findings of Qualitative Part

Qualitative results with an inductive approach, were obtained based on interviews and open, axial and selective coding. Here, axial coding means to reach sub-components and the selective coding means to reach the main components of the research. In the open coding stage, which is the first step of describing the coding process, all the interviews have been individually converted into codes in the form of each sentence.

Presentation of Model

During the coding process, 16 axial codes were extracted in the form of 56 open codes. After identifying the primary codes, similar secondary codes were placed together and formed the classes, and for each class, a suitable title was considered that could cover all the secondary codes of a set. Finally, 16 secondary codes were categorized in the form of 3 selective codes. Table 2 shows the process of open, axial and selective coding for the central category of the research.

Table 2.

Open, axial and selective coding process

Open coding and selective coding			**Axial coding**
Primary code	**Secondary code**	**Category**	**Core Category**
Granting self-worth and respect to the individual Preserving human values Acceptance and respect for people	Acceptance	Security	**Secure base Leadership**
Supporting people both personally and organizationally Support in times of danger	Support		
Create mental security High morale Create a happy work environment	Provide security		
Believe in and trust People Establish comfortable and intimate relations with others Being reliable and fair	Mutual trust		
Developing and maintaining independence of individuals Providing the opportunity of trial and error for each person	Independence		
Justice and the rights of others Compassion in the workplace Having a sense of altruism Avoid being judgmental	Equity		
Stays calm and reacting appropriately in inappropriate situations Graceful behavior while interacting with others	Staying calm		

Open coding and selective coding			Axial coding
Primary code	**Secondary code**	**Category**	**Core Category**
Recognizing critical situations Ability to take risks	Risk-taking	Exploration	
Emphasizing on individuals' merits Developing internal motivation for success Providing the opportunity for individuals to experience and learn Giving responsibility to individuals based on their abilities Respecting individuals' failures as a learning experience Encouraging and highlights one's positive attributes Encouraging individuals to strive for growth	Strengthening personal capacity		
Having social responsibility Sensitivity to events and conditions Being responsive when needed Carefully solving issues	Sensitivity and accountability		
Welcoming individuals' ideas Paying attention to individuals and their initiatives and successes Being active	Intellectual stimulation		
Being hopeful in critical situations Having foresight Having a positive view of oneself Having a positive view of others	Positive attitude	Intellectual bond	
Hopefulness Learning from the mistakes of others Balancing of emotion and logic in action	Emotional capacity		

Open coding and selective coding			Axial coding
Primary code	**Secondary code**	**Category**	**Core Category**
Accepting different and conflicting opinions Trying to break the resistance of individuals to change Collaborative teamwork especially in sensitive situations			
Being fervent and having strong social relations Paying attention to ethical standards Establishing sincere relations with subordinates within normal boundaries Ease of sharing feelings	Transparency in relationships		
High tolerance Ability to adapt to different situations Properly-timed encouragement and punishment to help one's growth and emotions Ability to recognize the necessary situations to intervene and provide protection	Compatibility		
Transparency of responsibility and tasks of individuals			
Listening Giving hope to individuals	Being a good listener		

After checking the text of 14 interviews, 81 open codes were obtained, since in this study, after 12 interviews, the researcher had reached theoretical saturation and conducted the 13th and 14th interviews to ensure theoretical saturation, out of 74 extracted open code, 15 ones

were duplicated, and by removing them, 56 unique open codes were obtained for the present study. Next, as a result of the axial coding of interviews conducted with individuals, 16 axial codes were obtained from 56 refined open codes. Finally, 3 optional codes and a core category under the title of secure base leadership were obtained. Figure 2 shows the secure base leadership model developed by MAXQDA software.

Findings

Qualitative results were obtained using the interviews and open, axial and selective coding based on inductive approach. Axial coding here means obtaining the secondary components and selective coding means obtaining the primary components of the research. In the open coding stage, which is the first step in the coding process, all sentences in interviews are converted into codes and 32 basic concepts are extracted in the form of 8156 open codes. After identifying the primary codes, the similar secondary codes were put together to form the categories, and for each category a suitable title was considered that could cover all the secondary codes of a set. Finally, 16 secondary codes were classified into 3 categories. Table 1 shows the open, selective and theoretical coding process for the central subject of the research. Figure 2 shows the model of secure base leadership with MAXQDA software.

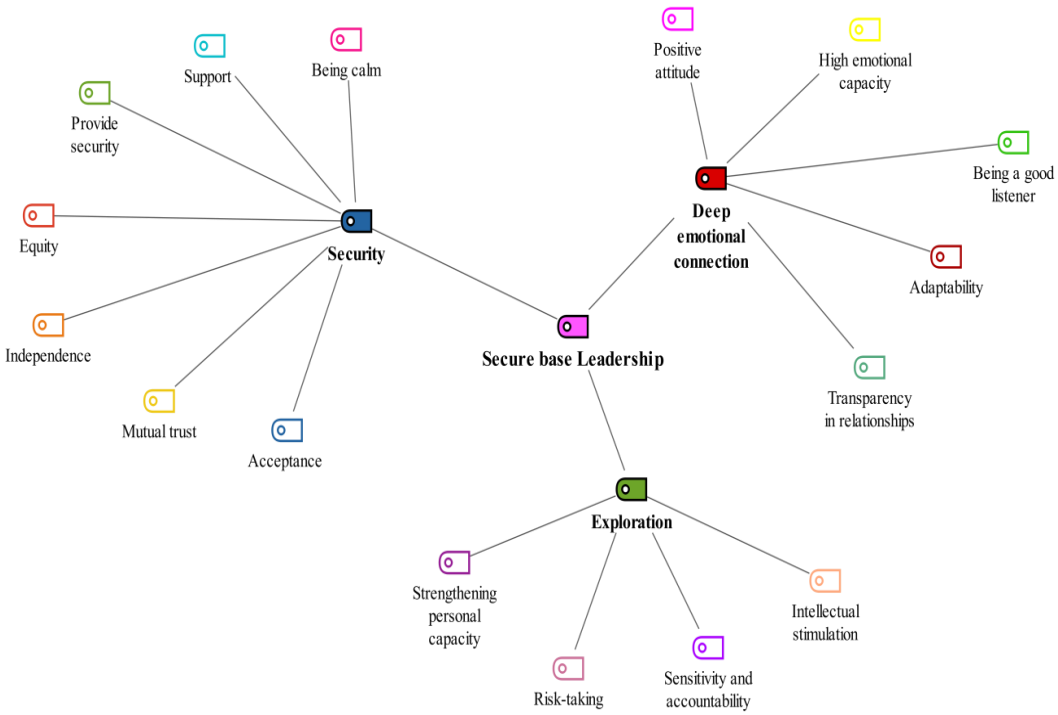

***Figure* 2.** Exploratory model in the qualitative part

The presented model for the secure base leadership consists of 3 selected codes (dimensions) including security, exploration and deep emotional connections. In the following, each of these codes would be examined.

Security. The security dimension consists of seven components, including acceptance, support, providing security, mutual trust, independence, fairness, and maintaining peace. The secure base leadership style, as one of the management styles, emphasizes on creating security and trust among the members of the organization. Therefore, the security component is used to implement this leadership style in the organization. One of the pillars of security is creating a sense of worth and respect for the individual, which is

considered as one of the main components of the secure base leadership style. In this style, the leader strengthens trust and positive relationships by creating this feeling in the members of the organization, and as a result, the members do their work with a sense of satisfaction and security. Another component that is considered in the secure base leadership style is supporting people both personally and organizationally. In this style, by providing support to the members of the organization when facing risks, the leader removes the fear and worries of possible conflicts and provides them with psychological security. In the secure base leadership style, the leader encourages the members of the organization to be more efficient and perform better by having a high morale and creating a happy work environment. Also, by believing in people, the leader encourages the members of the organization to actively participate in the organizational processes and facilitates the creation of motivation for them. In this leadership style, the leader supports positive communication between the members of the organization by establishing comfortable and intimate communication with others, and these communications can lead to better efficiency and performance in the organization. In this style, maintaining justice and the rights of others and having a sense of altruism are also very important. By observing these components, the leader encourages the members of the organization to interact and cooperate positively with others, and as a result, a dynamic and united society is created in the organization. In the secure base leadership style, the leader, having a sense of altruism and compassion in the work environment, encourages the members of the organization to create positive and friendly relationships, and these relationships can result in increased trust and interaction in the organization. Another component that is very important in the secure base leadership style is creating a calm

and stable environment. By maintaining calmness and dealing appropriately in inappropriate situations, the leader encourages the members of the organization to be flexible and adapt to different situations, and as a result, the organization becomes more adaptable to various developments and changes. In this style, respecting the individual independence of people is also very important. By providing an opportunity for error and testing to the individual, the leader encourages the members of the organization to interact independently and make better decisions at different times, and as a result, people continue their activities with a sense of confidence and security. In general, by using security components and following the basics of secure base leadership style, a safe and stable work environment can be provided in the organization, which will improve the efficiency and performance of the organization members and, as a result, the organization's progress.

Exploration. The exploration dimension consists of four components including risk-taking, strengthening personal capacities, sensitivity and responsiveness, and intellectual stimulation. Leaders must be able to recognize and anticipate critical situations such as security threats, natural disasters or organizational problems. They should design and implement appropriate emergency plans to manage the organization well in the event of a crisis. Leaders must have the ability to deal with risks and make decisions in complex situations. They must analyze the risks and evaluate the advantages and disadvantages of various actions and, if necessary, make decisions that help maintain the security and progress of the organization. Leaders should identify people's abilities and talents and encourage them to develop and exploit their abilities. They should design and implement individual training and development programs for organization members to

ensure improvement and progress in their work and performance. Leaders should guide the members of the organization towards success by presenting attractive and meaningful goals and create the motivation and energy necessary to achieve the goals in them. They should encourage members of the organization to strive for improvement and development and support creative and innovative work. Leaders should provide opportunities for learning and experience to members of the organization. They should enjoy sharing their knowledge and experiences with organizational members and support individual training and development opportunities. Leaders must trust the members of their organization and assign them appropriate responsibilities so that they can perform their duties well and take advantage of their abilities. Leaders should look at people's failures as an opportunity for new learning. They should support the members of the organization and encourage them to continue to strive and grow. Leaders should encourage people's abilities and achievements and encourage them to continue to strive and improve. They should highlight the individual positive points and praise their efforts. Leaders must communicate with organization members and listen to their opinions and concerns. These communications can be done directly through meetings or indirectly through communication systems such as email or SMS. These communications help leaders understand and respond to the needs and concerns of organizational members. Leaders must create a safe and mutually supportive environment for organization members. This includes creating a space for members to share their opinions and ideas without fear of criticism or disparagement. Leaders should demand and expect organization members to treat each other with respect and to act constructively and collaboratively in discussions and decisions. Leaders must inform organization members about security goals and strategies. They

should explain to members why perimeter security is important to the organization and how everyone can work together to create and maintain such conditions. This information gives confidence and motivation to the members and obliges them to perform their security duties. Leaders should make organization members participate in security-related trainings and courses. These trainings can include technical training, awareness of security threats and methods to deal with them. These trainings help members to acquire the necessary skills for creating and maintaining security and actively participate in the organization's security processes. Using these exploration methods and components, leaders can implement a secure base leadership style in the organization and help members succeed in creating and maintaining this leadership style.

Deep Emotional Connections. The dimension of emotional connections consists of five components: positive attitude, high emotional capacity, transparency in relationships, adaptability and being a good listener. The component of deep emotional connections in the secure base leadership style are considered as one of the most important and essential components in creating a security culture in the organization. This component is based on establishing sincere and stable relationships between the leader and the members of the organization. The leader strengthens the trust and solidarity in the organization by establishing deep emotional connections with the members of the organization. By creating this type of relationship, the members of the organization feel that the leader cares about them and trusts them. This component makes the members of the organization trust their leader and get psychological support in critical situations. This type of relationship makes the members of the organization adhere to their leader and support his decisions. Also, by establishing

deep emotional connections, the leader can facilitate the creation of an open and intimate space in the organization by sharing their feelings with the organization members. By providing opportunities to express feelings and opinions, the leader can make the members of the organization care and help each other. Another benefit of deep emotional connections in the secure base leadership style is increased cooperation and coordination among organization members. By establishing cordial relations, the members of the organization can easily cooperate with each other and achieve success in sensitive situations with their coordination and cooperation. Also, deep emotional connections make the members of the organization respect their leader and respect his decisions and follow them. This makes the members of the organization commit to their leader and help promote the goals of the organization by following his decisions. In general, by establishing deep emotional connections in the secure base leadership style, leaders can strengthen the security culture in their organization and strengthen trust and solidarity by creating sincere and stable relationships with organization members. This makes the members of the organization stick to their work with more confidence and motivation and achieve success with cooperation and coordination. Also, by establishing deep emotional connections, leaders can make organizational members more effective and committed to breaking resistance to change and facilitate the creation of an open and intimate atmosphere in the organization.

By establishing deep emotional connections, leaders can easily connect the members of the organization and by creating an open and intimate atmosphere, encourage the members of the organization to accompany and cooperate more in organizational work. This makes the members of the organization trust their leader and be psychologically supported

in critical situations. Also, deep emotional connections make the members of the organization respect their leader and respect and follow his decisions. This makes the members of the organization commit to their leader and help promote the goals of the organization by following his decisions. In addition, by establishing deep emotional connections, leaders can make organizational members more effective and committed to breaking through resistance to change. In this case, the organization members will adhere to the changes with more confidence and motivation due to the deep connection with the leader. To establish deep emotional connections, leaders must be able to deal with organizational members as people with personal and human feelings and needs and have a deep understanding of them. For this purpose, leaders must accept and pay attention to the needs of organization members and help them to establish deep emotional connections with their leaders by creating spaces for dialogue and sharing feelings. In this leadership style, leaders should create a safe and intimate atmosphere for organization members by providing opportunities to express feelings and opinions. This makes the members of the organization easily share their feelings and needs with their leaders, and this is a golden opportunity for the leaders to get to know the members of the organization better and improve their relations with them. In general, deep emotional connections are recognized as one of the most important components of secure base leadership style in creating a security culture in the organization. By establishing these types of links, leaders can connect the members of the organization and strengthen trust and solidarity by establishing sincere and stable relationships with them.

Evaluating Validity and Reliability of the Model

In order to evaluate the validity and reliability of the secure base leadership model in the education organization, after interviews with experts and carrying out the coding process with the grounded theory method based on Glaser's approach, a total of 1 core category, 3 selective codes, 16 axial codes and 56 open codes were selected.

To ensure the validity of the research, we used the peer review method to determine the validity of our research. For this purpose, a focus group consisting of 14 experts who were initially interviewed was formed and the extracted codes were provided to them and they were asked to express their opinion about the extracted codes. The result of the review and evaluation of the focus group and their discussion about the extracted codes was that the presented model has an acceptable validity.

In this study, the agreement reliability method between two coders was used to check the reliability of the interviews. The agreement between the coders is the agreement of two or more coders regarding the codes used for a part of the interview text. In order to calculate the reliability of the interview with the within-subject agreement method of two coders, a doctoral student was asked to participate in the research as a research associate (coder). The necessary training and techniques for coding the interviews were transferred to them. Then, we coded the number of four interviews and the percentage of intra-subject agreement (Kappa coefficient) was calculated to be 0.84, indicating desired and acceptable reliability.

Findings of the quantitative part

Here, the conceptual model was tested using Smart PLS software and in two general stages including "checking the fit of the model" and "answering the questions". Checking the fit of the model itself has

three stages: in the first stage, the measurement model was examined through validity and reliability analyses. In the second step, the structural model was checked by estimating the path between the variables. In the third step, the overall fit of the model was examined. Finally, if the model had a good overall fit in the above three stages, then the research questions could be answered.

Step 1: Evaluation of the measurement model

Factor loading coefficients. First, the research model was tested based on the factor loading coefficients. If the factor loading is less than 0.3, the relationship is considered weak and is ignored. A factor loading between 0.3 and 0.6 is acceptable, and if it is greater than 0.6, it is very desirable. The structural equation model of the research model in the standard factor loading estimation mode is drawn in Figure 3. The results of the test showed that all factor loadings of the indicators are above 0.4 and the factor loadings of the indicators are favorable.

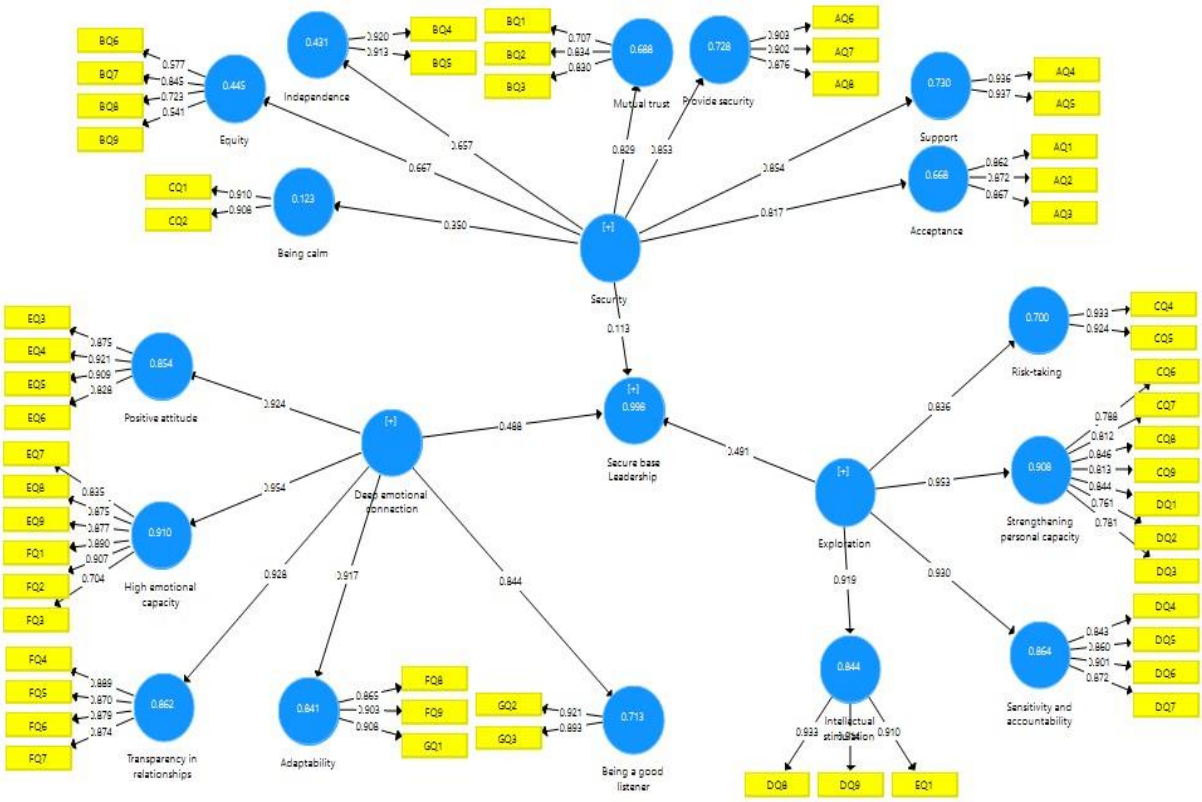

Figure 3. The structural equation pattern of the research model in the mode of standard factor load estimation

Cronbach's alpha coefficient. Here, using Smart PLS software, Cronbach's alpha was calculated for the research variables and is reported in Table 3. As mentioned, the closer this coefficient is to one, the more suitable it is.

Composite reliability. The Composite reliability of each research variable is as described in Table 3. As can be seen in the table, all variables have a Composite reliability of 0.7 and above, and therefore, in terms of Composite reliability, the model is approved.

Convergent validity. In order to check the convergent validity of the model, Average Variance Extracted (AVE) was used. The critical value of this criterion is 0.5, namely, the value of AVE above 0.5 shows acceptable convergent validity. The values of this criterion for the research model are as described in Table 3. As it can be seen, the AVE value of all variables is above 0.5, indicating the convergent validity of the model.

Table 3.

Values of Cronbach's Alpha, Composite Reliability and AVE

Latent variables	Cronbach's Alpha	Composite Reliability	AVE
Independence	0.808	0.913	0.839
Mutual trust	0.702	0.834	0.628
Equity	0.604	0.771	0.466
Intellectual stimulation	0.908	0.942	0.845
Individual capacity strengthening	0.91	0.929	0.651
Sensitivity and accountability	0.892	0.925	0.755
Preserving human values	0.79	0.905	0.827
Support	0.86	0.935	0.877
Risk taking	0.84	0.926	0.862
Compatibility	0.871	0.921	0.796
Transparency in relationships	0.901	0.931	0.771
Being a good listener	0.785	0.902	0.822
Emotional capacity	0.922	0.94	0.724
Providing security	0.874	0.923	0.799
Positive attitude	0.906	0.935	0.782
Acceptance	0.836	0.901	0.752

Divergent validity. In order to check the divergent validity of the model, the Fornell and Larcker (1981) criterion was used. This criterion specifies the degree of relationship of a variable with its indicators in comparison of the relationship of that variable with other variables so that acceptable divergent validity indicates that a variable interacts more with its indicators than with other variables. Fornell and Larcker state that divergent validity is acceptable when the AVE for each variable is greater than the shared variance between those variable and other variables. In the Smart PLS software, this is checked by a matrix, the cells of this matrix contain the values of the correlation coefficients between the variables and the square root of the AVE values of each variable. In Table 4, this matrix related to the variables is shown. The model has an acceptable divergent validity if the numbers included in the main diameter of the matrix are above the values below it. As can be seen in Table 4, all the numbers of the main diameter are greater than those of their underlying columns, which means that the model has acceptable divergent (discriminant) validity.

Table 4.

Divergent Validity of the Model

	Independence	Mutual trust	Equity	Intellectual stimulation	Individual capacity strengthening	Sensitivity and accountability	Preserving human values	Support	Risk taking	Compatibility	Transparency in relationships	Being a good listener	Emotional capacity	Providing security	Positive attitude	Acceptance
Independence	0.916															
Mutual trust	0.621	0.792														
Equity	0.655	0.597	0.682													
Intellectual stimulation	0.247	0.23	0.408	0.919												
Individual capacity strengthening	0.146	0.175	0.402	0.796	0.807											
Sensitivity and accountability	0.256	0.193	0.407	0.862	0.83	0.869										
Preserving human values	0.169	0.187	0.437	0.744	0.735	0.76	0.909									
Support	0.382	0.583	0.358	0.222	0.188	0.243	0.134	0.937								
Risk taking	0.213	0.222	0.388	0.702	0.806	0.675	0.792	0.235	0.928							
Compatibility	0.154	0.121	0.365	0.729	0.749	0.735	0.683	0.135	0.673	0.892						
Transparency in relationships	0.184	0.09	0.359	0.741	0.769	0.748	0.685	0.134	0.654	0.861	0.878					
Being a good listener	0.105	0.104	0.304	0.722	0.655	0.724	0.646	0.137	0.512	0.738	0.714	0.907				
Emotional capacity	0.221	0.17	0.385	0.8	0.763	0.807	0.711	0.183	0.698	0.823	0.852	0.776	0.851			
Providing security	0.363	0.644	0.328	0.184	0.158	0.19	0.125	0.856	0.223	0.119	0.095	0.099	0.154	0.894		
Positive attitude	0.203	0.202	0.391	0.823	0.784	0.819	0.713	0.197	0.668	0.809	0.798	0.776	0.843	0.168	0.884	
Acceptance	0.36	0.577	0.308	0.194	0.142	0.185	0.122	0.799	0.183	0.11	0.078	0.106	0.144	0.739	0.203	0.867

The second step: structural model evaluation

The structural model or external model shows the relationships between the latent variables of the model. In fact, in this section, the

questions (indices) are not paid attention to and only the latent variables are examined along with the relationships between them. In evaluating the structural model, several criteria are used, each of which is discussed below.

T-values. The most basic measure of the relationship between variables in the model is the t-values, which if it is greater than 1.96, the correctness of the relationship between the variables is shown and as a result, the relationship(s) at the confidence level of 95% are confirmed. Figure 4 shows the test results of the conceptual model of the research in the significance state of the t coefficients. The values calculated on the arrows indicate the t-values. The T-value results reported in the above figure are all greater than 1.96, so it can be concluded that at the significance level of 95%, all questions and latent variables are considered for the structural equation model and there is no need to remove any of questions and latent variables from the model.

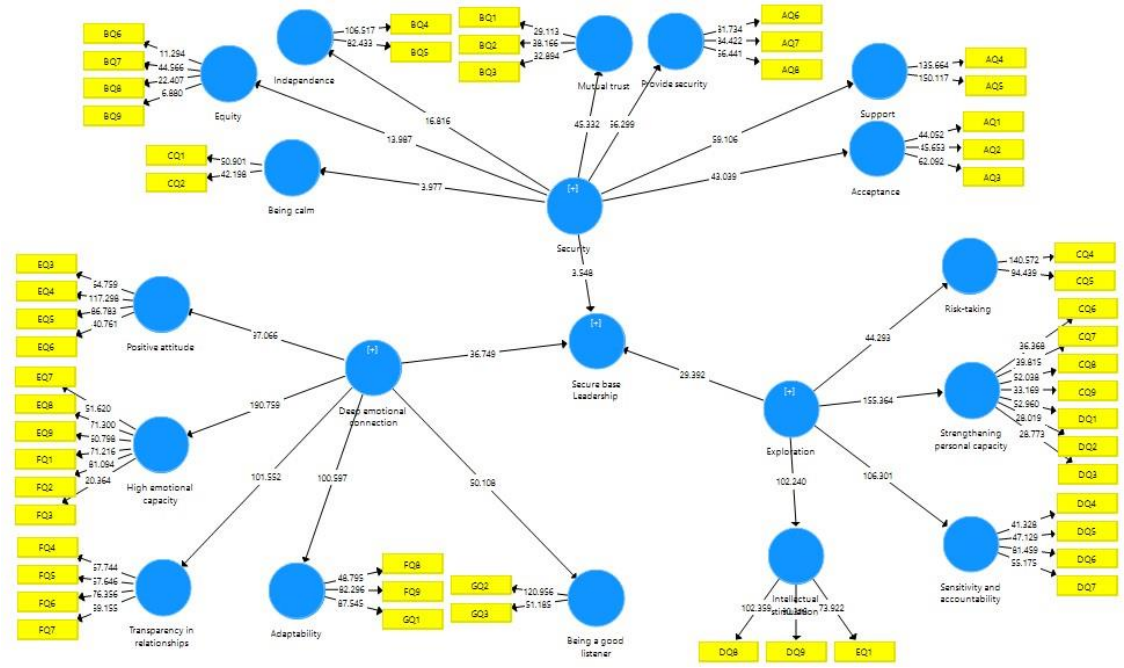

Figure 4. The structural equation model of the research model in the case of significant coefficients of the t statistic

The third step: evaluation of the overall model

The overall model includes both measurement and structural model parts, and by confirming its fit, the fit checking in a model is complete. For the overall fit of the model, only one criterion is used as Goodness of Fit (GoF). Considering that this index is partially dependent on commonality, then this index can be conceptually used when the measurement model is reflective (Abolfazli and Salamat Azar, 2015). This criterion was invented by Tenenhaus et al., (2004) and is calculated according to the following equation:

$$GoF = \sqrt{(\overline{Communalities} \times \overline{R^2}}$$

The three values including 0.01, 0.25 and 0.36 are introduced as weak, medium and strong values for GoF. This means that if the value of 0.01 and close to it is calculated for the GoF of a model, it can be concluded that the overall fit of that model is weak and the relationships between the model structures should be corrected. For the values of 0.25 and 0.36, the overall fit of the model is at an acceptable level.

The value of GoF for the model was calculated to be 0.766, which shows the overall strong and very appropriate fit of the model.

Discussion and Conclusion

The aim of this study was to provide a model of secure base leadership in the education organization in Iran. The results of the qualitative section showed that secure base leadership consists of three main dimensions of security, exploration and intellectual bond. The security dimension consists of acceptance, support, providing security, mutual trust, independence, fairness and keeping of mind. The exploration involves risk-taking, increasing individual capacity, being responsive and sensible and intellectual stimulation. Intellectual bond also includes positive attitude, emotional capacity, compatibility and being a good listener. Among these characteristics, support and mutual trust from the security dimension, increasing individual capacity, being responsive and sensible from the exploration dimension, and, adaptation and positive attitudes from the intellectual bond dimension were mostly highlighted in the interviews. Then, using confirmatory factor analysis technique, reliability, divergent validity and convergent validity of the model were examined. The results showed that the model has acceptable validity and reliability and also the goodness-of-fit indices confirmed the validity of the model. In literature review, it was found that the results of this study are directly related to the

findings of studies such as (Coombe, 2010; Shams and Khalijian, 2014) and also indirectly related to the findings of studies such as (Griffin and Hu, 2013; Skeepers and Mbohwa, 2015; Zhou and Pan, 2015; Tong, Rasiah, Tong, and Lai, 2015; Sağnak, 2017).

It can be concluded from the results that understanding the relationship between dimensions of leadership and employee safety are very important for theoretical and practical reasons. Due to the influence of leaders in the organization, they can play an important role in the security of the organization's employees and leaders who strive to create a positive atmosphere provide better security for the organization and employees (Hoffmeister, Gibbons, Johnson, Cigularov, Chen and Roscrance, 2014). In fact, the security dimension points to characteristics in a leader that lead to a kind of mental security in people to work. A leader must believe that employees today have different needs. Financial rewards are no longer the only motivating factor, but the needs of today's human beings are beyond that. One of the basic needs of employees today is a sense of security. Employees, without considering organizational status, want to feel important and to believe that they have control over their entire lives and can make influencing decisions around them without fear. In other words, the feeling of security arises from the objective and acquired experiences of individuals from their surrounding conditions. The features of security dimension in secure base leadership ensures employees that their needs are taken care of and that they are not threatened by anyone or anything. This sense of security provides a safe and reliable environment to foster creativity and more active participation of individuals in affairs and more effective performance.

On the other hand, as organizations entered the information age and confronted dramatic changes and developments, organizational

leaders realized that they should look at learning as a valuable phenomenon. They realized that to succeed in leading the organization to a better future, they should develop an organization and recruit people who continuously and effectively seek to learn new skills. This can only be achieved by activating a sense of exploration in individuals. With the realization of the security dimension, the sense of exploration in people is activated. If a leader only creates security for people in the organization, it only brings prosperity to employees. This behavior puts the organization at risk of stagnation and reduced effectiveness because people would not see the need to take risks anymore and challenge themselves and learn new skills. On the other hand, if employees are involved only in challenging activities without ensuring security, it is instilled in them that the work is the priority and not themselves. At the same time, stress and mental conflict of employees due to their reduced performance prevents them from successfully reaching their goals at work. A leader is secure base if in addition to providing security, encourages employees to explore and learn in the environment, because only then will the leader be able to upgrade the capabilities and capacities of its employees and achieve better performance. This type of leader acts based on the needs and capabilities of employees. In other words, a secure base leader creates a balance between risk and security for subordinates, which will have a positive effect on creativity, learning, satisfaction, and commitment of the employees. Organizational research also confirm the effect of leadership styles on learning in the organization (Babnik, Širca, and Dermol, 2014; Imamoglu, Ince, Keskin, Karakose, and Gozukara, 2015; Nyukorong, 2016).

The intellectual bond dimension was introduced in Coombe's (2010) theory as positive communication. However, we believe that what

happens in secure base leadership is more than just communication in order to transfer information from one person to another. According to researchers, a secure base leader creates a deep emotional bond with subordinates, but this does not mean establishing unusual intimacy with them. In this regard, we agree more with Bowlby's opinion about the bond that a mother, as a secure base, establishes with her child. The mother child relationship is not just about passing information to the child, but also provides an emotional context to help the child deal with situations that make him or her restless. This is similar to the bond that a secure base leader establishes with subordinates. We believe that a secure base leader, as a secure base for his or her subordinates and organization, is able to approach subordinates when they are faced with turbulent and threatening situations, and by establishing emotional and compassionate communication, protects and cares for the person and enables them to reestablish their desired safe conditions. During this bond, a constructive reaction is observed beyond what is expected of the subordinates because establishing an intellectual bond enables the subordinate to share the required information with the leader easily and without special considerations due to fear or hierarchical differences and helps to resolve the issue.

The goal here is a kind of supportive and sincere purposeful relationship. These leaders can cope with the situation which means that they are prepared to face any situation and are not subdued and passive. Establishing this kind of special intellectual bond leads to building mutual trust and psychological security necessary to perform activities and improve performance. This is a key dimension in secure base leadership, which means that in both dimensions of security and exploration, intellectual bond is created to provide security and a sense of exploration. This type of communication, which is associated with

the intellectual bond, is actually what is missing in many theories of organizational communication.

As a result, the secure-based leadership model presented in this research for Iran's education organization is in accordance with the collectivist culture and values of Iranian society; A society where human feelings and relationships have a special place. The development of this model in the education organization, which is the main institution of education in this society, is derived from the culture and climate of familiarity in which the employees grew up. Because the two main dimensions of this model, i.e. security and deep emotional connection, and the components and indicators of each of them, indicate that in the collectivist society of Iran, intimate relationships that also bring security, in schools and in the relationship between managers and their employees are very important. Therefore, if this close relationship is formed between the principal and the school teachers, the teachers will help the principal with more willingness and interest in solving the school's problems, and they will also perform their educational duties more dynamically and will participate in the in-service training courses with more motivation and desire, and they will help their growth and development, which is exploration. Because this type of leadership evokes the style of leadership that existed in their families, a family in which there is security due to the close relationship between the members, and each of them encourages each other to grow and progress, i.e. exploration. Therefore, it can be pointed out that by identifying and establishing this type of leadership style in eastern collectivist societies, especially in Iran, an important part of the issues and problems that exist in schools and in the field of education will be solved.

According to the research results in this study, the following suggestions are presented: the manager are recommended to control and monitor the performance of employees, not based on finding their weaknesses and mistakes to reprimand and blame them, but based on finding weaknesses in their training to identify and rectify them with softness and kindness. Also, Managers should encourage employees to work, with encouragement and support of their positive steps and progress in work. They are also suggested to avoid blaming employees as much as possible in order to create a supportive atmosphere. Managers should try to value silence when communicating with employees and listen more to what they have to say. In addition, employees should not feel unequal in terms of social status when communicating with their managers. Besides, managers should reduce employees' workload when they face personal crises in their lives (e.g., divorce, death of loved ones, etc.) and by supporting them in these difficult times, give them a sense of security and the possibility of overcoming the current crisis. They can periodically define challenging goals and involve employees in defining them. Managers should not make employees scared of taking risks. Reminding them that failure results in no negative consequences for employees will make them focus on challenging goals. Leaders need to believe that risk-taking has costs and be prepared to bear them. Another recommendation to managers is to provide the opportunity to increase the knowledge of an employee regarding a challenging and risky activity before engaging them in said activity. Managers should rely on the abilities of teachers and count on their help in challenging situations. They are also suggested to provide greater freedom of action for staff and teachers, allowing them to participate more in school activities. Managers should allocate daily or weekly scheduled times to hear about employees' problems and dissatisfaction with their

work environment and job responsibilities. As another recommendation for managers, they can encourage employees to express their opinions about work with others, even if their opinions are against those of others. Managers should not be upset by employees' curiosity and questions about the goals and results of the organization because a manager must believe that in this case, employees will be guided to communicate with each other and create an understanding of the organization and prevent negative thinking the its environment. Finally, managers are recommended to avoid unreasonable expectations from their employees.

In carrying out present study, we faced with some limitations such as limited theoretical literature as well as the weakness of the research background in relation to secure-based leadership; time-consuming project due to have multiple research method; time-consuming coordination with professors, teachers and experts and frequent visits to get an interview opportunity and their little desire to record the interviews due to the personal nature of the interview questions; limited access to get the answers of the male teachers and staff of the schools due to have mere permission to the girls' schools; and, existence of a conservative culture among teachers and the possible tendency of people to show a suitable face of their manager.

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