

Haim Shaked
Chen Schechter

Systems Thinking for School Leaders

Holistic Leadership for Excellence in
Education

Foreword by Michael Fullan

 Springer

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Much of what I have learned over the years came as the result of being a husband to my beloved wife Tali and a father to our wonderful and delightful children. Without your support and encouragement, I would not have had a chance of coming this far. Words cannot express how much I love you.

Haim Shaked

To my parents, Rina and Isaac Schechter, who survived the Holocaust and granted me a holistic and meaningful life. To my wife Ayelet and my daughters, Eileil and Daria: Every day I cherish the magical moments with you.

Chen Schechter

Foreword

Haim Shaked and Chen Schechter have done what no one else has been able to do, namely make ‘systems thinking’ clear and practical while retaining its depth and comprehensiveness. In *Holistic School Leadership*, the authors provide us with a clear, accessible and (given its breadth) amazingly complete treatment of ‘systems thinking for educational leaders’.

I am a great fan of systems thinking, and indeed use it in our ‘whole system’ improvement work, but I always thought that *systems doing* combined with *systems thinking* was crucial both for understanding the theory as well as getting deeper improvement in practice. Shaked and Schechter unpack the ins and outs of systems thinking and show us how to use it in a variety of situations. Their starting definition is simple: “seeing the whole beyond the parts, and seeing the parts in the context of the whole.”

In Part I the researchers unpack the history and meaning of systems thinking, as well as giving us a clear, succinct account of the research on the topic. We learn about the methodologies used in systems-thinking research, and related fields like complexity theory, and about their direct applications for school leadership. But Part I—containing the first four of the ten chapters in the book—for all its clear account of what has happened in the past, and its recent applications to applied school leadership, leaves us short. Tantalizingly, the reader gets a feel for holistic leadership, senses that it has great potential, but by the end of Part I, still is not in a position to appreciate its use in deep change. I suspect that this is the intent of the authors—to leave us wanting more, much more as we head into Part II—The *Holistic School Leadership* Approach and its Implementation. The six chapters in Part II deliver on this promise.

The discussion and especially the portrayal of solutions in each of the final chapters are brilliantly clear and succinct, in each case summarizing the essence in compelling charts and tables. Moreover, there are numerous quotes from school principals who are using (and can talk about) holistic leadership in action. Chapter 5, for example, describes *Holistic School Leadership*, summarizing it in a table with 8

dimensions delineating how ‘systems-thinking management’ and ‘linear management’ differ in each dimension—dimensions such as: ‘why should we work together’, ‘what is the connection between problems and their causes’, ‘how can we change the whole’, and so on.

Chapter 6 identifies the four major characteristics of *Holistic School Leadership*: Leading wholes; Adopting a multi-dimensional view; Influencing indirectly; and Evaluating significance. Each of these four elements has several sub-dimensions which are summarized in a single table—again all of this is illustrated from interviews with school leaders acting in this manner, and describing the actions in their own words.

Chapter 7 Shaked and Schechter tackle the difficult question of ‘where does systems-thinking capacity come from’ in school leaders. They found four sources: managerial experience, role model, academic study, and natural tendency. Then in Chap. 8 they identify the career stages that leaders traverse during the development of *Holistic School Leadership*.

The final two Chaps. 9 and 10, ‘*Holistic School Leadership* as a leadership framework’ and ‘*Holistic School Leadership* in action’, contain key lists of guidelines for successful implementation of systems thinking in school leadership, including applications for school leaders’ professional growth and useful tips for principals who aim to make their schools better by implementing the *Holistic School Leadership* approach.

Wherever you are in the education system you need to reflect on the big picture, your connection to it, and your ability to influence it and learn from it. This ‘systemness’, as I call it, is crucial for the deep learning that is required in the present circumstances, and will only become more urgent. Shaked and Schechter’s conclusions corroborate our recent experiences in trying to foster deep learning on a systemic basis. We found that ‘indelible leaders’ need to always foster learning in others while they themselves learn. They need to ‘feed and be fed by the system’, ‘learn and lead in equal measure’, be responsible for helping the group innovate and have impact for the long run (Fullan, *Indelible leadership: Always leave them learning*. Corwin, 2016).

Whether or not you think of yourself as a systems thinker, read this insightful and powerful book and you will be better off for it. Better still, your organization will thank you.

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Preface

Leading a school has never been an easy job; however, current school principals face particularly complex challenges. The present era of accountability in education systems is characterized by high expectations from school leaders, alongside frequent changes in a variety of arenas. School principals are expected to demonstrate positive results in terms of their students' achievements, and align all aspects of schooling to support the goal of improving instruction in order to ensure all students' success. The main argument of this book is that school principals, who face today's educational leadership complexities, may benefit from the holistic perspective of systems thinking.

The full description of systems thinking spans an entire chapter below, but as an initial definition, systems thinking may be explained succinctly as an approach that puts the study of wholes before that of parts. This approach does not try to break systems down into parts in order to understand them; it concentrates its attention instead on how the parts act together in networks of interaction. Shifting to systems thinking as a holistic management approach can be disorienting for people who were trained exclusively in traditional, linear thinking. A fuller understanding of the intricacies of systems thinking may evolve gradually over time. Hence, readers are invited to continue to ponder its meaning as they progress in reading this book.

Today, systems thinking is still not afforded the attention it deserves in the domain of school leadership, even though the majority of school leaders contend that a systemic approach is fairly important to school leadership and even state that they espouse such an approach. Contemporary school leaders are unfortunately not yet sufficiently knowledgeable about the implications of systems thinking for their everyday work and are not entirely aware of its possible impact on schools' success. Against this background, our book presents an educational leadership approach—*Holistic School Leadership*—where school leaders employ a holistic perspective to lead schools through systems-thinking concepts and principles of action.

The current volume may be seen as funnel-shaped, starting from the general and moving to the specific, beginning with theory and moving on to practice. The first major part of the book (Chaps. 1–4) sketches the environmental and empirical backdrop culminating in the need for an enhanced systemic leadership approach.

The second major part (Chaps. 5–10) comprehensively presents the *Holistic School Leadership* approach and guidelines for its implementation.

Thus, in Chap. 1, we broadly describe the rationale for why the topic of school leadership profoundly deserves further examination from new perspectives, at the current crossroads of the twenty-first century. In particular, examination of holistic approaches is required. Next, Chap. 2 explains systems thinking in general terms, providing the reader with the essentials of systems-thinking “language.” We present some of the definitions for systems thinking that have been proposed over the years, and we trace its initial development in some important disciplines to contextualize its application in the education domain. Chapter 3 concentrates on systems thinking as a management approach, which comprises a focal point of this book. Specifically, this chapter reviews some of the main approaches that have been suggested for implementing systems thinking when dealing with complex real-world situations, pointing to their implications for school leadership. Chapter 4 focuses on the connections between systems thinking and school leadership, which have been relatively under-investigated to date. This paucity of prior literature on the connections between systems thinking and school leadership calls for an expansion of existing knowledge.

At the start of Part II, Chap. 5, which may be seen as the heart of this book, presents our proposed *Holistic School Leadership* approach, which involves school leaders’ regular applications of the systems view and ongoing performance at the systems level. Chapter 6 highlights four characteristics of systems thinking in school leadership, which comprise the practical ways in which principals can lead schools through the systems-thinking framework. Thereafter, the book turns to the subject of *Holistic School Leadership* development in school principals, which may be seen as consisting of two sub-domains. Chapter 7 presents the first sub-domain—the sources of *Holistic School Leadership*—which are the mechanisms that facilitate development of this approach among principals. Chapter 8 discusses the second sub-domain—the developmental process that school leaders undergo over the years—while acquiring the ability to perform at the *Holistic School Leadership* level.

Chapter 9, applications of *Holistic School Leadership* for policy makers are offered. Toward this end, we explore opportunities to apply *Holistic School Leadership*, ranging from the early preparation of future school leaders to on-the-job training of highly experienced principals. In addition, we suggest practical ways to develop *Holistic School Leadership* among aspiring and currently performing school leaders along their career lifespan. Chapter 10 concludes with detailed guidelines and practical uses for implementing the *Holistic School Leadership* in school leaders’ work. Hopefully, this book will be used by principal educators, policy makers, and especially school leaders themselves who wish to meaningfully improve contemporary educational leadership and thereby today’s schools.

School leadership is inseparable from the school context in which it is situated, and leadership frameworks are often adjusted to the specific characteristics of local needs. *Holistic School Leadership* is presented in this book as a global idea.

However, school leaders experience various challenges and opportunities and are required to adjust its principles to the context of the school organization and its environment, interpreting the framework of *Holistic School Leadership* according to their schools' circumstances.

Haim Shaked
Chen Schechter

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Part I
The Environmental and Empirical
Backdrop to Developing an Enhanced
Systemic Leadership Approach

Chapter 1

The Need for *Holistic School Leadership*

School is an inherently complex organization, involving a vast multiplicity of interacting activities, people, and purposes. As such, it often runs up against basic conflicts: Its operation can pursue myriad courses of action, each with particular strengths and weaknesses, and its different stakeholders may uphold diverse or even incompatible desires, views, expectations, and demands. Leading any school, with its inexorable complexity, has never been an easy job. However, practitioners and researchers alike agree that current-day school leaders face particularly complex difficulties. Walker and Qian (2006) wrote figuratively: “The dominant modern myth portrays the school principal as an underpaid workhorse tangling with the conflicting demands of instructional leadership, bureaucracy, official mandates and adverse interest groups” (p. 298). Eller (2010) added that today’s public categorically expects schools and their leaders to be able to work through this chaos and nonetheless operate in a focused and effective manner.

1.1 Contemporary Challenges for School Leaders

The challenges faced by today’s school leaders are varied, stemming both from within and without the schools. Many scholars noted that school leaders in different countries deal with substantially different challenges (e.g., Bush and Oduro 2006; Onguko et al. 2012). More than ever, leaders are expected to be the change agents of their organizations (Clark 2007). In particular, contemporary school systems’ prevalent “era of accountability” poses high expectations from school leaders (Shepard 2008; Taubman 2009). In this outcome-based accountability environment, the staff in each school is held directly accountable for ameliorating its students’ academic progress and outcomes (Hannaway and Hamilton 2009). Understandably, as the chief figure at the helm, the school leader is thus held personally accountable for bringing about measurable student achievement and for demonstrating bottom-line results (Hamilton et al. 2007).

To accommodate these accountability demands, school leaders must meet almost overwhelming requirements for expertise across a wide gamut of leadership capacities that were previously not under their purview (see Schechter 2011). The accountability movement has thereby led to a significant change in the meaning of school leadership. Not too long ago, principals were considered as organizational administrators who were mostly responsible for areas such as keeping students safe, overseeing day-to-day operations, budgeting, and maintaining facilities. Operational tasks such as ordering supplies and creating bus schedules were common daily tasks. Today, although their traditional practical duties have not been transferred to other staff members, principals are now additionally expected to assume deep involvement in teaching and learning issues (Neumerski 2012; Rigby 2014). Today's principals are expected to act as the school's topmost instructional leader, by promoting best practices in teaching and learning to ensure students' academic success (DiPaola and Hoy 2008). Yet the multiple competing managerial demands on school principals often hinder their ability to focus squarely on developing effective learning structures and processes that positively foster student performance.

Moreover, contemporary students and parents differ from their predecessors. Students use rapidly evolving and changing technologies and participate actively in an increasingly diverse, globalized, and media-saturated society. In this fast-changing 21st-century world, schools that merely produce "more of the same" education will not suffice to address the challenges that students will be confronting in the future (Key 2010). Today's schools must provide students with the specialized skills and adaptability that are necessary for occupational success in the communities and workplaces of the coming decades (Lemley et al. 2014). Moreover, alongside the affordances of technological advances, parents today frequently perceive their children's vast exposure to globalized western media—with its glorified materialism and unfettered access to deleterious influences—as a threat to parental authority. Therefore, families and communities today are looking even more toward schools as a socializing agent to help instill humanistic values and thus also prepare students to thrive as healthy civilized individuals living in the future technology-rich world. Altogether, these rapid technological and sociocultural changes necessitate school leaders to adapt their schools to the nature of our time, making their schools not only better than before, but also different (Pellegrino and Hilton 2012; Stevens 2012).

As an inevitable consequence of the constant entreaties from communities and from policymakers to demonstrate measurable bottom-line student achievements that adequately address 21st-century academic and social demands, school leaders today typically encounter a plethora of top-down politically inspired reform initiatives, which aim to counter this complexity (Addonizio and Kearney 2012; Anderson et al. 2015). Indeed, policymakers are in such constant pursuit of a successful reform blueprint that recurrent attempts at reform have become a mainstay of current education systems (Robinson and Aronica 2015). These reform efforts are often layered on to existing social relationships between school staff that are rarely taken into account when enacting reform (Daly et al. 2010). Dealing with

wave after wave of reforms—which sometimes even conflict with their predecessors—has become a challenge in itself in the educational work of today’s school leaders.

Within this reality, the traditional tools at school leaders’ disposal are simply not enough. They do not provide a sufficient response to today’s multiplicity of difficulties and expectations. School leaders sorely need comprehensive theoretical frameworks that are accompanied by complementary strategies to guide them toward success. The current book, suggesting such a new complementary approach that encompasses both theory and practice for school leadership, joins other important recent attempts to answer this noticeable and urgent contemporary need.

1.2 The Need for Holistic School Leadership Approach

The need for complementary school leadership approaches is evident in today’s shortage of new, skilled school principals. In the last 15 years, public schools around the world have been facing a critical deficit in quality candidates for principal positions in urban, suburban, and rural schools (Barty et al. 2005; Pijanowski and Brady 2009). The alarming decline in the number and quality of educational leadership candidates has been attributed to the retirement of aging principals, to increased principal mobility, and in particular to the prevalent reform-plagued and results-based accountability environment, which undermines the capacity of incoming and outgoing principals to lead their schools (Fink and Brayman 2006; Gajda and Militello 2008). Without new theoretically grounded school leadership approaches that explicitly train school leaders to succeed in their highly complex work as educational leaders while facing accountability-based demands, recurrent policymaker reforms, and pressures from families and communities, the shortage of quality candidates for principal positions will inevitably continue to worsen.

Yet, in recent years, researchers and field personnel have criticized principal preparation programs for failing to adequately train prospective educational leaders for their roles, claiming that these programs do not produce qualified principals who are capable of running schools successfully (Darling-Hammond et al. 2007; Schechter 2011). An often-heard argument is that typical existing preparatory programs are out of touch with the quickly fluctuating realities of what it takes to run today’s schools and therefore simply do not train principals to deal with the complexity of contemporary challenges (Hess and Kelly 2007).

What kind of new strategies do today’s school leaders need to succeed? Too often, school leaders are peddled simplistic solutions to complex situations. Unfortunately, as so many leaders have discovered, these panaceas rarely work, because they are not sufficiently holistic. By focusing on the parts rather than on the whole and assuming that there is one best solution that fits all circumstances, school leaders do not adequately consider the complex interactions among various parts in the system. Hence, without systems thinking, principals may find it difficult to face the contemporary growing complexity, change and diversity.

Presumably, school leaders' lack of familiarity with systems thinking may be attributed to the lack of theoretical and practical knowledge available in the literature to date concerning systems thinking's important connections with school leadership (see Chap. 4). To address this lacuna, the current book presents the *Holistic School Leadership* approach—whereby school leaders lead schools through the systems-thinking framework, thus bridging the theoretical and the practical in a comprehensive complementary model. The aim of the next chapters is to provide the reader with the background information needed to understand fully the *Holistic School Leadership* approach.

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Chapter 2

Definitions and Development of Systems Thinking

The goal of this chapter is to explain what systems thinking is—to furnish the reader with the basics of systems-thinking “language.” Considering that the first systemic ideas were expressed by Aristotle, who coined the dictum that a whole is more than the sum of its parts (*Metaphysica* 10f-1045a), systems thinking can be said to date back to ancient Greek philosophy. Our focus, however, lies on the contemporary meaning of systems thinking. Accordingly, our review concentrates on the development of systems thinking over the last century, while tracing its earlier influences. Indeed, as seen below, deeper analysis of the roots of systems thinking reveals that its emergence in the last century represented a powerful shift in how systems were conceptualized—a shift that forsook the previously dominant approach of reductionism.

The scattering of the literature pertaining to systems thinking among various fields hinders any one accurate definition of systems thinking. Inasmuch as no single central ongoing discussion exists concerning the construct, systems thinking has not secured a well-accepted single definition. Hence we first present and discuss several systems-thinking definitions that sprouted in different domains, and we then attempt to draw some central conclusions about the major meanings of systems thinking, as a foundation for the educational approach proposed in the current book.

2.1 Definition of Systems Thinking

Simply, systems thinking is a way for human beings to understand systems. Unfortunately, the word “system” is one of the most loosely used expressions employed in everyday discourse as well as in academic literatures. For our purposes, a system can be defined as a functionally related assemblage of interacting, interrelated, or interdependent elements forming a complex whole. The variety of systems falling under such a definition is endless, encompassing natural systems such as the human body, the earth, and space; human-made systems ranging from

tiny hi-tech chips to global commercial conglomerates; conceptual systems like ethics and policy; and many more.

What is important to emphasize about systems thinking is that it examines systems holistically. It does not try to break systems down into parts in order to understand them; instead, it focuses attention on how the system's constituent parts act together in networks of interactions as well as on how systems work over time and within the context of larger systems. Put differently, systems thinking provides a means of seeing the system as an integrated, complex composition of many interconnected components that need to work together for the whole to function successfully.

Systems thinking is a way of thinking about systems of all kinds. It is not a discipline with defined borders but rather comprises an interdisciplinary conceptual framework that can be adapted to an exceptionally wide range of areas. This advantageous flexibility and versatility for systems thinking, however, has led to a wide range of definitions for it. Indeed, there is no single agreed-upon definition for systems thinking. Forrester (1994) even claimed that "systems thinking is coming to mean little more than thinking about systems, talking about systems, and acknowledging that systems are important. In other words, systems thinking implies a rather general and superficial awareness of systems" (p. 251). Nevertheless, for years, numerous intellectuals and researchers around the world have attempted to devise definitions and refine explanations for systems thinking. Here are some such attempts made by scholars in recent decades, presenting in chronological order:

- A discipline for seeing wholes. It is a framework for seeing interrelationships rather than things, for seeing patterns of change rather than static 'snapshots.' It is a set of general principles... It is also a set of specific tools and techniques (Senge 1990, p. 68).
- The art and science of making reliable inferences about behavior by developing an increasingly deep understanding of underlying structure (Richmond 1994, p. 141).
- A way of thinking about, and a language for describing and understanding, the forces and interrelationships that shape the behavior of systems. This discipline helps us to see how to change systems more effectively, and to act more in tune with the natural processes of the natural and economic world (Senge et al. 1994, p. 6).
- Seeing beyond what appear to be isolated and independent incidents to deeper patterns. You recognize connections between events, to better understand and influence them (O'Connor and McDermott 1997, p. 7).
- An epistemology which, when applied to human activity, is based upon the four basic ideas: emergence, hierarchy, communication, and control as characteristics of systems. When applied to natural or designed systems, the crucial characteristic is the emergent properties of the whole (Checkland 1999, p. 318).
- The ability to see the world as a complex system, in which we understand that 'you can't just do one thing,' and that 'everything is connected to everything else' (Sterman 2000, p. 4).

- The art of systems thinking involves the ability to represent and assess dynamic complexity (e.g., behavior that arises from the interaction of a system's agents over time), both textually and graphically (Sweeney and Sterman 2000, p. 2).
- Utilizing modal elements to consider the componential, relational, contextual, and dynamic elements of the system of interest (Davidz 2006, p. 119).
- System thinking—includes holism, an ability to think about the system as a whole; focus, an ability to address the important system level issues; emergence, recognition that there are latent properties in systems; and trade-offs, judgment and balance, which enable one to juggle all the various considerations and make a proper choice (Engineering Systems Division 2007, p. 6).
- Systems thinking is thinking, scientifically, about phenomena, events, situations, etc., from a system perspective, i.e., using systems methods, systems theory and systems tools. Systems thinking, then, looks at wholes, and at parts of wholes in the context of their respective whole. It looks at wholes as open systems, interacting with other systems in their environment (Hitchins 2007, p. 17).
- Systems thinking can be thought of in two ways. First, and the obvious one, is to think about systems... A second and crucial way to exhibit systems thinking is to think from systems (Boardman and Sauser 2008, p. xix).
- The art of simplifying complexity. It is about seeing through chaos, managing interdependency, and understanding choice (Gharajedaghi 2011, p. 335).
- A set of synergistic analytic skills used to improve the capability of identifying and understanding systems, predicting their behaviors, and devising modifications to them in order to produce desired effects. These skills work together as a system (Arnold and Wade 2015, p. 675).

Although these explanations do reveal some differences, it is quite clear that, overall, definitions of systems thinking share two common features. Namely, systems thinking may be conceived as involving the following two main meanings, which complement each other: On the one hand, systems thinking *rises above the separate components to see the whole system*, and, on the other hand, systems thinking *views each separate component as a part of the whole system*. These two central meanings of systems thinking—seeing the whole beyond the parts and seeing the parts in the context of the whole—are used in this book as the foundation upon which to examine the characteristics, sources, and development of systems thinking.

TWO MAJOR MEANINGS SHARED BY SYSTEMS-THINKING DEFINITIONS:

- Seeing the whole beyond the parts
- Seeing the parts in the context of the whole

2.2 Systems Thinking Versus Reductionism

Systems thinking, as it developed in the last century, is a major departure from the longstanding way in which scholars traditionally attempted to understand systems. In particular, systems thinking as it emerged in the 20th century stands in staunch contrast to its predecessor—the scientific reductionist approach that pervaded Western thinking since the time of René Descartes in 17th century Europe.

2.2.1 *Reductionist Paradigms for Systems*

Considered to be one of the most influential thinkers in Western history, Descartes (1985) developed the notion of reductionism in the 1600s as an approach for understanding systems by reducing them to their simpler basic parts. According to this approach, the best strategy for examining any complex entity would be to attempt to explain its smallest possible component entities, thus aiming to explain macroscopic properties in terms of its microscopic constituents. In other words, the reductionist answer to every *What is this?* question would always be “*This*” is what it is made of.

Using such reductionist methodology, Descartes asserted that the world was like a machine, whose pieces could be taken apart and put back together in order to understand its underlying mechanisms and its larger picture. Likewise, Descartes (1985, pp. 58–59) compared a healthy person’s body to a well-made clock, “constructed with wheels and weights... a kind of machine equipped with and made up of bones, nerves, muscles, veins, blood and skin.” In turn, he compared a sick person’s body that “suffers from dropsy, for example” to a badly constructed clock that tells the wrong time. Both the broken clock and the ill person were described as deviating from their natural, normative, smoothly working condition:

When I consider the purpose of the clock, I may say that it is departing from its nature when it does not tell the right time; and similarly when I consider the mechanism of the human body, I may think that, in relation to the movements which normally occur in it, it too is deviating from its nature (Descartes 1985, pp. 58–59).

The reductionist perspective became one of the most central, vastly accepted beliefs of the modern era (Ahn et al. 2006). Thus, the entire universe, as well as everything in it, came to be regarded as a clockwork-like mechanism. Scholars upheld that to understand anything, human beings need only to investigate its separate parts and then put them together correctly. Indeed, according to reductionism, the only meaning of research was analysis, which is the process of breaking a complex thing into smaller parts in order to gain a better understanding of it. Recognition of the smallest components in isolation from each other was believed to

enable the analyst to know the sum total; the analyst's only task would be to reassemble all of the components in order to recreate the whole (Mazzocchi 2008).

ACCORDING TO REDUCTIONIST THINKING:

The whole can be broken down into its parts and put back together from its parts.

Parts are related through a simple cause-effect relationship.

Thus, its defining characteristics exist in its parts.

In the modern era, reductionism came to dominate Western thought, manifesting itself in all areas of Western knowledge. Physicists, for example, stated that all physical objects could be broken down into indivisible particles of matter called atoms. Chemists held that the indivisible units of materials were the elements, and biologists considered the cell as the indivisible unit of organisms. Analysis became so ingrained that even today the words thought and analysis are often considered synonymous (Rosenberg 2006).

As time passed, during the first half of the twentieth century thinkers began to concede that the reductionist paradigm was insufficient in many cases when attempting to understand particular systems. Sometimes systems defied reductionist analysis because by concentrating on the system's parts, analysts missed the whole, which often took on a form that was not recognizable from the reassembled parts. A paradigm shift was required to account for these cases, and in what may be seen as an antireductionist development (Baetu 2012), a more holistic perspective emerged: systems thinking.

2.2.2 Holistic Paradigm for Systems

In contrast to the reductionist approach, systems thinking is a holistic perspective—claiming that the whole is not the *sum* of its parts but rather is a product of the parts' *interactions*. This systems-thinking approach upholds that the whole emerges from the interactions that transpire among its parts, and once it has emerged, it is that very whole that gives meaning to the parts. Thus, the car gives meaning to the engine, gearbox, and brakes; and the family gives meaning to the roles of parents, children, and grandchildren. Accordingly, the only way to fully understand a system is to understand its parts *in relation to* the whole, because the system's defining characteristics indeed comprise the characteristics of that very whole, which cannot

be found in the isolated parts. Importantly, once the system is analyzed—i.e., taken apart—these defining characteristics of the whole get lost.

ACCORDING TO SYSTEMS THINKING:

The whole emerges from the interactions among its parts.

Parts are related through complex multiple influences.

Thus, its defining characteristics do not exist in its parts.

Importantly, the systems-thinking paradigm differs from the reductionist paradigm in terms of how parts interact or interrelate within the system. Just as reductionist scientists were of the opinion that everything could be reduced to indivisible parts, they also believed that relationships among parts were reducible to one simple relationship: that of cause and effect, emphasizing the relation between a first event (the cause) and a second event (the effect). According to systems thinking, the many interactions that transpire within each system cannot be reduced to a single cause-effect relationship. The first event is likely to contribute to the second event, but many additional events are also seen as contributing to that second event. Thus, all explanations for the second event should take into account the influence of multiple factors. Systems thinking thereby diverged from the predominant reductionist paradigm by upholding that the explanation for any phenomenon within a system cannot be too simplistic, and that the impact of the environment cannot be ignored.

The concept of “holism” can be seen as the epistemological basis of systems thinking. The term “holism” was coined by Jan Smuts in his 1926 book, *Holism and Evolution*, defined as the “fundamental factor operative towards the creation of wholes in the universe (Smuts 1926, p. 88). In its broadest sense, holism is the idea that systems function as wholes, having an existence other than, and beyond, the mere sum of their parts. The parts of a system operate in intimate interconnections, with the interactions among them creating the whole. Therefore, the functioning of a system cannot be fully understood solely in terms of its component parts, and the parts can only be understood in terms of their contribution to the significance of the whole system. This concept of holism facilitated the development of systems thinking several years later. Providing a more holistic perspective for coping with problems of complexity, systems thinking evolved in two main directions: as a method for scientific investigation, and as a means for dealing with real-world problems. These two directions are described in the following two sections.

2.3 Systems Thinking as a Method for Scientific Investigation

Ludwig von Bertalanffy, an Austrian-born biologist (1901–1972), was one of the pioneers of systems thinking. It is not surprising that systems thinking evolved among biologists, because biology is concerned with the study of living organisms, which are actually living systems. Inasmuch as the study of biology essentially comprises a study of systems, the encounter of systems thinking with biology was particularly fruitful.

At one point in his work, von Bertalanffy (1933) resisted the reductionist paradigm as a panacea for investigating all scientific problems. His challenge to reductionism first arose when he addressed the conflict between mechanists and vitalists regarding the definition of life—the question of what separates living matter from non-living matter. In fact, he disagreed with both schools of thought. Mechanists, on the one hand, claimed that what we call life is simply epiphenomena resulting from physical and chemical processes. The mechanists believed that all natural phenomena could be explained by physical factors. Thus, they considered living things to be like machines or artifacts, composed of parts that have no substantive connections among them. Mechanists attributed the source of an apparent object's activities not to the whole itself but rather to its parts, or to an external influence on the parts. Vitalists, on the other hand, believed in a life force that animated all living matter. Thus, vitalists upheld that the functions of a living organism stem from a vital principle, which was often referred to as the “vital spark,” “energy,” or “*élan vital*” that some equate with the “soul”. This vitality of life was considered to be distinct from biochemical reactions, asserting that life processes are not explicable by the laws of physics and chemistry alone (Banchetti-Robino 2011; Lash 2006).

Although von Bertalanffy did not believe in the vitalist idea of an unperceivable life force, he also resisted the mechanists' attempt to define life solely at the molecular level, without taking into account those molecules' organization and webs of interrelationships. In his opinion, both mechanists and vitalists were making the same mistake by attempting to define life solely at the molecular level. As their method, neither group was taking into account the complexity of how those molecules were organized together and how they interrelated with one another.

According to von Bertalanffy (1933), to answer the question of what separates living matter from non-living matter, one needs to understand not just the microscopic particles, but also how those particles influence each other within the whole. Thus, “we must therefore try to establish a new standpoint, which... takes account of organic wholeness, but... treats it in a manner which admits of scientific investigation” (p. 46). His proposed new standpoint was to espouse systems thinking as the scientific method of choice:

Every organism represents a system, by which term we mean a complex of elements in mutual interaction. From this obvious statement the limitations of the analytical and summative conceptions must follow. First, it is impossible to resolve the phenomena of life

completely into elementary units; for each individual part and each individual event depends not only on conditions within itself but also to a greater or lesser extent on the conditions within the whole, or within superordinate units of which it is a part. Hence the behavior of an isolated part is, in general, different from its behavior within the context of the whole... Secondly, the actual whole shows properties that are absent from its isolated parts (1933, pp. 11–12).

From within the domain of biology, von Bertalanffy used his conceptual framework of systems thinking to explain organisms. According to his explanation, every organism is a whole that emerges from the relationships among its parts, which affect each other through complex networks of interactions. The parts themselves do not exhibit the same properties as the whole that arises through interactions among them; the parts are smaller and simpler, while the whole is a living creature.

Later, von Bertalanffy (1968) expanded his position about the definition of life into a wide scientific approach that stood in clear contrast to scientific reductionism, claiming that the only way to fully understand a system is to understand its parts in relation to the whole. Every phenomenon must be viewed not only from the perspective of its components but also from the perspective of the relationships among these components. Thus, von Bertalanffy explicitly distinguished between the traditional scientific method and the new systems-based scientific method that he proposed:

Classical science in its diverse disciplines, be it chemistry, biology, psychology or the social sciences, tried to isolate the elements of the observed universe—chemical compounds and enzymes, cells, elementary sensations, freely competing individuals, what not—expecting that, by putting them together again, conceptually or experimentally, the whole or system—cell, mind, society—would result and be intelligible. Now we have learned that for an understanding not only the elements but their interrelations as well are required (1968, p. XIX).

2.4 Applied Systems Thinking

While von Bertalanffy, from his perspective as a scientist, saw systems thinking mainly as a method for scientific investigation, in the 1940s systems thinking began to receive increasing attention as a potentially valuable means for addressing real-world problems related to World War II (Jackson 2009). In Britain, the efforts of military planners in this regard resulted in the formation of a formal discipline—*operational research*—for dealing systemically with the application of advanced conceptual methods in real-world situations. Likewise, analysts associated with the United States Air Force were tasked with examining what equipment to produce and develop, leading to the emergence of *systems analysis*, which is the process of learning an organization in order to identify its objectives and create systems and procedures that would achieve them effectively (Bentley and Whitten 2007). Moreover, *systems engineering*—a discipline in engineering that focuses on how to design, create, operate and manage complex engineering systems involving many

interacting components—can also be traced back to that time period. After the war, these methods were more widely applied to problems in industry and society. It was pioneered in the USA at Bell Telephone Laboratories to meet the networking challenges faced in the communications industry, then it spread to the space and energy industries, and subsequently to other industries (Jackson 2003).

Decades later, Checkland (1981), recognizing similarities between these different approaches developed during and immediately after World War II, labeled this kind of mathematically precise systems work *hard systems thinking*. According to hard systems thinking, real-world problems can be described as follows: There is a desired state, S1, and a current state, S0, and there are alternative ways of getting from S0 to S1. Problem solving consists of defining S1 and S0 and selecting the best ways to reduce the gap between them. After formulating the problem and screening the alternatives, a model, primarily a mathematical model, is built and used to capture as accurately as possible the workings of the system that underlies the problems being investigated. The model is convenient for analysis; thus, the final decision results from predicting consequences and ranking alternatives.

The “hardness” of hard systems thinking is not a characteristic of the system to be addressed; there is no distinction between “soft” and “hard” systems. Hardness characterizes the way of thinking about the system (Jackson 2003). Hard systems thinking assumes the existence of a clear, almost mathematical problem definition: A gap exists between the desired future state and the present state, and the problem is how to make the gap disappear (about soft systems methodology see Sect. 3.4). Because of its simplistic and inflexible nature, hard systems thinking has been successful for dealing with structured, technical problems like developing computer systems that are technically efficient and effective as information providers. Criticism, however, has been leveled at the inability of hard systems thinking to handle real-world management’s unstructured or “fuzzy” problem situations, where it is impossible to distinguish exactly which elements are contributing to the problem situation, to identify the relevant interactions among them, and to quantify their influence. In such situations, different stakeholders may have different opinions or perspectives that are equally legitimate. Thus, today, despite its many achievements and strengths, hard systems thinking is generally considered to be limited in its range of applications. Nevertheless, hard systems thinking was a breakthrough in terms of applying systems thinking to real-world problems (Jackson 2010). Newer approaches advocating applied systems thinking, which grew out of hard systems thinking and improved upon it, are reviewed in the next chapter.

Taking a broader view, the generational change from reductionism to systems thinking can be linked to the end of the Machine Age. This era nearing the end of the Industrial Age was associated mostly with the late 19th century and early 20th century and the two world wars. The end of the Machine Age coincided with the beginning of the contemporary era of high technology, which demanded solutions to much less mechanical and much more complex tools compared to the machines of the past. In parallel, systems thinking evolved naturally within this environment, thereby enabling effective coping with the emerging complexity of high technology.

2.5 Practical Uses of Systems Thinking

The current section reviews several contemporary examples of systems-thinking implementation to manage complex situations, as described in the research literature. These examples illustrate the practical benefits of systems thinking in a wide range of fields such as public health, information systems, enterprise risk management, tourism, transportation, and telecommunications.

Leischow et al. (2008) described how systems thinking was used by public health agencies to effectively minimize the risk of the H5N1 Avian influenza (bird flu), which is deadly to humans. So far, there is no evidence of sustained human-to-human transmission of this virus; however, the virus is of paramount concern because it can rapidly spread if mutations allow it to easily pass from human to human. Pandemic influenza prevention requires cooperation across a variety of disciplines and fields, including global surveillance to catch new outbreaks, rapid laboratory analysis of new viral strains so that effective medications can be developed, and creation of broad communications and informatics infrastructures so that communities can prepare and respond effectively. Each separate activity to address pandemic influenza is necessary but insufficient in itself. Public health agencies worldwide used systems thinking to reduce the risk of a future communicable-disease pandemic to the smallest possible degree, seeking to bring together those who are critical to the discovery, development, and delivery of the knowledge, products, and services that can most effectively prevent and treat communicable disease.

Van Mai and Bosch (2010) demonstrated the benefits of systems thinking in the development of the tourism industry in the Cat Ba Reserve of northern Vietnam. Tourism is an open, dynamic, and complex system, which includes many interacting components and involves diverse stakeholders, each of whom holds different management objectives. The development of the popular tourist destination of Cat Ba Reserve was threatened by various causes such as overuse of underground water, lack of skilled workers, and poor infrastructure. Systems thinking was an effective tool for explaining the complexities of the tourism system. It helped to simplify, clarify, and integrate isolated problems associated with the tourism industry, and provided a mechanism for group learning and decision making to achieve desirable outcomes. In less than 3 years, the Cat Ba Biosphere sustainability became a notable project in Vietnam, involving senior politicians from district to central government, academics, donor organizations, field officers and managers at various levels of the government as well as villagers and commune residents.

Management in the field of information systems may offer a natural arena for the practical application of systems thinking. For example, the use of systems thinking to enhance the effectiveness of a student record system at a UK university was explored by Bentley et al. (2013). Their research indicated that systems thinking enabled those employees who were involved in the record system's modification to view its design and implementation as a holistic system. These employees ability to critically reflect upon broad and complex human, technological, and organizational

issues from different perspectives thereby helped them identify creative solutions. The final outcome was the successful implementation of an improved student record system within the context of the university's information systems development process.

Another empirically explored practical application of systems thinking was for the purpose of improving organizational resilience in British service organizations in the realm of building maintenance and repairs services. Organizational resilience is the ability of the organization, irrespective of its type, to effectively rebound from adversity and thrive. The construct of organizational resilience is embedded in a set of individual level attributes and organizational level processes. The study recently conducted by Jaaron and Backhouse (2014) showed that employment of systems thinking in two service organizations in the UK operationalized two-dimensional determinants for improving organizational resilience: an organically structured organization (i.e. organizational level), and highly affectively committed core employees (i.e. individual level).

Systems thinking may be used also for enterprise risk management. Enterprise risk management processes are used to identify, assess, communicate, and manage the multitude of risks facing an organization. Lee and Green (2015) asserted that although existing enterprise risk management frameworks do provide much needed guidance on how an entity can manage risks, events such as the 2008 financial crisis revealed that implementation of these traditional frameworks in isolation is insufficient. Thus, Lee and Green advocated incorporation of a systems-thinking perspective into traditional enterprise risk management frameworks. The systems-thinking approach helps managers understand the business organization from a holistic world-view perspective, which includes the enterprise's fit with and relationship to its environment.

Andrew and Petkov (2003) pinpointed the advantages of using systems thinking in planning a rural telecommunications infrastructure in South Africa. Telecommunications infrastructure is generally considered as merely a technological system, and its planning is often executed solely from a technological point of view, focusing mainly on advancing and improving the technology. For the most part, planners do not take into account the possible indirect social benefits of providing telecommunications to rural areas, which are essential for the development of the area. The researchers found that the rural telecommunications system in developing countries is not just a technological system but a complex system of people and technology interdependent on other systems and subsystems, spanning multiple fields like the sociological, cultural, political, and economic domains. Thus, planning it through the systems-thinking approach yielded far better results for all concerned than linear planning approach.

Similarly, O'Kane (2015) pointed out the benefits of using systems thinking by product development teams for transportation products. Traditionally, vehicle design teams' scope of responsibility is limited to the vehicle itself, including all its own systems, subsystems and other elements. Yet, vehicle designers' focus only on the production of the vehicle to which they are assigned does not allow them to consider aspects of the environments in which their products will operate.

Specifically, designers usually do not take into account contemporary transportation challenges such as increasing population, various types of pollution, and urban density. Integrating systems thinking into the vehicle design process could manifest a significant shift toward the development of more ecologically suitable products environment, because systems thinking gives product development teams essential tools for a deeper understanding of the forces at play that influence human interactions with systems (see also Darzentas and Darzentas 2014).

These examples, and many others in the literature, indicate that systems thinking delivers better results. Considering that most real-world situations are complex, a holistic lens enables more effective coping with these situations, unraveling the existing complexity. Optimizing the entire system as a whole, and the system's elements in the context of the entire system as whole, yields better outcomes with fewer unintended consequences than analyzing and improving each element on its own.

2.6 Conclusion

The systems-thinking approach advocates viewing the issue at hand as a whole and emphasizing the interrelationships among its components rather than the components themselves. Despite the absence of a consensual definition across the multifaceted disciplines that have deliberated this construct, we identified two main meanings of systems thinking—*seeing the whole beyond the parts* and *seeing the parts in the context of the whole*—which are used in this book to examine the characteristics, sources and development of systems thinking in the specific case of school leaders.

Systems thinking, which was first suggested as a method for scientific investigation, later underwent extensive discussion as a means of facing real-world problems. As an investigative methodology, systems thinking claims to offer a broad view, which enables more in-depth and more accurate understanding of phenomena. Based on the assumption that this scientific expertise may also permit coping with real-world situations, applied systems thinking was proposed as a means for gaining deeper understanding of reality and thus for dealing effectively with various assignments and challenges, and is currently used in a wide range of areas.

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Chapter 3

Systems Thinking Methodologies

Given the utility of systems thinking for real-world situations, presented in the previous chapter, systems thinking has been proposed as a way to allow managers to deal effectively with contemporary challenges. Today's managers are asked to tackle a much greater diversity of challenges than in the past, which often arise in richly interconnected problem situations. Claiming that systems thinking enables management over situations characterized by dynamic change and complexity, some authors have recommended systems thinking as a beneficial management approach (Brown 2012; Jolly 2015; Wilson and Van Haperen 2015). The current chapter devotes special attention to this topic, which comprises a focal point of this book in light of the continuously dynamic and complex system facing school principals. How can systems thinking be used as a management approach? A rich array of different models, methods, and techniques has been suggested for implementing systems thinking in management contexts. This chapter presents a historical review of a few of the best-known approaches regarding applied systems thinking that have been suggested over the years, considering also their implications for school leaders.

3.1 System Dynamics

One of the most prominent scholars who recommended systems thinking as a management approach was Forrester (1961, 1968), the founder of *system dynamics*. The well-accepted system dynamics model upholds that the multitude of variables existing in any system are causally related in feedback loops, which consist of outputs of the system that are routed back as inputs, as part of a circuit of causation. The feedback loops themselves interact; it is the very interactions among these feedback loops that constitute the system's structure and determines its behavior. This notion of feedback loops challenges the simplistic reductionist relationship

between cause and effect, where the first event is considered responsible for the second one. From the feedback-loop perspective, the first event does influence the second, but the second event also influences the first, thereby leading to a circular series of events. Thus, according to system dynamics, causation in systems is less straightforward and salient, necessitating a broader understanding of the system as a whole.

The aim of system dynamics is to provide managers with a full understanding of the feedback-loop structure of their systems in order to intervene in ways that ensure behaviors in keeping with the managers' goals. For this purpose, system dynamics places much of its emphasis on the use of models and modeling techniques to study complex management issues. The modeler attempts to first identify the patterns of behavior being exhibited by important system variables and then to build a model that can mimic those patterns. Once a model has this capability, it can be used as a laboratory for testing policies aimed at altering a system's continuing behavior in desired ways. Thus, system dynamics models offer a visualization of systems' dynamic behavior over time.

Although the system dynamics approach enhances understanding of the long-term behavior of complex systems, it is known mainly for its development of computer-based simulation models that can represent the behavior of real-world systems. The growth in the power of the digital computer in the 1960s inspired Forrester when he developed system dynamics. Believing that the complexity of many systems' structures was too difficult for the human mind to grasp, Forrester claimed that such systems could only be represented accurately in a computerized model. Only a computer is able to trace the multiple interactions of innumerable variables. Especially, the objective computer was considered important to overcome the counterintuitive directions that sometimes characterize feedback loops. In the decades since system dynamics was conceived, various system dynamics software packages have been optimized for simulation models. Running "what if" simulations to test the effects of certain decisions or policies on such a model can greatly aid in understanding how the system changes over time and which future developments and implications are expected.

3.1.1 System Dynamics in the Learning Organization

Although system dynamics was developed by Forrester, its methods became popular following publication of Peter Senge's bestseller (1990) *The Fifth Discipline: The Art and Practice of the Learning Organization*. In this book focusing on increasing the effectiveness of business companies, Senge spoke in general about systems thinking, without specific reference to system dynamics; however, the concepts and "laws" of systems thinking discussed in this book reflects the system-dynamics framework, emphasizing the importance of feedback loops.

One of this book's innovations is the concept of the "learning organization"—an organization that continuously provides employees with the opportunity to learn,

encourages their learning, and considers learning as an investment, which aims to increase the success and capacity of the organization. Learning organizations are skilled at creating, acquiring, and transferring knowledge, and at modifying behavior to reflect new knowledge and insights. As such, learning organizations differ from other organizations in that they see learning as the dynamo, the trigger, for change and development.

Senge went on to argue that systems thinking is the linchpin of the learning organization. He asserted that the mastery of five basic disciplines distinguishes a learning organization from more traditional organizations. These disciplines consist of systems thinking, personal mastery, mental models, a shared vision, and team learning. Of those, systems thinking is the discipline that integrates all disciplines, fusing them into a coherent body of theory and practice. According to Senge, in the modern era of rapid change, only those organizations that are indeed learning organizations, which are by definition flexible and adaptive, will excel. Moreover, inasmuch as productivity is mostly a function of knowledge generation and information processing, only learning organizations can remain competitive. Senge's book confirmed the essentiality of systems thinking for contemporary managers.

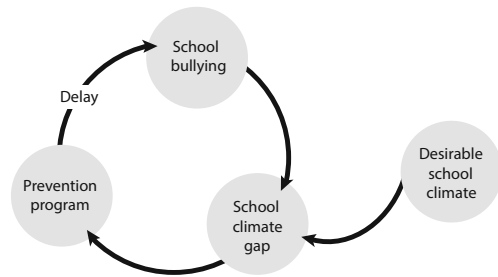
Putting the system dynamics perspective into practice, Senge identified certain system archetypes, which are simple stories of management problems that often occur in organizations. The relatively small number of classic system management archetypes identified by Senge (1990)—such as “shifting the burden,” “escalation,” and “eroding goals”—demonstrates shared patterns that show the commonalities characterizing a large variety of management situations. These archetypes, suggesting that not all management problems are unique, provide managers with insights into the feedback-loop structures underlying the changes that occur commonly in a system's behavior over time. Furthermore, the system archetypes challenge managers to consider the advantages and disadvantages of possible solutions by making time an explicit variable in decision-making. This additionally alerts managers to future unintended consequences.

To illustrate, one such archetype, “balancing process with delay,” involves people (one person, a group of people, or an organization) who, while acting towards a goal, must adjust their behavior in response to delayed feedback. In many cases, systems respond to people's actions only after a while, not immediately. Problems may arise when managers or employees are not aware of the impact of this delay on the process that they have begun, in which case they may take more corrective action than needed or may give up on the process entirely.

3.1.2 Implications of System Dynamics for School Leadership

Let us offer the following illustration from the domain of school leadership to serve as an example of Senge's basic “balancing process with delay” system archetype

Fig. 3.1 Balancing process with delay



(see Fig. 3.1). At one middle school, emotional bullying was a widespread phenomenon, including cruel teasing, talking viciously about students behind their backs, spreading humiliating rumors, and excluding kids from group activities (“School bullying” in Fig. 3.1). A desirable school climate is where bullying is prevented and students feel safe (“Desirable school climate” in Fig. 3.1); therefore, we can see the school’s problem as a gap between desired and actual school-climate (“School climate gap” in Fig. 3.1). In response, the principal launched a bullying prevention program, with the goal of minimizing students’ bullying behavior (“Prevention program” in Fig. 3.1). The program consisted of several components, including stated procedures for dealing with student aggression according to an extensive array of disciplinary options coinciding with the severity of the offense. A few days after the program was underway, it turned out that the problem of bullying continue. Some serious bullying events took place, infuriating parents, students, and teachers. In response, the principal decided to aggravate the newly prescribed disciplinary measures. Immediately, resistance emerged among the school staff, who claimed that the new rules were too rigid and the punitive measures were too severe. Consequently, the principal concluded that the program was ineffective and decided to cancel the prevention process. This led to a continuation of the school climate gap, without any additional prevention or treatment measures.

In this illustration, the principal did not perceive the system’s delay in response to the new anti-bullying prevention program. Due to a perception of lack of progress, the principal took over corrective action, reflected in the harsher punishment. This overcorrection provoked resistance, which necessitated canceling the needed program. The school is a sluggish system, which is slow to respond to corrective processes, and it takes time for the school climate to change and deliver feedback about a safer atmosphere. Therefore, in such a system where the response to action is delayed, school leaders should be patient, avoiding incautious and unstable reactions and giving the process time to work.

In terms of the implications of system dynamics for the field of school leadership, the system dynamics approach highlights the system’s feedback-loop structure as the major determinant of an organization’s behavior. Thus, system dynamics provides a framework that could enable school principals to see beyond the surface to reveal the deeper patterns of relationships among the feedback loops that are actually responsible for creating behavior. It allows school leaders to understand

complexity, to predict consequences of current policies, and to isolate the real forces of change within a learning organization in order to improve the system. Using the system dynamics methodology and management archetypes, school principals would be able to look for fundamental causes rather than referring to symptoms; treat problems from their roots rather than becoming addicted to easy solutions; and focus on looking for small changes that can produce big outcomes rather than trying to change the school drastically.

As will be reviewed below (see Sect. 4.1), Wells and Keane (2008) demonstrated how the “laws” and guiding principle of systems thinking presented by Senge may be implemented by principals to develop professional learning communities in schools. Senge himself, together with a team of educators and organizational change leaders, published the book *Schools that learn: A fifth discipline fieldbook for educators, parents and everyone who cares about education* (Senge et al. 2012), which aims at bringing organizational learning and system dynamics into classrooms and schools.

3.2 Management Cybernetics

According to its originator, Wiener (1948, 1954), cybernetics was defined as the scientific study of “control and communication in the animal and the machine.” Wiener argued that animals, including human beings, can be considered as machines—but as machines that are more advanced than the artificial ones fabricated by humans. Based on a variety of cybernetic concepts, Beer (1972, 1974) redefined cybernetics as the science of effective organization, highlighting the usefulness of cybernetic constructs for understanding and improving complex systems. According to Beer, systems such as populations or organizations are also machines, even if more multifaceted. Hence, “management cybernetics” (or “organizational cybernetics”—see Jackson 2003) is the science of control and communications in human organizations.

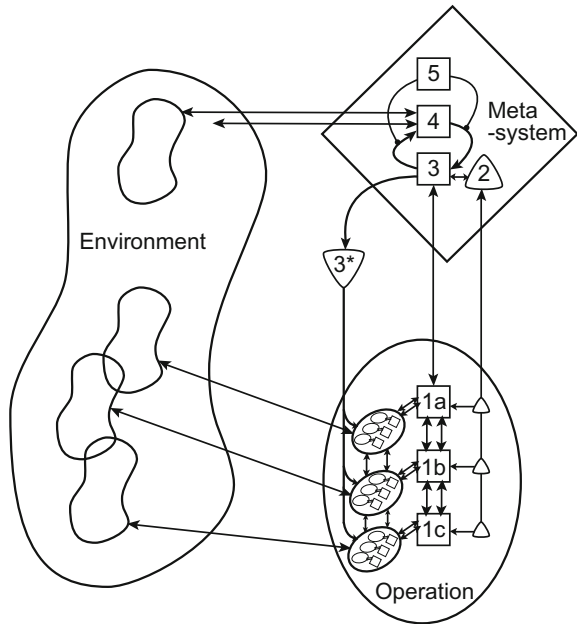
Within the management cybernetic approach, Beer (1972) developed his influential *viable system model*. A viable system is one that is organized in such a way as to meet demands for survival within a changing environment. Beer’s model is an abstracted cybernetic description of the key features characterizing any such viable system. This theory about how viable systems work focuses on the system’s organizational structure by summarizing the parts of the viable system as a diagram, which presents the relationships among these parts and their relationships with the environment. Thus, the viable system model offers a standard, precise visual and verbal language for discussing organizational issues and a set of tools for identifying common organizational problems and their possible solutions (for a detailed explanation of the elements of viable system model—see the next section).

3.2.1 *Implications of Management Cybernetics for School Leadership*

Here is an example of the viable system model from the field of education. According to the viable system model, all organizations have three basic elements: the operation, the environment, and the meta-system (see Fig. 3.2). The *operation* (System 1) comprises the system's primary activities. Within the school, the primary activities are teaching and learning. This System is structured as a cluster of smaller systems (1a, 1b, 1c, etc.), which do the actual work that defines the system. According to the management cybernetics, complex systems have a "recursive" nature. Namely, systems exist in hierarchies, and the organizational form of higher-level systems can be found repeated in their parts. Thus, all the smaller systems are constructed as viable systems too, organized in the same way. Within the school, the smaller viable systems may be grade levels, classes or disciplines. The *environment* in which the system operates includes those parts of the outside world which affect or are affected by the system. The school's environment includes the school board as the immediate formal authority and employer of both principal and school staff; the parents, either as individuals or in the form of a parents' committee as an organized actor; policymakers at the national and regional levels; and the local community. The *meta-system* is the management, comprising Systems 2, 3, 4, and 5. In broad terms, System 2 deals with communication and scheduling, working to search for and handle conflicts of interest, to prevent their destructive effects; System 3 deals with structures and controls, establishing the rules, resources, rights and responsibilities; System 3* is a servant of System 3, fulfilling an auditing role to ensure that rules and regulations promulgated by System 2 are being adhered to; System 4 looks outwards to the environment, monitoring how the organization needs to adapt in order to continue to exist; and System 5 deals with policy decisions and balance, steering the organization as a whole. Within the school, these systems would refer to different roles of the principal, some of them may be delegated to school middle leaders, such as assistant principal or scheduling coordinator. As seen in Fig. 3.2, the viable system model presents these three elements as separate but as interacting with each other.

The viable system model offers an easy way for different individuals to develop a common understanding of organizational complexity. It allows establishing a clear identity for an organization, which embodies purposes achievable in the changing environment and is agreed and understood throughout the enterprise. The model also provide a precise language for discussing organizational issues such as centralization and decentralization, stability and change, control and coordination. The viable system model can be used as an exemplar of good organization against which the structures and processes of an actually existing organization can be checked, enabling to find out what is going wrong on the basis of knowledge of how a healthy organization should look like. If it is used in designing a new organization, the model ensures it is constructed according to good cybernetic principles.

Fig. 3.2 Viable system model



3.3 Complexity Strategy

Complexity theory seeks to conceptualize how order appears within complex systems (Johnson 2010). Complexity theory has been most closely associated with the natural sciences (Mitchell 2009) and only within the last few decades has moved into the realm of the social sciences (Allen 2001; Burnes 2005). Complexity has been applied to the study of leadership (Boal and Schultz 2007; Lichtenstein and Plowman 2009), organizational outcomes and change (Lord 2008; Uhl-Bien and Marion 2009), government management and policy administration (Choi and Brower 2006; Meek et al. 2007; Morcol 2005).

One type of complex system is the *complex adaptive system*, characterizing, for example, the stock market or the human immune system. Such a system is complex in that it contains large numbers of elements interacting in many diverse ways, and it is adaptive in that it has the ability to change its behavior and adapt to new relationships with the environment (Mitleton-Kelly 2003; Olson and Eoyang 2001). One of the main characteristic of complex adaptive systems is emergence, referring to how some form of overall order arises out of many relatively simple interactions (e.g., the internet, where there is no central organization rationing the number of links, yet the number of links pointing to each page follows a “power law”, in which a few pages are linked to many times and most pages are seldom linked to). Complex adaptive systems also characterized by a tension between chaos and order. The systems are chaotic in that for every pathway more than one course of action can be taken—leading to unpredictability and uncertainty at any given moment—

and ordered in that patterns, consistency, and equilibrium care arise. Actually, complex adaptive systems move between chaos and order and often straddle the “edge of chaos,” which is the point at which the system is out of equilibrium and in an unstable state that moves it forward (Stacey et al. 2002). Organizations can be treated as complex adaptive systems because they exhibit the fundamental principles of complexity, adaptability, emergence and tension between chaos and order (Beeson and Davis 2000; Chiva-Gomez 2003).

3.3.1 Implications of Complexity Strategy for School Leadership

The concepts of complex adaptive system may provide an important framework for educational issues. Newell (2008), for example, recommended considering the classroom to be a complex adaptive system, in order to shift attention from the individual student to the social collective (i.e., the class) as the focus of learning. Seeing the class as a learning system, dynamic local interactions may enable emergent behaviors indicative of learning that transcends that of the individuals within the class. More specifically, Burns and Knox (2011) described classroom’ processes as a complex adaptive system, arguing that linear descriptions of these processes do not sufficiently capture the complex nature of classrooms, and therefore cannot explain how classroom change occurs over time. They presented a relational model of classrooms, which focuses on the relations among different classroom elements, such as the physical, environmental, cognitive, and social aspects, showing how these interactions are crucial for understanding and describing classroom’ processes. Other researchers used complex adaptive systems theory to explain higher education (Mandviwalla and Schuff 2014) and the standards-based reform movement (O’Day 2002).

Any school may be seen as a complex adaptive system. The school as a system is complex, made up of multiple interconnected components that interact with each other, ranging from order to chaos; and adaptive, having the capacity to change and learn from experience. In addition, the school is characterized by emergence. For example, a multiplicity of relatively simple interactions among the school’s teachers, students and parents, may lead to an emergence of an overall atmosphere, characterized by caring, strained relations or competitiveness climate.

Seeing the school as a complex adaptive system enables principals to run it better. Understanding the complexity of school is obviously important. Recognizing the adaptability of a school is also crucial: the school is like an organism that survives and thrives by continuously adjusting itself to its surroundings. Thus, principals who want to ensure the school success, and even its existence, should know that rigid structures, clear-cut long-term planning, precise task definitions, and elaborate rules might dangerously lead the school to remain fixed in pursuit of a particular vision when an uncertain world requires flexible responses. Instead,

principals need to accept the fact that the long-term future of the school is not completely knowable. Absence of tight control does not mean that things will fall apart; according to this approach, continuous change of organizations and emergent order is a natural state of affairs. In addition, organizations that operate on the edge of chaos are able to create opportunities for ongoing innovation by injecting novelty into normal operations (Choi et al. 2001; Stacey 2001). Thus, schools can expand their opportunities by creating new connections, and disrupting existing patterns of interaction. For an example of emergence at school, see Sect. 6.2.1.

3.4 Soft Systems Methodology

Soft systems methodology does not refer to the softness or hardness of the systems themselves but rather to how people think about systems (see Sect. 2.4). As a systems-thinking approach, soft systems methodology was designed as a means for thinking about and dealing with complex, often ill-structured situations that elicit disagreement regarding what aspects are most important and how to address them. Instead of reducing a situation's complexity so that it can be modeled mathematically (as done in hard systems thinking—see previous chapter), soft systems methodology strives to learn from the different perceptions that exist in the minds of the various people involved in an unstructured situation.

Although Checkland's (1981) original 7-stage version of soft systems methodology has been superseded by his own later work (Checkland 1999), it is still widely used. As seen in Fig. 3.3, the seven stages for analyzing problem situations entail: (1) entering the problem situation—gaining an initial understanding of the problem situation and the wider situation in the organization; (2) expressing the problem situation—beginning to organize ideas and understanding of the situation, to enable and facilitate the analyses that will follow; (3) formulating root definitions—describing the system in a structured way that enables modelling of the system; (4) building conceptual models—logically extrapolating a conceptual model from each root definition, to show each operational activity which would be necessary to carry out the process described in the root definition; (5) comparing the conceptual models of activity with the real world—contrasting the thinking that has been done up to the relevant systems in the world; (6) defining changes that are desirable and feasible—considering the results from the previous stages, to find out those that seem likely, if implemented, to have a positive outcome in the situation; and (7) recommending actions to amend the real-world situation, to those with the power to make the changes. As seen in Fig. 3.3, the soft systems methodological model is divided into two stages, depicting those that occur in the real world (Stages 1–2, 5–7) versus those that occur in the conceptual world for thinking systemically about the real-world problem situation and its solution (Stages 3–4).

In this methodology, the stakeholders—who disagree amongst themselves on the definitions and interventions necessary for solving the problem—engage in a discussion guided by a facilitator. The dynamics of the method arise from the fact that

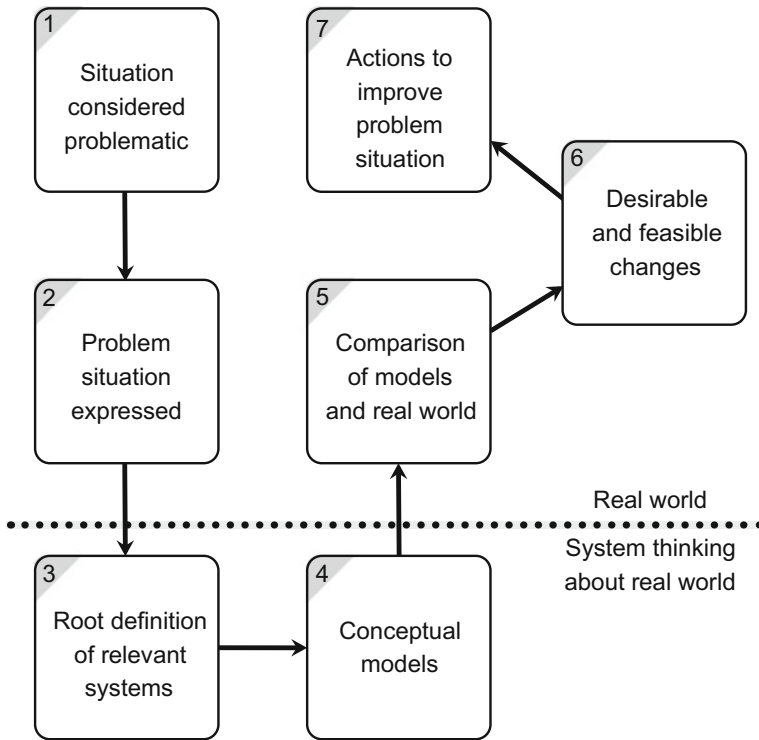


Fig. 3.3 The 7-stages of soft systems methodology

Stages 2–4 always occur in an iterative process: during this discussion, various root definitions and conceptual models are put forward, modified, and developed until a desirable model is achieved by consensus; this model then forms the basis for real-world changes.

3.4.1 Implications of Soft Systems Methodology for School Leadership

Considering the unstructured and poorly defined nature of many educational problem situations, soft systems methodology may be useful for school leaders. For example, Patel (1995) described the use of soft systems methodology in order to gain a deeper understanding of teaching and learning processes. Using this methodology, Patel was able to identify previously unrecognized teaching and learning issues, thereby attributing importance to the usefulness of soft systems methodology for externalizing undergraduate students' learning and instruction. Similarly, Yadin (2013) described the use of soft systems methodology for

identifying graduate students' specific difficulties. Macadam and Packham (1989) described the application of soft systems methodology during a radical restructuring of an academic institution. Various problems had led to a reorganization of an agricultural college, and its process of reform was guided by soft systems methodology. During this reform process, the college's educational programs were shifted to focus on experiential learning and systems thinking—a major departure from the previous didactic and discipline-based curricula. The authors reported the usefulness and efficiency of this methodology for institutional reform. Although these researches have dealt with higher education, similar processes of improving teaching and learning and leading change may take place in school settings.

3.5 Conclusion

This chapter provided a general background on four well-known approaches for implementing systems thinking in a management context, which have been suggested over the years. Overall, these systems-thinking approaches, as well as additional ones that are beyond the scope of the current review [such as *Strategic assumption surfacing and testing* (Mitroff and Emshoff 1979); *Interactive planning* (Ackoff 2001); and *Critical systems heuristics* (Ulrich 1983)], suggest that systems thinking as a course of action in the field of management has a structural nature: implementing systems thinking in the management realm is done through a rigorously defined process with a strict set of tasks, involving predefined models and archetypes. Moreover, using systems thinking by managers is a complicated procedure, which involves an application of a series of steps requiring considerable investment of time and purposeful attention. Consequently, such multistep, intricate systems-thinking approaches may be seen as appropriate mainly for specific issues within the system that require exhaustive handling.

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Chapter 4

Existing Research on Systems Thinking in School Leadership

As seen in the previous chapter, systems thinking as a management approach can enable managers to cope with increasing complexity and change. As such, it can significantly benefit the realm of educational leadership. The first step in developing a conceptual framework for systems thinking specifically tailored to the tasks facing school leadership is to learn from prior research conducted on the topic. The current chapter reviews available literature on systems thinking for school leaders, describing studies on the implementation of systems thinking in school leadership and books that provided conceptual frameworks for systems thinking in school leadership. The conclusion points to gaps in the current knowledge base regarding systems thinking for school principals.

4.1 Studies on Implementing Systems Thinking in School Leadership

Research on systems thinking expressly aimed at school principals is scarce, although the potential contribution of systems thinking to various educational issues has received growing research attention in recent years. When it comes to teaching and learning, systems thinking has become an increasingly recommended pedagogical method, mainly in the complex context of environmental education for sustainability (e.g., Eilam 2012; Ireland and Monroe 2015; Lewis et al. 2014; Porter and Cordoba 2009; Stone 2010). As a multidisciplinary subject, sustainability involves ecological, economic, and cultural aspects and interfaces with many other fields like law, agriculture, and engineering. Systems thinking is particularly suited to such a complex multidimensional context where learners need to see the big picture. Likewise, nowadays systems thinking is increasingly mentioned in the literature on science and technology education, which is characterized by similarly high levels of complexity (e.g., Assaraf Ben-Zvi et al. 2013; Boersma et al. 2011;

Gero and Zach 2014; Riess and Mischo 2010; Vachliotis et al. 2014). However, the connections between systems thinking and school leadership within these educational contexts have not yet been sufficiently investigated.

One of the rare studies that focused on quantitative measurement of the effectiveness of systems thinking as a holistic educational leadership approach was conducted by Pang and Pisapia (2012a, b). Using the Strategic Thinking Questionnaire (Pisapia and Reyes-Guerra 2007), they found that according to Hong Kong principals' self-reporting, the school principal's holistic leadership approach based on systems thinking was the strongest predictor of school leaders' effectiveness, distinguishing between more effective and less effective leaders. In addition, those school leaders who demonstrated more extensive use of systems thinking also reported more frequent actions taken to accomplish the school's goals, to develop a learning organization that continuously transforms itself (see Sect. 3.1.1), and to ensure trust and emotional commitment to the school's aspirations and values among the teaching staff.

The paucity of research on this topic is not related only to the limited number of researchers who have examined the use of systems thinking as a management approach in the realm of school leadership. The vast majority of the studies that have investigated the application of systems thinking as a school leadership approach primarily depicted systems thinking as a local means for handling a specific critical field within the school, such as evidence-based practice, teacher retention, curriculum evaluation or professional development.

Systems thinking has been investigated, for instance, regarding aspects of the school principal's role which are related to the teaching staff. Regarding team learning, for example, Wells and Keane (2008) demonstrated how the "laws" of systems thinking presented by Senge (1990) may be implemented by principals to develop professional learning communities in school systems, adopting Senge's metaphors and the guiding principles of his system dynamics perspective for a learning organization (see Sect. 3.1.2).

In another example, regarding teacher retention, Minarik et al. (2003) claimed that school principals can use systems thinking to reduce the rate of teachers who leave their profession, by promoting creative and unique solutions. Beyond the single school principal's reality, Gomez et al. (2015) suggested that systems thinking should be implemented to re-conceptualize professional development programs targeting the early childhood education teaching workforce, whose qualifications are typically quite low.

A review of the literature on school-leadership applications of systems thinking yielded some other studies highlighting its value for evaluating curricula and improving educational programs. Concerning educational evaluation, Jsparro (1998) claimed that curriculum evaluation via systems thinking could ensure district-wide uniformity and consistency in evaluation (see also Hargreaves and Podems 2012). Dyehouse et al. (2009) argued that systems thinking can provide a framework for representing many of the components in a complex curricular program and may serve as a more precise and explicit method of interpreting and assessing program results. Systems thinking was also used in a report written by

Levenson (2012), which dealt with the question of how to improve the quality and effectiveness of Ohio's special education system, which suffered from fiscal distress. The main argument of this report was that multiple partners must work together, rather than alone. By integrating their efforts, coordinating their policies, and playing to their strengths, these partners can better serve students with disabilities at a lower cost.

Two other studies did explicitly examine local aspects of the school principal's systems thinking, one regarding the important relationship between the school and the larger community and the other regarding school leaders' best practices. Thus, first, within the context of the *No Child Left Behind Act*, Chance (2005) proposed that systems thinking is useful for improving schools' public relations. She claimed that systems thinking may help educational leaders see public relations as a continual, systematic process that is essential for engaging the school community's support to improve students' learning. Second, Kensler et al. (2011) asserted that because educational leaders have access to large volumes of data but lack the skills to use these data effectively for continuous school improvement, systems thinking may assist in the development of school leaders' evidence-based practice. In this context they claimed that tools such as feedback-loop diagrams (see Sect. 3.1.2) may allow educational leaders to make their thinking more visible to others, inquire into others' thinking and see new connections.

In short, the existing research pertaining to the implementation of systems thinking as a school-leadership approach is meager. Moreover, most of the existing research depicted systems thinking as a local means for dealing with one specific critical field within the school rather than a global management approach. Thus, the existing research has not adequately clarified how principals should operate a school holistically in a regular manner. The characteristics of holistic systems thinking for school leaders remain indeterminate in the available database. This lacuna gave the ground for our prior researched (Shaked and Schechter 2013, 2014, 2016, In press-a, In press-b), as well as to this book.

4.2 Books About Implementing Systems Thinking in School Leadership

Several books about systems thinking in school leadership are available (e.g., Senge et al. 2012). Some of them recommend using systems thinking for successful educational reforms. For example, the focus of Fullan's (2005) book, *Leadership and Sustainability: System Thinkers in Action*, lies on the sustainability of educational reform. Fullan argues that school improvement is too often temporary and that systems cannot achieve real progress in their desired change unless they foster a sustainable agenda, referring to large-scale long-lasting reform. In his view, sustained school improvement requires "system thinkers" who can address the entire system at all levels: school and community, district or local education authority, and

state or national policy. Systems thinkers know that all three of these levels influence each other. Furthermore, they proactively and naturally take into account large portions of the educational system because they know that context matters, for better or for worse, and that part of their work involves changing the context, which can only be accomplished by taking action in the broader contexts. Thus, according to Fullan, school principals should be almost as concerned about the success of other schools as they are about their own schools, because sustained improvement of their own schools is not possible unless the entire system is moving forward. That is, principals must understand not only their own reality and work, but also re-imagine the whole system at the same time, thus expanding principals' perspective beyond school boundaries (see also Fullan 2004). Being a district and system player, looking out to improve within, is one of the keys to maximizing the principal's impact (Fullan 2014; see also Higham et al. 2009). Similarly, Finnigan and Daly (2016) argued that in order to raise education outcomes, a system-wide—rather than school-by-school—improvement is required. Without a broad view of the whole system, there will be no real change in schools that do not function properly (Daly et al. 2015).

As in the research studies reviewed in the previous section, some books concentrate on implementing systems thinking regarding a single particular issue—in this case an issue that is conceptualized as essential for effective educational transformation. For example, Hoban's (2002) book, *Teacher Learning for Education Change: A Systems Thinking Approach*, concentrated squarely on teachers' learning. He claimed that one of the reasons for the disappointing results of many past efforts to render educational change was an overly simplistic view of teachers' learning, which was incompatible with the complex nature of this factor. According to Hoban, teachers' learning about how to do something new in the classroom often has consequences for other aspects of classroom practice. As such, it should be seen as part of a conceptual framework based on nonlinear processes of educational change, namely the processes where multiple conditions exist that need to interrelate as a system in order to render such change. For this purpose, Hoban suggested that school leaders should conduct what he called a "professional learning system," which incorporates experimenting with ideas, accessing resources that present new ideas, conceiving of teaching as an art or profession, and more—all within a long-term timeframe. Similarly, Hoban recommended improving the quality of teacher education by considering it not as a set of independent elements but rather as a coherent combination of links, including conceptual links across the university curriculum, theory-practice links between school and university, social-cultural links amongst participants, and personal links that shape the identity of teacher educators (see also Hoban 2007).

Another book, *Transforming Schools: Creating a Culture of Continuous Improvement*, by Zmuda et al. (2004), focused on transformations that make schools a place where all staff members constantly improve their teaching, learn, and work to increase students' achievements, or—in other words—learning

organization (see Sect. 3.1.1). These authors asserted that systems thinking is the “door” to school staff’s continuous improvement. Through collegial conversations, educators can overcome their tendency to understand the school through a set of assumptions about current practices and their perceived effectiveness, and instead learn to see the school as a purposeful system of interlocking components. Thus, they can examine the school’s elements, their interactions, and their documented effectiveness in realizing the school’s goals. Only after this shift can the educators understand their work, both individual and collective, as contributing to the school’s continual improvement. In the view of Zmuda and her colleagues, becoming a competent system involves moving from unconnected thinking to systems thinking, from an environment of isolation to a one of collegiality, and from individual autonomy to collective autonomy, responsibility, and accountability. In the process of building the school as a competent system, the staff members emerge as a professional learning community, embracing collective accountability as the only way to achieve their common vision for all students.

In an earlier book, *Five Technologies for Educational Change: Systems Thinking, Systems Design, Quality Science, Change Management, Instructional Technology*, Salisbury (1996) combined systems thinking with the four other methods or technologies mentioned in his book’s title in the context of school change. He claimed that these technologies must be viewed as an ensemble rather than as separate entities, because each is truly effective only when used in conjunction with the others. When applied separately, they yield only partial results; the potential for positive change emerges from their complementary forces and actions. Salisbury also asserted that systems thinking is the seed from which the other technologies spring, and it is the lens that focuses the other technologies into a synergetic relationship (see also King and Frick 2000).

Importantly, although these books provide valuable frameworks, they do not decode the characteristics of holistic systems thinking as a comprehensive approach for those in leadership positions in the school. This book will present systems thinking as a wider practical framework, which can be used by school leaders regularly during daily school life.

4.3 Conclusion

The existing literature about systems thinking in school leadership that was reviewed in this chapter is important, albeit limited. Our goal is to conceptualize systems thinking as a comprehensive educational leadership approach, which school principals can use as needed during their routine work. Toward that end, the next chapter presents and explicates our proposed systems-driven *Holistic School Leadership* approach and its characteristics.

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Part II
The Holistic School Leadership
Approach and Guidelines for
Its Implementation

Chapter 5

Holistic School Leadership

The overarching goal of this book is to present the *Holistic School Leadership* approach. Thus, the current chapter, which outlines the meaning of the *Holistic School Leadership* approach, distinguishing it from the available knowledge on systems thinking in school leadership, may be seen as the core of this book.

The *Holistic School Leadership* approach is based on our empirical research (Shaked and Schechter 2013, 2014, 2016; In press-a; In press-b) that delves into targeted exploration of systems thinking among school leaders. Using qualitative methodology, we conducted semi-structured interviews, observations, and focus groups for heterogeneous samples of Israeli school principals along a range of career stages, from prospective preservice principals, through the novice stage, and including veteran senior principals. This methodology aimed to address three lacunae in the literature: the characteristics, sources, and development of systems thinking in school leadership. Our targeted research resulted in the development of a conceptual and practical framework for understanding and facilitating school principals' systemically driven roles and responsibilities.

5.1 Our Proposed *Holistic School Leadership* Approach

Our research showed that systems thinking may be seen as a worldview or perspective about school leadership. Systems thinking may offer a way to consider events, people and processes, enabling principals to understand almost everything that happens at school. Moreover, systems thinking may offer an effective way to reference everyday school life, ongoing management issues, and numerous diverse aspects of principals' work. Thus, systems thinking can help school leaders cope with various kinds of administrative tasks, large and small, essential and marginal. It may be applied flexibly, as an efficient ongoing way to address short-term as well

as long-term management issues across local and global aspects of organizational management.

Systems thinking is not a *tool* for school leaders but rather a school leadership *approach*, where the term “approach” refers to a comprehensive way of both conceptualizing and practicing within the entire work setting. As mentioned in Sect. 2.2.2, holism may be seen as the epistemological basis of systems thinking. Therefore, in this book we term the approach whereby school leaders lead schools through the systems-thinking framework as follows: *Holistic School Leadership*.

The previous chapters described the attempts that have been made to foster systems thinking’s applicability in school leadership. Chap. 3 considered the main systems-thinking approaches to management in general, and Chap. 4 reviewed the literature on the implementation of systems thinking in the specific area of school leadership. The role and importance of *Holistic School Leadership*, presented in this book, can now be outlined. The *Holistic School Leadership* approach differs from systems thinking in school leadership, as it appears in the existing literature, in two respects. First, *Holistic School Leadership* is suitable for use on a regular, ongoing basis, rather than only in school reform or for the school’s most critical issues. In addition, the *Holistic School Leadership* approach assumes that systems thinking offers not only structured series of steps or archetypes but also a way to understand and handle a wide range of occurrences, tasks and challenges that transpire in everyday school life. These two differences between *Holistic School Leadership* and the prevalent perception regarding systems thinking in school leadership are explained in the following section.

HOLISTIC SCHOOL LEADERSHIP:

An educational leadership approach where school leaders employ a holistic perspective to lead schools through systems-thinking concepts and principles of action.

5.2 *Holistic School Leadership* and Prevalent Perception of Systems Thinking in School Leadership

We agree with prior researchers (see Chap. 4) who have pointed out that systems thinking is a valuable approach for school leaders in dealing with quite a few educational leadership challenges. However, the existing literature on systems thinking in school leadership often consider this framework to be suitable for use during education reforms or to improve a particular field or need at school, such as parent-school relationships, teachers’ collective learning, or evaluation of educational programs.

Our findings indicate that systems thinking provides a wider practical framework that school principals can employ as they see fit, in a variety of areas, during daily school life. We propose that systems thinking may serve as a point of view about school leadership—a way to appreciate and address almost every issue within school. In this sense, *Holistic School Leadership* can suitably be applied not only as an exception in the schools but also as the rule. *Holistic School Leadership* may be utilized occasionally or habitually, widely or narrowly, at different times and in different school contexts. Put differently, *Holistic School Leadership* is a multidimensional approach (see Sect. 6.2.2), relating to multiple school aspects and characterized by diversity and a broad scope.

According to the available literature, the implementation of systems thinking into organizations should be highly structured by nature. These prevalent systems thinking approaches present an end-to-end process, accounting for all possible paths and exceptions, including a complex composition of activities. Moreover, these approaches involve using extremely well-structured, predetermined models. Management cybernetics, for example, which applies cybernetics to management and organizations (see Sect. 3.2), offers the highly structured viable system model. This model suggests a standard, precise visual and verbal language for discussing organizational issues (see Sect. 3.2.1). Similarly Senge (1990) offered a small number of system archetypes, which are simple stories of management problems that often occur in organizations (Sect. 3.1.1). Thus, according to this approach, to use systems thinking in an organization one must identify the organization's unique reality in terms of the existing highly structured archetypes. Another example is soft systems methodology (see Sect. 3.4), which recommended organizational modeling, to be conducted through a structured, predefined 7-stage process.

Uniquely, *Holistic School Leadership* supports a pattern of ad hoc applications of systems thinking, enabling high variability in what school leaders do, rather than making use of a highly structured methodology and following a set pattern. *Holistic School Leadership* is shaped by wariness concerning the claim that any one structured procedure would be able to guarantee generalized improvement. Thus, *Holistic School Leadership* represents non-structured systems thinking, which calls into doubt the possibility that any predetermined model or archetype could identify the specific school reality on the ground.

Non-structured systems thinking as represented by *Holistic School Leadership* may be seen as reflecting postmodernism, which emphasizes contextual interpretation rather than grand narratives (Jackson 2003). Real-world processes are executed in a 21st-century world that is characterized by little structure, imperfect information, and unforeseen exceptions. Thus, systems thinking in school leadership today may be used in a flexible manner—depending on the circumstances, the environment, and the people involved. As a non-structured systems-thinking approach, *Holistic School Leadership* provides basic principles to be implemented as needed in different school situations. Importantly, *Holistic School Leadership* considers systems thinking as a conceptual framework, which allows for the understanding of a wide variety of school events, difficulties and tasks through a systems lens, which offers an efficient way to deal with diverse aspects of school leaders'

work. *Holistic School Leadership* suggests a systems-thinking perspective that may be amenable to a much broader spectrum of applications, going beyond the ready-made, structured procedures and models.

Non-structured systems thinking represents a more flexible and easy-to-use approach. However, it continues to hold exactly the same two meanings of systems thinking, as in any systems-thinking approach: *seeing the whole beyond the parts* and *seeing the parts in the context of the whole* (see Sect. 2.1). Just like other systems-thinking approaches, it disagrees with linear management—which involves the application of reductionism (see Sect. 2.2) to management issues and uses a unidimensional lens that relies on managers’ ability to predict, engineer, and control a system’s outputs by manipulating its parts. In contrast, it assumes that real-life situations are usually nonlinear and non-reducible, advocating stepping back to see the whole picture, the “forest,” rather than just focusing on its parts, the “trees.” The difference between non-structured systems thinking and other systems-thinking approaches is that non-structured systems thinking does not present a structured procedure or model; instead, it presents general principles that may be applied modularly to almost all management issues, large and small, discrete or ongoing, deep or shallow. These principles, summarized in Table 5.1, clarify some of the practical differences between linear management and systems-thinking management.

Table 5.1 Systems-thinking management versus linear management

Management goal	Systems-thinking management	Linear management
Why should we work together?	Because in this way we will improve both our individual and collective performance	Because this is our policy. This is what the senior management has decided
What do we need to do?	We need to improve the system as a whole	We have to tackle many issues independently and simultaneously
What is the connection between problems and their causes?	Connections are indirect and hidden. Deep contemplation is required to reveal them	The connection is effortlessly recognizable. It is obvious and easy to trace
Who is to blame for our problems?	We unwittingly create our own problems, and we can solve them through changing our own behavior	Unequivocally others, within or outside the organization. They are the ones to change
Which is better: short-term planning or long-term planning?	Most quick fixes make no difference, or even make matters worse in the long run	A policy designed to achieve short-term success will also assure long-term success
How can we improve the whole?	To improve the whole, we have to optimize the interactions among its parts	To improve the whole, we have to improve its parts
How can we change the whole?	To change the whole, we have to carry out a few key coordinated initiatives	To change the whole, we have to carry out many independent initiatives simultaneously
What are the options available?	There are several choices available, which have various implications over time	There are limited possible solutions, all in direct proportion to the problem

5.3 Conclusion

Holistic School Leadership is a global, nonlinear school leadership approach offering a systems-thinking perspective to be implemented per need. It is undertaken not only through in-depth, complicated procedures as needed for improvement and transformation processes, but also through a wide range of ad hoc methods that can be applied to particular problem situations by different stakeholders. Instead of offering a structured model or archetype, *Holistic School Leadership* recommends systems thinking as a lens through which to view school leadership.

In the next chapters, we share multiple examples of systems thinking's applications by school leaders during everyday school situations, in a wide variety of school arenas. These examples gradually enable readers to capture the full meaning of the *Holistic School Leadership* approach as we conceptualize its implementation, by focusing on four lacunae in the literature regarding systems thinking in school leadership: its characteristics (see Chap. 6), its sources (see Chap. 7), its development over principals' career span (see Chap. 8), and its translation into action (see Chaps. 9–10).

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Chapter 6

Characteristics of *Holistic School Leadership*

Our empirical exploration of systems thinking in school leadership (Shaked and Schechter 2014) highlighted four major characteristics of *Holistic School Leadership*. By characteristics of *Holistic School Leadership*, we refer to the practical ways in which school leaders lead schools through the systems-thinking framework.

The characteristics of *Holistic School Leadership* should be seen as interconnected and interrelated. Thus, the phrase that “the whole is greater than the sum of its parts” (see Chap. 2) is relevant here: School leaders who perform at the level of *Holistic School Leadership* should be considered as such not merely because they demonstrate several of these characteristics, but rather because they reveal an overall ability to apply this interrelated conceptual framework of *Holistic School Leadership* in the reality of their schools. The characteristics of *Holistic School Leadership* should be seen as reflections of a comprehensive approach. For this reason, we did not call them “components,” which sounds like separate parts, but rather “characteristics,” which are features of a comprehensive school leadership approach.

6.1 Existing Research on the Characteristics of Systems Thinking in General

Before presenting the characteristics of *Holistic School Leadership*, we next review the general literature to uncover the characteristics attributed by other scholars to systems thinking in general, albeit not in the context of school leadership. Unfortunately, due to the severe paucity of empirical research in this area to date, even in the general context no consensus yet exists on systems thinking’s core characteristics.

To illustrate, Richmond (2000) listed seven skills necessary to become a systems thinker. These characteristics consist of: (1) *dynamic thinking*—recognizing behavior patterns rather than focusing on events; (2) *closed loop thinking*—looking for a system’s loops (i.e., the circular cause-effect relations) as responsible for generating the behavior patterns exhibited by a system; (3) *generic thinking*—thinking in general terms rather than in terms of specifics; (4) *structural thinking*—thinking in terms of units of measure, or dimensions; (5) *operational thinking*—thinking in terms of how things really work rather than how they theoretically work; (6) *continuum thinking*—using continuous models rather than discrete models; and (7) *scientific thinking*—thinking rigorously about quantification and dynamics of variables. Richmond did not deal with systems thinking in school leadership, but with systems thinking in general. The skills he detailed were not empirically based, but relied on his considerable expertise in the field of systems thinking. The term ‘skills’ is not exactly the same as ‘characteristics’; these skills may be seen as preconditions rather than the components of systems thinking itself.

Based on the literature on systems thinking, Sweeney and Sterman (2000) also devised a number of specific systems-thinking skills, which included the ability to: (1) understand how the behavior of a system arises from the interaction of its agents over time (i.e., dynamic complexity); (2) discover and represent feedback processes (both positive and negative) hypothesized to underlie observed patterns of system behavior; (3) identify stock and flow relationships to show a system’s structure and behavior (where stock is any entity that accumulates or depletes over time, and flow is the rate of change in a stock—often visualized in a diagram); (4) recognize delays and understand their impact, create a graph that tells a story about a particular behavior over time, and draw inferences about the dynamics of a system from a description of its structure; (5) identify nonlinearities, i.e., recognize and analyze nonlinear relationships between cause and effect; and (6) recognize and challenge the boundaries of mental models. A mental model is an explanation of a person’s thought process about how something works in the real world, an internal symbol or representation of external reality. Like Richmond above, Sweeney and Sterman did not deal with systems thinking in the realm of school leadership, but with systems thinking in general. The list they presented was not a finding of their study, but rather a part of its theoretical background; the study itself focused on an assessment tool for systems thinking.

Ossimitz (2001) also dealt with assessment of systems-thinking ability. Based on Sweeney and Sterman reviewed above, he identified four basic dimensions of systems thinking: (1) *thinking in interrelated structures*—considering complex linkages and multiple effects; (2) *dynamic thinking*—thinking which is not restricted to grasping just snapshots of a situation, but takes into account evolution over time; (3) *thinking in models*—awareness that we always deal with a model of a complex situation, which is usually massively simplified compared with the “actual” situation; and (4) *systemic action*—the practical ability of steering systems. In Ossimitz’s view, these four dimensions represent the skills listed by Sweeney and Sterman above.

Stave and Hopper (2007) aimed at proposing a taxonomy of systems thinking for use in developing and measuring the effect of systems thinking educational efforts. Based on the researchers mentioned so far—Richmond, Sweeney and Sterman, and Ossimitz—they identified seven systems-thinking components: (1) *recognizing interconnections*—recognizing that systems exist and are composed of interconnected parts; (2) *identifying feedback*—identifying cause-effect relationships among parts of a system; (3) *understanding dynamic behavior*—understanding that feedback is responsible for generating the patterns of behavior exhibited by a system; (4) *differentiating types of flows and variables*—understanding the way different variables work in a system; (5) *using conceptual models*—synthesizing and applying the concepts of causality, feedback, and types of variables; (6) *creating simulation models*—describing system connections in mathematical terms; and (7) *testing policies*—using simulation models to understand system behavior and test systemic effects of changes in parameter values or structure (see also Kopainsky et al. 2011). Stave and Hopper went on to propose a taxonomy of systems-thinking characteristics. However, this taxonomy require further development and more solid empirical base.

Within the area of engineering, Squires et al. (2011) also built a systems-thinking competency taxonomy. Without specifying their sources, they claimed that systems thinking is the ability to think abstractly in order to: (1) incorporate multiple perspectives; (2) work within a space where the boundary or scope of problem or system may be “fuzzy;” (3) understand diverse operational contexts of the system; (4) identify inter- and intra-relationships and dependencies; (5) understand complex system behavior; and most important of all, (6) reliably predict the impact of change to the system.

Given the limited literature on the characteristics of systems thinking, we can also try to benefit from discussion concerning the characteristics of professionals who are skilled in systems thinking. The main research in this area was conducted by Frank (2002, 2006), who identified the characteristics of systems engineers with a high capacity for engineering systems thinking. Later, he compared his findings with those of Frampton (2007), who identified the characteristics of effective information technology architects, and with those of Di-Carlo and Khoshnevis (2006), who explored the role of whole-brain thinking (integrating right-brain and left-brain thinking) in systems architecting. They presented a united list (Frank et al. 2007), and subsequently Frank (2010) generalized the characteristics of successful systems professionals, presenting four lists: (a) general cognitive characteristics such as understanding the whole system and seeing the big picture, understanding interconnections, and thinking creatively; (b) capabilities such as analyzing the need, analyzing and/or developing the concept of operations, and analyzing/capturing the requirements; (c) individual traits such as management skills, building and controlling the work plan, and good human relations; and (d) background and knowledge, such as interdisciplinary knowledge, broad experience, and education. Frank (2012) also presented the CEST (Capacity for Engineering Systems Thinking) Competency Model, which includes a list of cognitive competencies that are all related to systems thinking and can each be

assessed separately. It should be noted, that the characteristics in Frank's list describe the person who performs at the systems level but not how systems thinking itself is manifested in action. Moreover, despite Frank's title "successful systems professionals," which suggests generalizability to professionals in any field, Frank's study sample mainly comprised successful systems engineers and therefore included characteristics like "taking into consideration non-engineering factors" and "using simulations and systems engineering tools." Thus, it is not easy to implement it in other areas, such as the area of educational leadership.

In short, there is a paucity of empirically based research on the characteristics of systems thinking in general. Needless to say, the characteristics of systems thinking in school leadership have not yet been studied.

6.2 Our Proposed Four Core Characteristics of *Holistic School Leadership*

Based on our wide research (Shaked and Schechter 2014) that uniquely targeted systems thinking as a management approach for school principals, four core characteristics of *Holistic School Leadership* were identified through an inductive process of generating themes grounded in the various perspectives articulated by the participants: (1) *leading wholes*; (2) *adopting a multidimensional view*; (3) *influencing indirectly*; and (4) *evaluating significance*. Next, we present each of these four characteristics, providing excerpts from the principals' own descriptions regarding diverse everyday aspects of school leadership in which systems thinking can come into play. To be noted, the following examples of characteristic high systems-level performance all derive from the voices of principals who have had years of experience in the leadership role, who can be classified as in the consolidation or role maturity stages of their *Holistic School Leadership* development (see Sects. 8.2.3 and 8.2.4, respectively).

The four characteristics of *Holistic School Leadership* highlighted by our research are related to each other. Importantly, these four characteristics fall well under the definition systems thinking because each pair of characteristics reflects one of the two main complementary meanings of systems thinking (see Sect. 2.1): *seeing the whole beyond the parts* and *seeing the parts in the context of the whole*. The *leading wholes* characteristic and the *adopting a multidimensional view* characteristic both reflect the meaning of systems thinking that emphasizes how principals can see the whole beyond the parts, whereas the *influencing indirectly* characteristic and the *evaluating significance* characteristic reflect the meaning of systems thinking that emphasizes how principals can see the parts in the context of the whole. These overall meanings for the four characteristics are further discussed in Sect. 6.3.

6.2.1 *Leading Wholes*

We found that the first and primary characteristic of *Holistic School Leadership* is a holistic point of view, oriented toward seeing the big picture and not only its separate parts. As mentioned, rising above the separate components to see the entire system is one of the two main complementary meanings of systems thinking (see Sect. 2.1). When it comes to understanding an entire school, those school principals who espouse *Holistic School Leadership* understand the organization as a whole system, above and beyond its subsystems and components, and recognize how each of them functions as part of the entire system. They view all the parts of the school in the context of and in relation to the other parts, and recognize that the whole emerges from the relationships among the parts.

Compared to the existing literature reviewed above (Sect. 6.1), this characteristic of *leading wholes* is somewhat similar to the skill of *generic thinking* mentioned by Richmond (2000), which means thinking in general terms rather than in specific terms specifics. It is more similar to some of the general cognitive characteristics identified by Frank (2010), such as understanding the whole system and seeing the big picture.

As aforementioned (Chap. 5), *Holistic School Leadership* is unique in that it offers a systems-thinking approach to be implemented per need. As a school leadership approach, it can serve the principal in a broad range of tasks, from leading comprehensive improvement processes that transform the whole school to dealing with small, local situations. The following examples, which illustrate what *Holistic School Leadership* is, demonstrate the wide variety of opportunities to apply it. All names of principals in these examples, as well as in the whole book, are pseudonyms, to protect anonymity.

This holistic point of view may be evident when the school upholds an organizational concept, which distinguishes that specific school from all others. School leaders who consider the school to be one large entity, striving holistically to achieve its mission, understand that in order to assimilate the organizational concept successfully, it must be implemented not only in a single area of school life but rather across all areas. For example, the organizational concept of one elementary school we studied was the well-known theme of multiple intelligences. This school holistically espoused the concept of human beings' variety of intellectual capacities, including some additional intelligences beyond the linguistic and logical-mathematical intelligences that are usually emphasized by schools. As such, in many varied facets of the school's work and credo, emphasis was placed on social, musical, bodily-kinesthetic, emotional, and other intelligences. The school's principal, Evelyn, who had 8 years of experience working as a principal, said:

I believe that implementing the concept of multiple intelligences only in the context of [student] learning is not enough. It must be a part of our peak events—ceremonies, parties, joint parent-pupil activities etc., of our evaluation method, of our teamwork as teachers, of our connection with parents and so on. So twice a year we hold an event for the parents

which is prepared according to the multiple intelligences concept. The teachers are assigned roles according to the multiple intelligences concept, and our report cards are designed according to the multiple intelligences concept, and so on.

Evelyn claimed that in order for the multiple intelligence concept to become truly ingrained in her school, it could not be implemented merely in one aspect of school life; it had to influence the school's entire educational practice, including all actions in all areas. This position represents a holistic viewpoint, seeing all the diverse parts of the school as one large entity that must be managed according to a consistent educational principle.

The principal of another elementary school, Judy, who had 12 years of experience as a principal, led a process of "going green"—becoming committed to set an example of sustainability and environmental awareness. Judy turned this ecological commitment into a major axis of the school's educational work, linking it to many characteristics of school life and to various components of the school community:

These days I am planning a process of greening our school. As a green school we will have environmental education—as a separate subject and in combination with other subjects; we will collect recyclables, such as papers, batteries, aluminum, and plastic; we will reduce energy consumption; we will plant an ecological garden; we will use either reusable or compostable plates, cups, tableware, and napkins during lunches; we will encourage our students to come to school by foot, bicycle, or public transportation; we will get the whole community thinking about sustainability, and a lot of other things.

Judy's perception of school as one large entity, seeing the whole beyond the parts, is reflected in her combination of different aspects of school life into a comprehensive educational practice.

Coinciding with these examples, other school leaders who expressed a holistic perspective tended to view any given issue from any area of school life—be it a program, an event, or a pupil—as a whole system rather than a collection of details. For instance, one high school principal with 11 years of experience as a principal, William, demonstrated his understanding of a holistic educational plan. He told us of an extraordinary project, which was his brainchild, where he led his own highly functioning school to adopt another school located in an extremely disadvantaged area, which was suffering serious operational and social difficulties. To implement his innovative idea, this school leader contacted the adopted school's principal, proposed the adoption idea, and upon mutual agreement they began the connection between both schools. Within this holistic adoption process, each teacher in William's school contacted a teacher from the adopted school (for example, an English teacher contacted another English teacher), and each student in William's school contacted a student from the same grade level in the adopted school, and so forth for all stakeholders in the school environment. Even the schools' secretaries and families connected. Naturally, the contents of these contacts developed according to the communicators involved: The school leaders discussed leadership issues, the teachers spoke about the subjects that interested them, and the pupils talked about their own interests. William relayed his holistic vision:

When I plan a project, I initially have a vision of it complete, and this vision guides me all the way through, up until the implementation of the idea. The vision shows me the whole picture of the project, including its details. In this project I also had the overall concept, when I first contemplated this unique idea, filling in the details as I went on.

This project was not designed by compiling a list of specific activities; rather, William visualized the project as a whole, from the start, and led his school toward that vision. Imagining the overall picture facilitated the formation of various details needed for the actual activity at hand; thus, having a whole vision of the complete project (leading wholes) provided the systems thinking necessary to later pay attention to the details.

Principals articulated the usefulness of the holistic perspective in many arenas of school leadership, at a range of levels from the macro to the micro. Rose, a high school principal with 9 years of leadership experience, described her habit of applying the holistic perspective to the handling of a single student, by seeing the whole picture and not only its separate parts:

Sometimes when we have a complicated underachieving student, I schedule a meeting of all concerned, inviting everyone who is involved with the student, not only all of his teachers but also the other figures who have contact with him, such as a fitness trainer or the school maintenance person, and I guide them to create an integrative picture of the students. In many cases these meetings are amazing, when the participants hear each other, discover new things, and suddenly begin to truly understand the student.

By implementing her holistic conceptualizations, Rose helped her staff members to open their eyes to the whole picture—including all of its varied, compartmentalized, and segregated parts—regarding one student with challenging needs. Viewing each student as a whole world and seeing that student holistically permits much greater educational success.

Holistic thinking may be significant, too, in the context of parent-school relationships. The systems-thinking approach advocates taking into account the system's environment and its relationship with the system (like System 4 within the managerial cybernetics approach to a viable system model, see Sect. 3.2.1). In fact, the environment may be seen as a part of the system in its broader sense. Considering pupils' parents as an inseparable part of the school system is a holistic way of approaching the somewhat sensitive issue of parents' involvement in school life. Holistic acceptance of parental involvement as part and parcel of the larger school system surpasses the view of parents as a completely external. When the parent are disconnected factor—they will not become the school's partners; they may become the school's comptrollers and opponents, a position that could possibly even pose a threat.

During a focus group meeting, Deborah, an elementary school principal with 12 years of experience as principal, explained this point of view where parents are considered potential partners in the work of the school:

Sometimes parents want us to make a decision regarding their child that we think is wrong and not in the child's best interests. But I don't expect parents to always back us up automatically either; I aspire for the school and parents to work together for the benefit of

the child. We have to meet the parents, listen to them carefully, learn from them, and also explain our positions to them. Then we can try to reach a joint decision. We can explain to them why we think we're right, but we mustn't be arrogant. The parents are an inseparable part of our schools. We have to cooperate with them; there's no other way to succeed.

Thus, thinking and working together with parents, while considering them to be an integral part of the holistic school system, offers advantages over regarding parents as opponents or as disconnected from the system. Similarly, leading wholes implies the principal's incorporation of external authorities and agencies as part of his or her holistic conceptualization of leading the larger school system. Relationships with the local government municipalities, national education superintendents, policy makers, reform initiators, school neighbors, and community organizations with which the school is in contact should also be considered as parts of the system under the helm of the school principal. Thus, collaborative relationships between the school and these bodies are essential, whereas disengagement and lack of cooperation can render damaging costs for the entire system.

An important benefit of the holistic leadership view is that this approach may enable school leaders to tolerate ambiguity and work under circumstances of uncertainty. In the typically ill-structured world of everyday problems on the ground in schools, a holistically oriented principal, who is accustomed to leading wholes, can understand that the seemingly separate details of the current situation are actually parts of one big picture. The principal's lack of current knowledge about all the details of a particular situation would not hinder his or her efforts to solve the system's problem and meanwhile to deal with interim tasks based only on currently available partial information. As just one example, a case in point was given by Michael, a high school principal with 6 years of leadership experience, who described a dispute he had with senior staff members in his school about planning a new school year under the naturally vague and changeable conditions existing at the end of the summer:

Some position holders in my school can't start planning the next school year until they get all the needed information. You have to understand, during the planning of a new school year, there is a lot of uncertainty. Only very late do you have all the information you actually need for the new school year. Actually, you have it after the new school year has begun; as a matter of fact, maybe a month or two later... And based on this lack of information you're supposed to plan the new school year: to determine how many classes there will be in your school; to determine the role of each teacher and how many hours he will work; to accept new teachers, etc. As I said, some position holders in my school can't plan a new school year until they get all the information about it. They think that we shouldn't make a plan, because there's a risk that we'll have to change it later. They want to wait until we have all—or almost all—the information, and only then to start planning. But I don't think so. I see the next year as a big picture, parts of which are covered up, slowly unfolding and revealing themselves. You can see how such a picture would look, more or less, even when part of it is still hidden, so it's possible to plan the next year despite the uncertainty. We should use the available information, and start planning based on it, and as time goes on and we know more and more, we can continuously refine our plans.

Some of Michael's team members found it difficult to work without knowing all of the system's minutiae; they showed low tolerance for uncertainty and felt they

had to thoroughly understand all the details involved in a given problem in order to be able to reach a decision and come up with a solution. According to Michael's point of view, on the other hand, the ability to function under uncertain conditions resulted from his ability to see the whole, or as he said, "the big picture."

Our research findings indicated that those school leaders who possess a holistic point of view themselves are inclined to demand such a viewpoint from other staff members in their school. Such principals tend to believe that their teachers must not consider only their own jobs but rather their entire school. These principals believed that teachers should feel a sense of responsibility not only toward their own pupils in class or toward the specific subject matter that they teach, but also they should feel accountable to the vision and purpose of the whole school. For example, Gamila, a senior elementary school principal with 18 years of leadership experience, said during a focus group session that such a holistic approach may be justified for a deeper reason as well:

I often tell my teachers that when they see a student misbehaving, they should reprimand him even if he is not their own student. If a student resorts to violence or vandalism, or even just throws trash on the floor—a teacher who's just passing by should reproach him even if the teacher doesn't know his name. I believe that a teacher at a school is not only the teacher of his or her own pupils; the teacher is part of the school team, which is responsible for educating all the children. As a school staff member, that teacher is an educator of each and every student at the school.

Gamila regarded teachers as members of one large organization, which operates as a whole, meaning that all teachers should promote the entire school together. A single teacher must not focus only on his or her narrow job description, but rather must feel responsible for the whole school's output, and therefore should discipline other teachers' students as well.

Alexander, an elementary school principal with 5 years of leadership experience, made similar demands from his teachers about endorsing a holistic outlook toward the school as a whole, which he described as a "cohesive" system, with practical benefits such as helping colleagues maintain class order. During a teachers meeting that we observed he said:

Every student has to feel that his teacher is not alone but rather is getting help from colleagues. That will make students keep the school rules more readily. In a school where each teacher sees himself as part of a cohesive group, the teachers take care of their colleagues' classes when they're absent, they agree to help other teachers by "hosting" their pupils for a while, and things like that.

Alexander claimed that when teachers consider themselves "a cohesive group," students are more likely to comply with classroom codes of conduct and to refrain from violating school policies and educational norms. Like Gamila, Alexander also saw the whole beyond the parts and therefore did not consider the school staff to be individual teachers in separate classes.

Another situation that school principals may aptly view from a holistic perspective is that of class composition. Group dynamics in the classroom often uniquely prove the antireductionist assertion (see Chap. 2) that the whole is more,

or at least different, than the sum of its parts. That is, groups of students present different features and behaviors as a whole entity than they do as separate individuals. In the systems language, this is an emergence—whereby larger entities are characterized by features, which arise out of the interactions among simpler entities that themselves do not exhibit such features (see Sect. 3.3).

Holistically aware principals often initiate the redistribution of existing classes as a common practice at the beginning of the school year, to prompt changes in the group dynamics by shifting different students of a specific age group to other classes. Staff members usually invest a lot of time and thought into planning this redistribution, which requires deep systems thinking in order to maintain classes' equality in terms of size, pupils' learning abilities and behavioral compliance, proportions of boys and girls, and so on. To create balanced classes, information about the pupils must be collected from the teachers who taught them during their previous years at the school.

However, many times, despite such efforts to achieve equality, the classes eventually turn out to be very different from each other. This inequality may result from many surprising changes: Pupils who were quiet suddenly became boisterous, pupils who were marginal abruptly became leaders, pupils who were under-achievers and disruptive unexpectedly became motivated, and so forth. In her discussion of the effects of group dynamics in the classroom, Sarah, an elementary school principal with 12 years of experience as principal, revealed her view that a group of students may present features that differ surprisingly from the sum of the individuals' traits:

In our school we divide the pupils into new classes for their third year at school. Many times, despite our hard work [to create equal classes], eventually the classes become very different. And then someone always suggests, after a period of time, that we should mix the classes and re-divide them, because now we already know the pupils well and can create equal classes. I explain to my staff again and again that even if you know each student's personality very well, you can never foresee exactly what sort of characteristics the whole class will take on. A class as a group is not just the sum of the students comprising it; when you put them together they have all sorts of interactions, and they influence each other in so many ways that all of them are transformed. This is a very important principle, which is true in other contexts too.

Sarah's holistic, systems-thinking claim about classrooms—that a class's features are determined by more than the sum of its individual pupils' previously known personalities—and her generalization of this claim to other contexts reflects an orientation toward seeing the big picture and not only its separate parts. Just one possible additional context related to this holistic view of group dynamics would be the influence of the different homeroom teachers assigned to these redistributed classes. Furthermore, groups of school faculty members, when meeting together in different collaborative variations, may demonstrate unexpected features and behaviors as a whole that differ from those they reveal as separate individuals.

In essence, this *Holistic School Leadership* characteristic of leading wholes—seeing the whole picture beyond its parts—is very important with regard to the

entire school as well as regarding various issues transpiring within the school. The principal's holistic knowledge about how numerous separate details can combine in multifaceted ways to create the entire school may result, on the one hand, in the principal's greater tolerance for ambiguity and, on the other hand, in the principal's stronger belief that teachers should be held accountable to the wider system, beyond their own specific teaching jobs. Leading wholes thus permits principals to understand that a whole system may present emerging properties that are not explicitly apparent in the properties of its components.

LEADING WHOLES:

- Leading an organizational concept
- Perceiving a single, sometimes minor, issue as a whole system
- Embracing community-school relationships
- Tolerating ambiguity and uncertainty
- Calling teachers to perceive themselves as members of one large organization
- Recognizing that the whole differs from the sum of its parts in school dynamics
- Envisioning how school properties continuously evolve through interactions

6.2.2 Adopting a Multidimensional View

The second core characteristic of *Holistic School Leadership* that emerged from our research is principals' adoption of a multidimensional view. Each and every element or part within the large and complex school system as a whole inevitably has a context that influences it; therefore, there is always more than one reason, explanation, implication, or answer related to that part or element of interest. Following this assumption, a holistically oriented principal must be able to simultaneously take various aspects and dimensions into consideration. Such a multidimensional view falls under systems thinking because it results from the ability to *see the whole beyond the parts*, which is one of the two major meanings of systems thinking, as shown on Fig. 6.1 (Sect. 6.3).

As one example for a principal characterized by such a multidimensional view of the school system, James, a high school principal with 8 years of leadership experience, described how he initiated a multidimensional process to improve pedagogy in his school:

Now I'm leading a comprehensive pedagogic improvement process. This is a long and complex process that concerns not only our teaching. It includes an occupational aspect when it comes to a change in our team composition; an emotional aspect, because the teachers have to change their work methods; it changes our connection with the middle school and has many additional repercussions. Seeing the whole process, with all of its components, helps to drive the entire school to its destination.

James understood that the complex process of pedagogical improvement required a holistic, multidimensional approach that encompassed not only the instructional domain but also several other domains simultaneously.

Principals revealed a multidimensional view when they attributed a single incident at school to several different causes, therefore judging any one single explanation for a specific occurrence as inadequate. During a focus group meeting, Joshua, a high school principal with 5 years of experience as principal, elucidated this multidimensional view:

I'll give you an example. At the meeting we just held, we discussed our results on the national examinations. The results were not as good as we believe they could have been, and during the discussion some of the staff pointed to "the sole and exclusive explanation" for this: One teacher said that the reason for our poor achievements is the lack of an instructional coordinator; another teacher claimed that we simply do not allocate a sufficient number of hours to language classes; and still another teacher claimed that our teachers are not professional enough and do not know how to teach. This phenomenon, of pointing to the supposedly exact cause for anything that happens, reappears in many of our discussions. There's always somebody, or a few somebodies, who "know" the exact cause for the problem at hand. I believe there's never one single reason for anything that happens in a school, or anywhere, for that matter. A school is such a complicated entity, consisting of so many components that influence each other, that there are always quite a few reasons for anything that occurs in it. Of course, some of the reasons are primary and some are secondary, but you can't point to one single reason for anything, and if you do look for such a reason without considering all the various factors influencing the situation—you won't get a full explanation of reality. Whenever you want to solve a problem at school, or to improve a particular area, you must take into account the variety of factors affecting it.

Joshua was capable of juggling several notions at once regarding explanations for his school's disappointing results on the national examinations, believing that no single reason exists for anything that happens in a school, and no single opinion represents the sole truth. He added that this supposition holds true for the country's educational system as well:

In order to improve the national educational system you can't focus on one solution only, such as reducing classes' size, raising teachers' salaries, or adding study hours. An inclusive plan must be constructed, consisting of several practical steps, which all together may improve the national educational system.

Like the belief that there is always more than one cause and one explanation for a single occurrence at school, the consideration of various response options to a single situation was another manifestation of principals' multidimensional view. Some principals asserted that every situation has a wide range of response options, asserting that even a situation that repeats itself justifies examining possible alternative reactions each time, while refraining from adopting a single pattern

consistently, over and over again. Samuel, an elementary school principal with 10 years of experience, described this multidimensional point of view regarding challenging students. During a discussion about a complicated student, which we observed, he said:

Sometimes we get used to responding to complicated students in a few set ways that we use again and again, such as suspension or exclusion. But there are infinite possible ways to handle a complicated student, so we should be creative and diverse in our courses of action. We cannot be repetitive; only if we constantly expand the range of practices that we use will we succeed in dealing effectively with misbehaving students.

The core premise of the multidimensional view is that more than one option is possible in any given situation. Moreover, sometimes two opposing options, which may seem mutually exclusive, can both be possible concurrently. Daniel, a middle school principal with 11 years of leadership experience, explained this seeming paradox:

When we deal with two contradicting options, I often say that the two opposites are both true. I will give you an example. Teachers often can't decide whether to be tough or attentive: Some claim that we must be tough, setting clear limits, being consistent and uncompromising, whereas others claim that we should understand the child's mind and be sensitive to his/her needs. Now see, those who claim that you need to be somewhere in the middle also view the two options as contradictory, as do those who say you have to sometimes be tough and sometimes be compassionate. But the true is that these two ways of relating don't really contradict each other, they just look like they do. If you think about it, you will find that this holds true for many aspects related to our educational work.

Daniel's words exemplify how upholding a multidimensional view may result in principals' tendency to address not only the school's urgent issues but also its long-term issues. Multidimensionally oriented school principals usually assert that although urgent school events almost always demand immediate attention, these "putting out fires" activities must not be allowed to fill up the principal's weekly schedule, because school life has additional important facets that also require attention. For example, Sherry, an experienced elementary school principal, said that over her 12 years on the job she learned that the school as a complex system is more than just its urgent needs:

When I started out as a school principal, I often responded to the tyranny of the urgent: a missing teacher, a parent's complaint, a disruption in a classroom, etc. Today I think that the school principal should also take a step back from these day to day complexities, look critically at her school and consider the long run. The school is more than these local incidents; it is a complex system that requires deep thinking. Unless the principal plans and prepares for the times to come, she will always be in reactive mode, which will distract her from the school's really important questions.

On another occasion, Sherry repeated this notion:

If the school principal does not rise above the day to day difficulties, no one else will do it for her. It is the duty of the principal to see the big picture, beyond the urgent things that require immediate attention.

The ability to transcend immediate school needs and recognize additional concurrent objectives and tasks reflects a multidimensional view, where the principal

possesses an understanding that educational leadership work requires not only coping with urgent problems but also cultivating less salient parts of school life. Related aspects of this skill include prioritization and assessment of significance, which are explained below in regard to the characteristic of *evaluating significance* (Sect. 6.2.4).

Rebecca, a principal of a special education school with 11 years of experience, suggested a structured method for thinking about a given issue from a variety of perspectives by using a method adopted from Edward De Bono's bestselling book *Six Thinking Hats*. This method divides thinking into six functions, each of which is identified with a symbolic thinking hat of a specific color. According to this method, one mentally wears and switches hats, so as to easily focus and redirect one's thoughts. The white hat calls for focusing on facts, for example, and for information known or needed; the yellow hat calls for optimism and positivity; the black hat calls for judgment and pessimism; the red hat signifies emotion and intuition; the green hat signifies creative possibilities, new ideas, and innovative alternatives; and the blue hat is the control mechanism ensuring that all the thinking hat guidelines were observed. This method offers a well-rounded multidimensional contextualization of whatever issue the principal is facing, enabling the principal to take into account various considerations concurrently.

The multidimensional view is related to a willingness to learn from others' opinions, because a principal who understands that each situation has several aspects and several possible implications seeks to understand the full picture by listening to other points of view. In this context, Ben, an elementary school principal with 6 years of experience, stated:

When a school principal thinks that he knows everything and that there is nothing left for him to learn he will become "stuck" and eventually his "shelf life" will expire. For this reason, I like my management team meeting, because the contributions of its members support our ability to work smarter. Instead of operating as a "lone ranger" and feeling like I must know it all, I enlist the members of our management team to think with me about projects, processes, problems, and actually about almost everything. So, we come up with various perspectives to every situation.

According to Ben, an important ingredient of the principal's holistic, multidimensional ability includes self-awareness of one's one limitations; principals should not think that they know everything about their work. Instead, they should constantly learn from the diverse available people around them, who each can contribute different perspectives leading up to a view of the whole. Cynthia, a principal of a special education school with 11 years of experience, also described her willingness to learn from others—not just from her school's management team but from all of her school's staff:

I often consult through formal and informal discussions. Those I consult with may include my management team members, teachers, colleagues, administrative personnel, or even my family. I believe that a principal who is open to learning from everyone will be followed by her teachers, who in turn will become open to improvement and new suggestions. In this way, we will embrace various perspectives, sometimes contradictory ones, concerning every school occurrence. Our sages have already said: "Who is wise? He who learns from all people."

In sum, the multidimensional characteristic of *Holistic School Leadership* considers various issues from multiple relevant perspectives and viewpoints, as well as cognitively switching among perspectives in order to overcome problematic issues.

ADOPTING A MULTIDIMENSIONAL VIEW:

- Embracing contradictory views
- Identifying several causes for a single occurrence
- Considering alternative response options
- Considering several consequences for each option
- Looking for long-term consequences
- Learning from others

6.2.3 *Influencing Indirectly*

The third characteristic identified for *Holistic School Leadership* involves the use of an indirect approach when dealing with tasks and challenges. Understanding that each issue at hand is part of a large system results in the principal's awareness that it may be better to avoid dealing directly with every issue and instead to attempt to influence it circuitously, through feedback loops that constitute the system's structure and determines its behavior (see Sect. 3.1). Moreover, dealing indirectly with difficulties can also help avoid explicit confrontation in cases where it might exacerbate rather than ameliorate conflict. Addressing the school's separate components and subsystems as parts of one whole system—where changing one or more parts could influence the others indirectly due to mutual, reciprocal effects—is a view that falls under one of the two major meanings of systems thinking, that of seeing the parts in the context of the whole (see Fig. 6.1 presented in Sect. 6.3).

Roger, a middle school principal with 12 years of leadership experience, described during a focus group how he radically increased his school's achievements based on these circuitous influences:

I understood that in order to increase student achievement, I must improve teachers' instruction. So I began to provide the teachers with guidance regarding curriculum, strategies, and so on. But I also understood that directly improving instruction is not the whole answer for improving achievements. So I also tried to increase teachers' self-efficacy, consistently persuading them that they possess the ability to lead students to great success. But the most important step was the less direct step: I invested a lot of effort in fostering the teachers' emotional satisfaction from each other and with our school, and got them excited about our work, telling them over and over again that teaching is a job and a career, but also a calling. This is what made the difference.

According to Roger, the most important step was the less direct one. Roger's perception reflects the importance of feedback loops, which are actually responsible for creating behavior within the school (see Sect. 3.1). Put differently, Roger identified a leverage point, which are changes that might introduce a substantial improvement by minimum effort (see Sect. 10.3). Similarly Eva, an elementary school principal with 12 years of experience as a principal, advocated using the indirect approach regarding school violence:

To stop school violence from occurring in my school, I first made rules and procedures very clear to students and parents alike, but I also took indirect actions: I made conflict resolution part of my school's curricula, and mainly tried to make classroom and school environments more welcoming by integrating lively and interesting activities. School life doesn't have to be limited to textbooks and blackboards. Science activities, art activities, and math activities build students' confidence and unlock their imaginations, and most importantly—create a positive school climate, without violence.

More broadly, Rafael, a high school principal with 6 years of leadership experience, explained that due to the interconnections among the various facets of school life, each school life area affects other areas, for better or worse, so that when problems occur at school, school leaders do not need to solve each problem separately. Rafael asserted that it is often enough “to properly solve one or two problems in order for the other related problems to disappear.” Thus, when principals comprehend and act according to the indirect influences characteristic of *Holistic School Leadership*, principals do not always need to address every issue that comes up during daily school life. Due to the possibility of dealing indirectly with challenges, it may suffice to handle only some of the issues because additional issues will automatically be altered by mutual influences. In other words, some problems are actually better off when indirectly handled, due to the mutual influences that evolve among factors within the school system. This indirectly handling is not only a more efficient use of the principal's time and resources, but also obviates unnecessary conflicts and tensions.

Similarly, Sharon, a high school principal with 5 years of leadership experience, was able to envision the school's indirect interconnections and attributed great importance to these interactions. To foster understanding of this systems thinking, Sharon offered a metaphor from her field of expertise—the natural sciences. During a teachers meeting that we observed she explained:

As a science teacher, I know that when something happens in a system we should explore the entire system to find out the exact reason for that particular happening. If, for example, our garden suffers from destructive aphids—we try to find out what cause the proliferation of that aphid. We may find that the emergence of the aphids is a result of the disappearance of seven-spot ladybugs, which eat the aphids. And why did the seven-spot ladybugs disappear? Because of the arrival of a new breed of birds that feeds on the seven-spot ladybugs. And what brought these birds? Resection of the forest that was their natural habitat, due to construction. So the resection of the forest there caused the aphids' destruction here. The same thing at school: When you have a problem, you have to look for the reason very carefully; the direct and immediate solution is not always the effective solution.

Utterances by school leaders who showed an ability to frequently influence their school processes indirectly showed that these principals did not tend to blame teachers for deficiencies that they evidenced in their conduct. Instead, these principals sought to motivate the teachers to improve their performance. Instead of directing their energy toward brooding on their teachers' mistakes or faults, even discreetly, these principals focused mainly on what actions they could take to promote teachers' functionality because they recognized the indirect influences of their own actions on the staff's level of functioning. Joseph, an elementary school principal with 8 years of experience as a principal, described the disagreements he had with his vice principal on this matter:

When I became the principal of my current school, I also began to work with my present vice principal. In the beginning, she often explained to me that the teachers were wrong: This teacher is irresponsible, this teacher is a slacker, these teachers don't invest enough effort, and so on. She did it all the time, out of the belief that these were the real causes of our school's problems. However, I felt very uncomfortable with her approach; I felt that according to her the teachers were our enemy, and the cause of our problems. Over time I shared my viewpoint with her, explaining to her that our teachers are our responsibility, and that our role is not to blame them for their mistakes but to prevent these mistakes in the first place by motivating them to work more professionally. Blaming is a dead end; it leads nowhere. You must understand that you are the one who needs to improve and should help them improve. As we are all connected, my improvement will result in staff members' improvement—not tomorrow morning, but in the long-run.

Joseph's statements about avoiding blame and taking responsibility for teachers' mistakes suggest his grasp of distinct connections between his own actions and the teachers' functioning. Viewing himself and his teachers as interconnected parts of the same system, he explained his goal of working with his senior staff to ensure the quality of the teachers' work.

To summarize, inasmuch as each element within the school functions as an interconnected part of an entire system, with implications for the system's other parts, school practices can be affected indirectly. Thus, school leaders should refrain from finding fault with someone or something outside themselves when things go wrong; instead, they should examine how their own actions can directly, and more importantly indirectly, contribute to improving the situation.

INFLUENCING INDIRECTLY:

- Looking for indirect effects
- Dealing indirectly with challenges
- Envisioning circuitous influences and multiplicity of effects
- Motivating teachers through responsibility rather than through blame

6.2.4 *Evaluating Significance*

The fourth characteristic of *Holistic School Leadership* is the ability to determine the significance of elements within everyday school life for the system as a whole. That is, principals evaluate significance by identifying the role, the importance, and the relevance of each element. As seen on Fig. 6.1 (Sect. 6.3), the ability to evaluate significance is consistent with one of the two major meanings of systems thinking, namely thinking about each separate component as a part of the whole system. Edna, an elementary school principal with 7 years of experience as principal, described this characteristic:

Life at school is made up of an enormous number of tiny events. At any given moment, there are a lot of incidents occurring at school, of many kinds, which all together constitute the school routine. As a principal, I'm exposed to a lot of those occurrences; every day I see or hear a vast amount of items of information, and the most important thing that I need to do is to identify which of those are significant. The significant ones are not necessarily noticeable at first sight, but due to my experience and my knowledge of the school I am able to identify the small events that have great importance: those that are a warning sign of a problem, a clue suggesting the right way to go, or an answer to a question that is bothering me. Today, for example, parents came to me to complain about one of the teachers. Complaints of parents about teachers is not unusual, but this complaint is a particularly important warning signal for me, because I suspect that it implies a serious problem in that class, which may worsen much further. So I plan to examine this specific complaint in depth.

Edna stated that she felt she had already gained enough experience to know how to identify which of the small everyday occurrences were of great significance for the whole system, unable to evaluate their importance and indirect influences.

Similarly, Tammy, an elementary school principal with 7 years of experience as principal, said she could “filter out” the less essential elements of the school’s complex and dynamic reality in order to analyze the most important management issues that needed addressing:

I think that over the years I have learned how to point to the most important issues in my school, and to discern the more important from the less important ones. Maybe it sounds simple, but in actual fact it isn't at all. The school is a very complex entity, which consists of many parts and components, and many issues requiring my attention. My job is to highlight and deal with the essential ones. I have to address all of my school's needs, even those that are less pressing, but I must distinguish between the more significant and the less significant, in order to give the more significant ones priority, invest more efforts in dealing with them, and avoid putting them off.

Tammy verbalized her feeling that she was able to prioritize the most important actions, putting aside incoming stimuli. When asked to give an example, she said:

Now, toward the end of the school year, for example, I pay attention to every student who says he plans to leave the school, so I won't be surprised by a wave of departures. During the summer, I pay attention to messages on new educational initiatives, and so on. I have learned how to differentiate my overall priorities at different times throughout the school year.

Along the same lines, during a focus group discussing decentralization, a worthwhile explanation of evaluating significance was given by Eleanor, an elementary school principal with 7 years of leadership experience. As she spoke about her developing ability to put her finger on the main issues pertaining to her school, Eleanor shared an important revelation. As an advocate of decentralization who tended to delegate authority, functions, and power to those working around her, she learned that the principal does not have to handle every trifle alone. Indeed, she found that when coping with the particularly important matters, the principal cannot rely on anyone else; she must get involved herself. Eleanor declared that “the trick” is to detect what are the school’s important matters, evaluating the significance of issue to the entire system. It is a complex challenge, but it is essential. For this purpose, skill and experience are indispensable, because in many cases the crucial matters are not conspicuous. Eleanor asserted that putting one’s finger on the crucial issues in time, even when those issues are elusive and misleading, is of the essence.

Patricia, an elementary school principal with 6 years of experience as principal who also participated that focus group, linked the ability to evaluate the significance of school life’s elements to the ability to effectively balance the school’s own needs, mission, and interests with the requirements imposed by external bodies:

As a school principal you are in the middle, between the interior and the exterior. External parties ask you to implement their policy, and for me it is a constant dilemma: to what extent should I meet their expectations and to what extent should I do what I think is good for the school. On the one hand, the Ministry of Education is my employer and my boss, and its instructions are generally reasonable and beneficial, but on the other hand I was chosen to be a school principal because I have my own educational judgment and I know what’s right for my school. I think that today, after I gained experience, I know how to balance between the perceptions of external authorities and my own opinions, because I understand which things are really significant and have long-term effects in different school operations.

Thus, principals who expressed knowledge about how to evaluate the significance of the school elements for the whole system were usually those who could also clearly identify the main needs of their schools. Recognizing the most important issues to address enables principals’ analysis of the school’s main priorities.

Another implication of this leadership characteristic is the ability to discern repeating patterns in school life and to link separate elements in order to derive their meaning. Mary, an elementary school principal with 9 years of leadership experience, described her ability to discover valuable management information hidden among the many details of everyday school life, paying attention to elusive hints and putting them together “like a detective story or a puzzle that has to be solved:”

Recently, I have realized that the teachers in our school think there’s nothing they can do better than they’re already doing. It seems to them that the way they’re working is the best under the given circumstances, and that there’s no room for improvement. The interesting thing is how I came to notice that. No teacher ever said explicitly that this is his or her

opinion; they were not even aware of it. I understood it after collecting a lot of clues. I saw something here and something there, and suddenly I had this insight that connected various points together. Each clue was very small and elusive, but all the clues together gave me a whole new picture, that I was blind to beforehand. And what happened next was no less fascinating: I started to speak about this insight with position holders in our school, and then I had a new, deeper insight: I understood my own part in creating this point of view by the teachers.

Although Mary knew her school very well, she still discovered something very essential about it that she had not realized beforehand: she knew the facts all along but did not notice that they were interrelated, pointing to a single conclusion. She figured out the pattern, learning the full, combined meaning of many different small elements of school life.

In sum, this *Holistic School Leadership* characteristic entails the capability to evaluate elements of school life according to their significance for the entire system. Thus, it consists of the ability to “filter” information and prioritize requirements and tasks, distinguishing between more important and less important issues to be resolved, understanding underlying structures, and identifying major patterns within school life.

EVALUATING SIGNIFICANCE:

- Looking for illusive but significant occurrences
- Balancing internal and external relationships and needs
- Identifying main needs
- Searching for repeating patterns

6.3 Conclusion

To recap, this chapter pinpointed four characteristics of *Holistic School Leadership*. The first characteristic is *leading wholes*—the conceptualization of all aspects of school life as one large system, so that when there is a need to change or improve it, the principal will not isolate small parts and attempt to repair them but rather will consider a large number of interactions as they mutually influence each other. The second characteristic is *adopting a multidimensional view*—the ability to “juggle” several aspects of a given issue simultaneously, noticing a wide range of reasons for its emergence and existence, taking into account a variety of its consequences and predicting various options for its future development. The third characteristic is *indirectly influencing*—upholding an indirect approach when dealing with tasks and challenges, based on the awareness that countless mutual influences are at play

Table 6.1 Four core characteristics of *Holistic School Leadership* as articulated by experienced school principals

Characteristics	Processes	Meanings
1. Leading wholes	<ul style="list-style-type: none"> • Leading an organizational concept • Considering a single, sometimes minor, issue in the whole system context • Perceiving a student as a whole system • Embracing community-school relationships • Tolerating ambiguity and uncertainty • Calling teachers to perceive themselves as members of one large organization • Recognizing that the whole differs from the sum of its parts in school dynamics • Envisioning how school properties continuously evolve through interactions 	Seeing the whole beyond the parts
2. Adopting a multidimensional view	<ul style="list-style-type: none"> • Embracing contradictory views • Indicating several causes for a single occurrence • Considering alternative response options • Considering several consequences for each option • Looking for long-term consequences • Learning from others 	
3. Influencing indirectly	<ul style="list-style-type: none"> • Looking for indirect effects • Dealing indirectly with challenges • Envisioning circuitous influences and multiplicity of effects • Identifying leverage points • Motivating teachers through responsibility rather than through blame 	Seeing the parts in the context of the whole
4. Evaluating significance	<ul style="list-style-type: none"> • Looking for illusive but significant occurrences • Balancing internal and external relationships and needs • Identifying main needs • Searching for repeating patterns 	

among various elements within the school, each of which is connected to others, affecting them and being affected by them. The fourth characteristic is *evaluating significance*—the ability to evaluate elements of school life according to their significance for the entire system, distinguishing between more important and less important issues to be resolved, and identifying patterns. Table 6.1 summarizes these four characteristics of *Holistic School Leadership*.

In order to categorize the four characteristics of *Holistic School Leadership*, we must remember the two main complementary meanings of systems thinking: (a) *seeing the whole beyond the parts*—rising above the separate elements to see the

entire system; and (b) *seeing the parts in the context of the whole*—thinking about each separate element as a part of the whole system, emphasizing the elements’ interrelationships rather than the elements themselves (see Sect. 2.1). Each of the four characteristics of *Holistic School Leadership* relates primarily to one of these two meanings of systems thinking (as shown in Fig. 6.1). *Leading wholes* means looking at the whole picture with regard to the entire school as well as to various issues that occur within it. *Adopting a multidimensional view* stems from the realization that because each element is a part of the large and complex school system it necessarily has more than one reason, one explanation, one implication, or one answer, and therefore principals must take various aspects into account simultaneously. Thus, each of these two characteristics reflects the first meaning of systems thinking: *seeing the whole beyond the parts*.

The other two characteristics reflect the second meaning of systems thinking: *seeing the parts in the context of the whole*. Indeed, the *indirectly influencing* characteristic is based on the understanding that each issue at hand is part of a large system and therefore principals do not need to deal directly with every issue but rather can influence issues circuitously. *Evaluating significance* means thinking about each separate component as a part of the whole system. Thus, the *Holistic School Leadership* approach has two aspects—*seeing the whole beyond the parts* and *seeing the parts in the context of the whole*—each of which is reflected and interrelated in two characteristics. The interrelatedness and interconnectedness among all four of these characteristics of *Holistic School Leadership* are implied by the bidirectional arrows shown in Fig. 6.1.

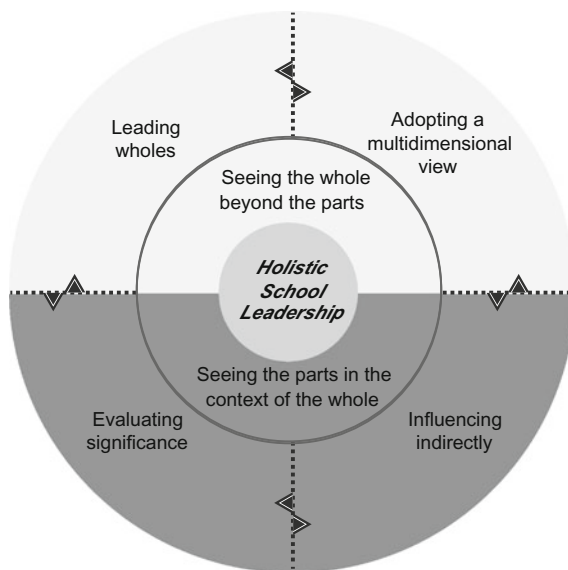


Fig. 6.1 Four core characteristics of *Holistic School Leadership* as reflecting the two main meanings of systems thinking

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Chapter 7

Sources of *Holistic School Leadership*

A review of the literature on systems thinking reveals that, to date, understanding remains limited concerning the processes by which professionals gradually acquire this complex approach that puts the study of wholes before that of parts, regardless of disciplinary domain. In particular, information is truly scarce on how systems thinking evolves among school principals. Researchers may explore two aspects of systems thinking's acquisition: (a) the myriad sources of influence that may lead to its acquisition and (b) the developmental process of acquisition as experienced by professionals over the career lifespan. The current chapter focuses on the first of these two aspects—the sources of *Holistic School Leadership*—those factors or mechanisms that enable or facilitate its acquisition. The following chapter (Chap. 8) focuses on the second aspect—the developmental process that professionals undergo over the years of their career while acquiring the ability to apply the *Holistic School Leadership* approach.

7.1 Existing Research on the Sources of Systems Thinking in General

Are there any sources to which systems thinking may be attributed? As Zonnenshain (2012) noted, there is an ongoing argument in the literature about whether systems thinking is an inherited or a learned ability. Some argue that the only source of systems thinking is natural talent, because it is something that one either possesses or does not possess, rather than an acquired ability (e.g., Hitchins 2003). Others assume that systems thinking is a mix of innate talent and acquired experience (e.g., Frank 2006). Still, other researchers claim that systems thinking can be developed just like any other skill (e.g., Zulauf 2007). In fact, students today

are offered curricula in systems thinking in quite a few universities. In this regard, several methods have been proposed as means of teaching systems thinking, such as hypermedia (Thurston 2000), metaphors (Taber 2007), case studies (Blizzard et al. 2012), hybrid models (Levin and Levin 2013), and modeling (Hung 2008). In keeping with this assumption that maintains systems thinking as a learnable skill, practical ways to develop *Holistic School Leadership* among school leaders are discussed in Sect. 9.6.

Research aiming to directly identify the factors or mechanisms that may foster acquisition of systems thinking is extremely limited. In the context of engineering, Heidi Davidz and her colleagues (Davidz 2006; Davidz and Nightingale 2008; Davidz et al. 2005) identified several primary mechanisms that enable systems thinking's development in engineers. These include experiential learning, which incorporates both work experience and life experience; specific individual characteristics, such as type of thinking, problem-solving style, interpersonal skills, and communication; and a supportive environment with regard to factors such as scheduling, cost constraints, and work design. Frank (2010), who explored the characteristics, roles, and attributes of systems engineers with a high capacity for the systems engineering type of thinking, listed three characteristics of their background and knowledge. First, these engineers often revealed *interdisciplinary knowledge*—wide, diversified, multidisciplinary, and interdisciplinary knowledge. Second, these engineers often had execute a wide range of jobs, and this *broad experience* seemed to enable them to become acquainted with many systems and technologies and offered them opportunities to work with senior systems engineers and learn from others' experiences. Third, these engineers often had an appropriate *educational background* for the role, whether formal or informal.

However, beyond these few studies, empirical knowledge about the topic of sources for systems thinking in general remains meager, especially with regard to school leaders. As a result, we conducted comprehensive empirical study targeting exploration of this topic for school principals in particular.

7.2 Our Proposed Four Sources of *Holistic School Leadership*

Our qualitative empirical research that uniquely investigated systems thinking as a management approach for school principals (Shaked and Schechter 2016) highlighted four major sources of systems thinking in school leadership. As in the methodology yielding the four core characteristics that we reported above (see Sect. 6.2), we identified the four major sources of *Holistic School Leadership* through an inductive process of generating themes grounded in the various perspectives articulated via in-depth interviews, observations, and focus groups for heterogeneous samples of school principals in Israel along a range of career stages. The four sources of *Holistic School Leadership* that emerged from this empirical scrutiny consisted of: (1) *managerial experience*; (2) *role model*; (3) *academic*

study; and (4) *natural tendency*. In line with the systems-thinking perspective, these four sources are not distinct, but rather interrelated and interconnected, as will be explained below (Sect. 7.3). Next, we present each of these four sources, furnishing excerpts from the principals' own descriptions to help clarify these mechanisms that assist principals in developing school leadership.

SOURCES OF *HOLISTIC SCHOOL LEADERSHIP*:

- Managerial experience
- Role model
- Academic study
- Natural tendency

7.2.1 *Managerial Experience*

According to our research, the primary and most important source of *Holistic School Leadership* is the slow buildup of actual experiences while holding managerial positions. This is consistent with Davidz and her colleagues' (Davidz 2006; Davidz and Nightingale 2008; Davidz et al. 2005) finding, mentioned above (Sect. 7.1), that experiential learning is one of the mechanisms enabling systems thinking's development among engineers. In the realm of school leadership, managerial positions expose school leaders to the school's systemic aspects, facilitating and requiring understanding of the whole system. For instance, Aaron, an experienced high-school principal who participated in one of our focus groups, squarely attributed his systems thinking to his 8 years of professional experience in the role of principal:

I want to go back to your question about how we developed our systems thinking. I think that the main factor that contributed and actually still contributes to my systems-thinking ability is my experience. In my opinion, you can't develop your systems-thinking skills except through years of experience. There is no substitute for experience, and there are no shortcuts in this matter.

Eric, an experienced principal of a middle school having served in this role for 11 years, who also participated in that focus groups, agreed with Aaron's assertion about the importance of years on the job as a prerequisite for the development of systems thinking. Yet, Eric added that, in addition to mere years of managerial experience, principals must also demonstrate the readiness and ability to learn wisely from those experiences:

I agree that you can't be a good school principal and you can't develop your systems thinking without experience. However, experience does not necessarily result in expertise. Twenty years of experience can be 1 year's mistakes repeated 19 times. So in my opinion, experience will only contribute to development of systems thinking if principals are capable of learning from it.

Other experienced principals likewise identified the gradual process of learning over years of managerial experience as the main source of systems thinking among school principals. Thomas, for example, who held the principal role for 8 years, emphasized the slow, gradual nature of this accumulating experience in his high school:

If I look for the roots of my systems thinking, I believe that being a school principal is a continuous chain of events and happenings, each of which teaches you something you didn't know before. Over the years you gain work experience that makes you a skilled principal. I can point to some important events, not necessarily prominent ones, which especially taught me a lot, but basically I learned a little bit at a time, and over time I developed my systems thinking.

As each school principal may well know, school management has its highs and lows—great moments of happiness and enthusiasm as well as moments of doubt and disappointment. The development of *Holistic School Leadership* is most probably due to a combination of all of these moments, which manifests the many components of continued cumulative experience. Difficulties and tensions are part and parcel of this package deal, which helps build up *Holistic School Leadership* and a successful school leadership career. Leah, a principal of an elementary school with over 14 years of experience in this role, was able to look back at the beginning of her journey as a principal and refer to those early tensions as related to an inability for systems thinking. She emphasized that it took more than a few years to develop a genuine ability “to see the big picture,” which is one of the characteristics of systems thinking:

You know, it's scary to try to perform a task for which you're unprepared. But this is the situation facing beginning school principals, because you can't be prepared without doing it for several years. There is no other way to learn it. So you have to begin unprepared, and then acquire the ability to see the big picture.

According to Leah, one cannot be truly prepared for principalship without actually performing the role for a few years. Sometimes the price paid for this is high, but there is no alternative to accumulating managerial experience. Leah added that when encountering less experienced principals she would constantly feel the urge to spare them the indecision and mistakes that she had gone through by imparting to them the experience she had acquired so laboriously over the years. Yet she soon realized this was impossible, as every individual must gain his or her experience individually over a significant period of time, learning on the job in order to truly acquire the ability to see the “big picture.”

An important insight into this source of *Holistic School Leadership* is our finding that managerial experience may often begin to be acquired even before a school principal is appointed to that role. Many principals perform some kind of mid-level managerial role in their former capacity as teachers—such as grade-level coordinator or assistant principal. Such mid-level positions require that teachers bear in mind the school’s complexity and simultaneously consider multiple aspects of its workings.

The managerial experience that helps develop systems thinking may even have its early roots before working in the school system itself. Jacob, a preservice principal with 18 years of prior teaching experience in a high school, saw his holistic view as originating in his military service. As a commander, Jacob had to assimilate different aspects of the system, and this managerial experience developed his systemic approach. During his principal preparation program, Jacob related:

Before I began my educational career I had a significant military career, filling several command positions. Being a commander has many meanings that later assisted me as an educator: having responsibility for your people, motivating them, striving for excellence, and more. One of the aspects of a command position is the need to integrate a lot of your unit’s features, components, and connections. Without the integration of everything related to the unit—your unit won’t be able to function and excel. That’s how I learned to see systems as a one large entity.

As aforementioned (Sect. 7.1), Frank (2010) identified *interdisciplinary knowledge*—diversified, multidisciplinary, and interdisciplinary knowledge—as one of the characteristics of background and knowledge of systems engineers with a high capacity for the systems. Frank’s finding may explain the development of systems thinking by Jacob, who gained experience not only in education.

Yet for the most part, the many utterances by our study participants about the contribution of managerial roles to the development of their systems thinking attest to the evolution of *Holistic School Leadership* abilities through varied forms of mid-level management experiences within the school. For example, when observed during her principal preparation program, Natalie, a preservice principal with 20 years of prior teaching experience in an elementary school, described the expanding systems-thinking viewpoint that she gained when she began working as an assistant elementary school principal:

When I became an assistant school principal, I began to see the whole school rather than only a single class. As long as I was a teacher in my class, I didn’t understand how things look from the point of view of the whole school, but since my appointment as the school’s assistant principal I learned over time that there are many considerations to be taken into account.

Likewise, Miriam, a preservice principal with 8 years of prior teaching experience in a high school, described how she developed systems thinking progressively, in correspondence with the new managerial roles that she held over time in the school:

The development of my systems thinking was gradual. Initially, as math teacher, I can now say that I didn't really have systems thinking. All I cared about was that my students would succeed on a math exam. I did not take into consideration that the students were also studying other subjects, which had their own requirements. I gave my students assignments without any regard for the rest of their school subjects. Obviously this caused grievances among my students and among other teachers. Later I was appointed to be the coordinator of mathematics, and then I was responsible for the success of all students in mathematics. I began to see a broader picture of the range of students and teaching staff. Then, when I was appointed to be a pedagogical coordinator, my view of the system became even broader. It's not just math, but accountability for other subjects too. I began to be exposed to interactions between different coordinators, different tests, internal and external exams, and more.

During her first year as a novice elementary school principal, Melissa described her preservice work as an educational counselor as having helped prepare her for her school principal role. She attributed vast importance to her intense involvement in multiple aspects of the school's management, including opportunities for decision-making, groupthink, consultation, and leadership responsibilities, which she described as helping her learn to "understand the school as a whole system:"

As an educational counselor, the school principal consulted with me on many things, and I advised her in all deliberations relating to school. I was party to all key processes in the school, and I participated in many meetings. There were also quite a few processes that were my responsibility, and I led them. That's how I learned to understand the school as a whole system, so I feel I was prepared for this position of school principal.

Norma, a prospective principal with 16 years of prior teaching experience, was still working as an educational counselor in an elementary school at the time of our research, while enrolled in a university preparation program for school principals. Norma also described the counselor role as significantly contributing to her development of systems thinking, mainly in the contemporary expectations from the school counselor, which were recently re-defined:

The counselor's work was previously in a closed room, and was mainly focused on one-on-one relations. Today, the counselor's work is wide and systemic; the previous approach is less accepted. I see my systemic ability as an effective, large advantage. I feel like I run my time and my job effectively when I look at the whole system, because I am also a partner in the systemic organizational processes.

These statements by prospective and novice principals like Natalie, Miriam, Melissa, and Norma demonstrate how holding various mid-level school managerial roles—like that of assistant principal, pedagogical coordinator, or educational counselor—considerably helps to develop systems thinking. In particular, preservice and early inservice principals highlighted the importance of "joining the management team" as a crucial, defining moment in their development of an ability to see the whole system. For example, Amanda, a preservice principal with 10 years of prior teaching experience, clarified that it was only upon appointment to her elementary school's management team that she was exposed to the school's

complexity and therefore was able to take “a new look at the whole picture.” During her principal preparation program, Amanda reflected:

I’ve been working at my school for 10 years, but just 3 years ago, I joined the school’s management team, and that was a turning point for me. Since being appointed as a management team member, I began to understand how the school works, because I was exposed to the uncertainty, deliberations, connections, and consequences of everything. I see a lot of things I didn’t see before, and it gives me a new look at the whole picture. I learned how to think as a school principal, who takes a lot of considerations into account and combines them all to reach the optimal decision.

Likewise, Angela, a preservice principal with 24 years of prior teaching experience, reported that she only began to think at the systemic level when her principal assigned her, along with the other grade-level coordinators, to the high school’s management team. She thus highlighted that merely filling a managerial position at school is not always sufficient in itself as a source of systems thinking, unless accompanied by genuine access to opportunities to see the broader wholes in the system:

In our school the role of grade-level coordinator used to be limited. As a grade-level coordinator I’d guide all the teachers in my grade level and arrange activities, but I was never party to thinking about what was happening at the school in general. The level coordinators weren’t part of the school administration and were not connected to it. But then the current principal, who sees things broadly, came and made the change. He added the level coordinators to the management team, and we began to participate in that team’s regular meetings every week. This step gave new meaning to our role and pushed us forward, because it made us an integral part of the school leadership. That is what changed my view: I started to think differently, to think broadly. I see the entire school.

The change from teacher to mid-level manager signifies a shift from the tendency to focus narrowly on subject matter or classroom practices to a wider lens that can better view the complexity of the school system. However, this progress in systems thinking reported by prospective and novice principals should be considered proportionally in view of the aforementioned experienced principals’ self-reflection that attested, retrospectively, to an immature grasp of systems thinking in their early years of the role. As elaborated further in Sect. 8.1 on career stages, only years later were Aaron, Eric, Thomas, and Leah able to understand how important their numerous years of cumulative experiences were to the maturation of their systems thinking.

In sum, the first source of *Holistic School Leadership*, comprising *management experience*, refers to the learning experiences that school leaders gain prior to and during the period of their principalship. Such experience may include having held a mid-level managerial position such as that of grade-level coordinator in a school, or management experience on the job as an acting school principal, or even a managerial position outside of the school system. These managerial experiences enable both prospective and inservice principals to gain a holistic view of the school’s subsystems, with their implicit connections and continuous interactions.

MANAGERIAL EXPERIENCE AS A SOURCE OF *HOLISTIC SCHOOL LEADERSHIP*:

- A mid-level management position
- School management team membership
- On-the-job management experience as an acting school principal
- A managerial position outside of the school system

7.2.2 *Role Model*

The second source of systems thinking in the field of school leadership is the experience of working alongside someone who is already performing at the systems-thinking level. Exposure to the active, effective performance of such a figure seems to inspire the observer to become a systems thinker as well. In our research, participants repeatedly pinpointed their previous employers—other school principals—as positive role models for their own *Holistic School Leadership*. As a case in point, Paul, toward the end of his first year as a novice elementary school principal, unmistakably identified his previous principal as the person from whom he learned systems thinking:

I worked under several school principals, but I learned the most from my last principal, who was an unusual person. He made me think systemically. He always thought about things in an original way, looking a few steps ahead and suggesting how things are connected. He inspired me, and I now think more broadly about things, trying to connect different things all into one process.

Similarly, Shirley, a preservice principal with 19 years of prior teaching experience in an elementary school, declared during her preparation program that she had developed a holistic point of view while working alongside a principal who had linked everything at school to a clear vision. During a focus group session she said:

Almost all schools these days have a “vision,” but all too often the vision isn’t worth the paper it’s written on, because it includes empty pronouncements that no one really intends to actualize. In our school it’s different: We have a vision that embodies the best thinking about our school’s improvement, inspiring us to reach for ambitious goals. The school principal led the articulation of this powerful vision, and since then she has linked every decision, every project, and every deliberation to the vision. Since I was exposed to her worldview for a long time, I learned, bit by bit, how every element of school is linked to the overarching concept, which affects everything.

Martha, a preservice principal with 13 years of prior teaching experience in a special education school who also participated in that focus group, emphasized

beyond mere exposure—what the role model could do specifically. She helped to define who a systems thinker role model should be—in her case, a principal who invested explicit efforts in systematically externalizing her own systems thinking, thereby methodically instructing her staff in that managerial approach:

I also work with a school principal who consistently expanded our point of view. She always explained her decision-making considerations, the likely consequences of a certain event, the implications of a planned process, and so on. That's how we learned to understand the school's mindset, seeing things broadly, deeply, and holistically.

According to Martha, her principal not only set a personal example by modeling systems thinking but also was careful to explicate it, showing how different elements in the system influenced each other. In doing so, she was a powerful motivator for her staff to apply a *Holistic School Leadership* approach. Similarly, Esther, a preservice principal with 20 years of prior teaching experience, described a high school principal who took the time to teach position holders at her school “to see a lot of options in any given situation,” a view that reflects systems thinking:

I think that the principal's schedule tells you a lot about his or her priorities. My principal spends a great deal of time in personal meetings with the school's position holders. The goal of these meetings is not just practical issues but also to help to gain a deeper understanding of educational work. One of the things I have learned thanks to these weekly meetings is to see many options in any given situation. I used to think that there are always only two options, two extremes, two opposites, and my principal taught me that there are always many more options and that even conflicting options can be chosen at the same time.

Most of the participants who attributed their systems thinking to a role model spoke about their school principal. However, other persons could also serve as a model. For example, Rafael, an experienced principal who held this leadership role for 8 years, said that he had been fortunate to enrich his systems thinking—learning “to take a macro view of the entire domain”—due to his joint work with a highly esteemed elementary school educational counselor:

Last year a new educational counselor came into our school, from whom I learned a lot. She has a deep understanding of the school: She understands processes in a comprehensive way, and I would even say that she is able to forecast, anticipate, and foresee the future. She is able to imagine how things will evolve in the future and, thus, to plan accordingly. I learned from her to take a macro view of the entire domain, not just the specific minutiae of the immediate domain.

Ethan, a middle-school principal with 8 years of experience in the role, also expanded his systems thinking owing to one of the teachers on his team. Interestingly, this teacher was a systems thinker despite his young age and experience (see natural tendency below—Sect. 7.2.4). Ethan referred to this young teacher as helping him “consider issues from a wide range of perspectives:”

I have a young teacher who does not yet have a teaching certificate, and he understands the school's essence much better than any other teacher. Consulting with him and listening to him is more valuable to me than consulting with the school's senior teachers. After each meeting with him I feel I have increased my ability to consider issues from a wide range of perspectives, to appreciate their differences, and to make appropriate decisions.

Another important attribute of a previous employer who was seen as a source of systems thinking was the supportive environment that the role model had created. When the role model was a prior principal, the study participants often described not only a personal example of conduct but also a climate in the school that often empowered the school staff. For instance, Olga, a first-year elementary school principal, explained how she developed *Holistic School Leadership* due to her former principal's trust:

I think that I developed my systemic view due to empowerment. My principal used to give roles to teachers, and when you get a role that relates to the whole school you must expand your view. I felt that my principal trusted me, and I did not want to disappoint her, so I thought a lot about how to fill this role well, and as a result I learned to see the wider picture. Maybe it does not work for every teacher, but for me the role I got developed in me an ability not just to be a teacher for my own class but also to be someone who thinks about the whole school.

Similarly, principals who appreciated their teachers' opinions, and therefore usually listened to what the teachers had to say, were inspirational to their staffs. The very feeling of being listened to, of genuine attention, expands one's commitment to the entire school. It makes teachers feel that they are part of something bigger, imbuing them with a sense of belonging. This makes them to think not only about their own needs but rather about those of the whole school.

In sum, the second source of *Holistic School Leadership* that principals identified was that of a *role model*, referring to the impact of working alongside someone who possessed a well-developed capacity for systems thinking. This role model was usually a former principal who led the school through the use of systems thinking, thereby imparting this view to the school's management team and creating an atmosphere that promoted systems-thinking development.

THE ROLE MODEL AS A SOURCE OF *HOLISTIC SCHOOL LEADERSHIP*:

- A former principal who led the school through systems thinking
- Working alongside a colleague who has a broad view
- A supportive and empowering environment

7.2.3 *Academic Study*

Another source of *Holistic School Leadership* that principals easily identified was relevant academic study. This finding is in line with Frank's (2010) argument, that systems engineers with a high capacity for systems thinking often have an appropriate educational background, whether formal or informal. Some principal preparation programs offer a special academic course explicitly focusing on systems thinking, with the main goal of introducing this concept to aspiring school principals. As a case in point, Sandra, a novice high school principal who had participated in such a course during her preparatory studies the previous year, referred to Senge's (1990) "laws" of systems thinking (see Sect. 3.1.1–3.1.2, and Sect. 4.1) as she had applied them during her first year on the job:

As part of our studies in the principal preparation program, we were exposed to the laws of systems thinking. One of the laws that I use sometimes, because I found it significant for my work, is the mistake of "I am my position." This happens when a teacher focuses only on his own role within the school, that is, as a teacher of a particular class or a particular subject, because a teacher mustn't think just about his own role at school, but has to think about the whole school. I'll give you an example. Recently I told a teacher, who taught a certain age group for many years, that I plan to move her to a different age group next year. She was strongly opposed, and I explained to her that she doesn't work only with that specific age group; she works at our school, which includes several age groups. It might be more comfortable to stay with the same age group, but if you see all of the ages as continuously interacting and influencing each other, it shouldn't be so difficult.

Due to her academic studies in the preparation program, Sandra's point of view as a new principal took an important systems-thinking construct into account, focusing on her school as one whole organization rather than as separated age groups. Similarly, when Rachel, a preservice principal with 10 years of prior elementary school teaching experience, was observed during principal preparation program, she said that she had implemented the systems-thinking approach following a course she took while working as a grade-level coordinator:

As a coordinator of the first grade level, I organize the ceremony when the children receive their first bible. I do this every year, and every year I get angry at the other teachers who don't help me enough. I have to beg them to help me, as if it were my own daughter's private party. They don't understand that these celebrations [with the families] establish our school's good name. However, this year, when I was about to prepare the ceremony, I'd just learned about systems thinking here, in the school principal's preparation program, so I decided to apply it. The plan was that the students would travel to several locations in the city, and in each they'd find a teacher who was dressed as a historical figure, so I had to recruit teachers. But considering the concept of systems thinking I acted differently from the way I'd done in previous years. When I approached a teacher, I didn't just ask her to help me in a concrete task; I explained the concept of the entire festivity to her, explicating the whole program. It was amazing: Every teacher I talked to became enthusiastic about the festivity, agreed to help, and even offered more help and more ideas.

Learning from her academic studies, Rachel used systems thinking to face challenges in her work. In this context, she even empowered her colleagues the whole picture, which enabled her to receive substantially more cooperation.

Principal preparation programs that do not include an explicit course on systems thinking sometimes nevertheless do emphasize related principles such as teamwork or collaboration. Nancy, a prospective principal serving as a grade-level coordinator with 22 years of prior experience as a teacher in a high school, said that her studies in the principal preparation program helped her learn to consider her colleagues' opinions and to adopt a multidimensional view, which is one of the characteristics of systems thinking in school leadership. Nancy was influenced by the one of the main messages of the preparation program in which she participated:

Our lecturers constantly stressed the importance of teamwork; it was one of the main messages of the program. Almost every week we had group learning, during which we get used to listen to each other and learn from each other. I realized that joint thinking enriches me, and began to implement it also at school. I don't make decisions alone anymore; I almost always ask all the teachers on my level first. Whenever I have to plan a project, a trip, or an activity—I call a meeting and make the decision jointly with them. Not all wisdom lies within me, so a decision that is based not on my own point of view alone but rather on various perspectives is often the correct one.

Academic study of systems thinking can take place in settings other than principal preparation programs. During his principal preparation program, Christopher, a preservice principal with 14 years of prior teaching experience in an elementary school, reported that he had developed his systems thinking through an inservice teacher training program:

During an advanced study program in which I participated, we learned how to construct a work plan for the school. We learned a tool called "vision deployment matrix," but the main topic was the systemic view. We were exposed to the school's systemic map, which consists of several components. Among these components were the human, the organizational, and the pedagogical components. This advanced study program was significant for me, because I understood that the systemic approach involves thinking in ways that are not defined and not known in advance, and it usually leads to multiple solutions, each with its advantages and disadvantages.

Another example of academic study as a source of systems thinking was cited by Brenda, a novice high school principal, who reported that she had learned to see her staff as "one unit" rather than as "individuals" as a result of something that she had discovered during her advanced studies for inservice principals:

One of the lecturers introduced us to the prisoners' dilemma, where two inmates are prevented from speaking to each other. When interrogated, if neither of them confesses—they each get a punishment that is less severe than if they both confess, and if just one of them confesses the other one gets punished severely while the prisoner who confessed goes free. What emerges is that if each prisoner thinks just about himself, ignoring the big picture, it is better for them to betray each other. However, their reward would be better if they both see the big picture and remain silent. When I learned this, I thought about my principalship fundamentals, and this lesson inspired me to determine cooperation as one of the basic expectations from my staff. I often tell them that we have to function as one unit and not as individuals, once in a while explaining the prisoners' dilemma to them.

To summarize, the third source of systems thinking in school leadership is *academic study*, mainly acquired during principal preparation programs but also at times through special inservice academic courses for principals or previously when still working as teachers. The academic experiences may explicitly focus on systems thinking or may implicitly emphasize related principles. As reviewed above (Sect. 7.1), several methods have been proposed as means of teaching systems thinking (e.g., Blizzard et al. 2012; Hung 2008; Levin and Levin 2013). Some practical ways to impart skills of *Holistic School Leadership* to school leaders are discussed below in Sect. 9.6. However, further research is required in order to develop curriculum and teaching methods that can substantially contribute to the acquisition of systems thinking.

ACADEMIC STUDIES AS A SOURCE OF *HOLISTIC SCHOOL LEADERSHIP*:

- Explicit or implicit systems thinking during professional development
- Systems thinking in principals' inservice training
- Holistic approach in principal preparation programs
- Systems-thinking approach in prior teacher inservice training

7.2.4 *Natural Tendency*

The fourth and final source of *Holistic School Leadership* that was identified in our research is the natural tendency toward this sort of thinking. This source corresponds to the findings of Davidz and her colleagues (Davidz 2006; Davidz and Nightingale 2008; Davidz et al. 2005), who identified several specific individual characteristics, such as type of thinking, problem-solving style, interpersonal skills, and communication, as enablers of systems thinking's development in engineers (see Sect. 7.1). It is not easy to distinguish between natural tendency and acquired ability; however, our interviewees expressed their conviction that their spontaneous predisposition to systems thinking was the primary basis of their *Holistic School Leadership*. Alexander, a preservice principal with 20 years of prior teaching experience in a high school, explained that his systems-thinking ability came naturally:

Where did my systems thinking evolve? I can't really pinpoint the place. Going many years back, I can identify many places where it grew: as a guide in a youth movement, in the pre-army preparatory course, during military service in an elite combat unit, during my officer training course, working as an educator, serving as an assistant principal, and even while studying for my MBA at the university. But it did not begin there. All those places

were a continuation of my naturally wide-ranging view, and that view is what directed me toward all those places. Those places I mentioned did not give me this view, although they helped it advance, mature, and evolve, each in its own way. But that view existed before.

Similarly, Richard, a high-school experienced principal who had been serving in this role for 8 years, claimed that his systems-thinking predilection was inborn:

I suppose I've had the holistic perspective from birth. According to my personal experience, the holistic perspective is primarily an inborn gift, which allows me to demonstrate some immediate holistic perspective without practice, or to gain this perspective rapidly with minimal practice.

David, a principal of an elementary school with 10 years of experience in the role who participated in one of our focus group sessions, also considered his systems-thinking ability to be a personality characteristic. As one example of this propensity, he described his holistic understanding of an educational plan:

When I plan a project I initially have a vision of its completion, and this vision guides me all the way through, up until the implementation of the idea. The vision shows me the whole picture of the project, including its details. I'll give you an example: When there was a war going on in southern Israel I had an innovative idea—to adopt a school from there. This meant that I, as the school principal, contacted the principal of the adopted school, and each teacher in my school contacted one teacher from the adopted school, and each student in my school contacted one student of the same age from the adopted school, and my school's secretary contacted the adopted school's secretary, etc.

David relayed how, when he had planned an educational program related to a national crisis situation, he did not compile a list of separate activities; rather, he saw the whole. Understanding an educational plan as it flows from the overall concept to the details reflects *Holistic School Leadership*, which involves a holistic point of view not only regarding the whole school, but also regarding any given issue from any type of school-life arena—be it a program, an event, or a pupil. David also explained how this understanding emerged:

When thinking about this unique idea, I first had the overall concept, together with its details. Visions like this come to me suddenly, like lightning striking. I see a need and I ponder it; then the solution comes from within, in a powerful way, at once, like a flash... I didn't learn it; I've just got it.

David described his holistic view not as an ability to build a plan gradually but rather as a sudden bolt of “lightning” that presented the ready plan in his mind. He considered this ability to be a personality characteristic rather than a learned capability.

Likewise, Ethan, an experienced middle-school principal who had been serving in this role for 8 years, said that some teachers reveal a particular talent for systems thinking. These teachers' lack of experience or academic study led Ethan to attribute this talent to natural aptitude:

As a school principal, I often think about issues related to the school as a whole, such as what its current goals are or what changes are required, and in many cases I talk about these issues with the teachers. Most of the teachers aren't able to express a profound opinion on these issues; they are good teachers but don't understand the school as a whole, which is

fine by me. Only a few teachers see the school's major needs, opportunities, or risks. Those teachers are not necessarily the most experienced or the most educated.

As an example, Ethan went on to describe the aforementioned young teacher who had not yet attained his teaching certificate but who seemed to innately understand "the school's essence" as a whole, "even more than the school's senior teachers." As described above (Sect. 7.2.2), Ethan referred to this teacher as helping him "consider issues from a wide range of perspectives."

In sum, the fourth source of *Holistic School Leadership* is the natural tendency or aptitude that facilitates one's acquisition of high levels of systems thinking. School principals exhibit this natural ability to varying degrees.

NATURAL APTITUDE AS A SOURCE OF *HOLISTIC SCHOOL LEADERSHIP*:

- Innate understanding of the school as a system
- Natural systems-thinking ability within the context of managerial experience, role model, and professional development

7.3 Conclusion

To recap, this chapter highlighted four sources of *Holistic School Leadership*. The first source is *management experience*, referring to the experience gained prior to principalship by holding a managerial position (e.g., grade-level coordinator) while working in the school, or management experience on the job as an acting school principal, or even by holding a managerial position beyond the school system. The second source is that of a *role model*, referring to the impact of working alongside someone who possesses a well-developed level of systems thinking. Usually this role model is the principal, who leads the school through systems thinking, imparts this view to the school's management team, and creates an atmosphere that supports systems thinking's development. The third source of *Holistic School Leadership* is *academic study*, mainly in principal preparation programs. Last, the fourth source is the *natural tendency* or aptitude that facilitates one's acquisition of high levels of systems thinking, which each school principal reveals to a different extent.

As reviewed earlier, Davidz and her colleagues (Davidz 2006; Davidz and Nightingale 2008; Davidz et al. 2005) explored the sources of systems thinking in the context of engineering. They found that the primary mechanisms enabling systems thinking's development in engineers include experiential learning, which incorporates both work experience and life experience; specific individual

characteristics, such as thinking modes, problem-solving styles, and interpersonal and communication skills; and a supportive environment, such as schedule and cost constraints and work designs. In our exploration of the sources of systems thinking among educational leaders, two of the sources of systems thinking that emerged—academic study and role model—were not mentioned by Davidz. On the other hand, the literature about school leadership mentions mainly experience and academic study as factors that favorably affect school principals' functioning. For example, a positive relationship was found between principals' experience and their schools' level of performance (e.g., Clark et al. 2009), as well as between principals' participation in professional learning frameworks and their leadership practices, as measured by leadership responsive to faculty, leadership responsive to the developmental needs of young adolescents and leadership responsive to the developmental needs of the organization as a unique innovative entity (e.g., Bickmore 2012). Interestingly, the other two sources we found for *Holistic School Leadership*—working alongside a role model and natural aptitude—were much less discussed in the contemporary literature on school principals.

We identified management experience as the primary and most important source of *Holistic School Leadership*. As reviewed above (Sect. 7.1), Frank (2010) claimed that for systems engineers, *interdisciplinary knowledge*—wide, diversified and interdisciplinary knowledge—and *broad experience*—a wide range of jobs, enabling the systems engineers to become acquainted with many systems and technologies—are among the characteristics of background and knowledge of systems engineers with a high level of systems-thinking. In the realm of school leadership, management experience in several school positions may be beneficial. Acquisition of different points of view about the school reality may help in developing the ability to see the whole picture, expanding the capacity of *Holistic School Leadership* (see below Sect. 9.3).

The prominence of role models as a source of systems thinking among our research participants pinpoints the significance of mentoring in school leadership. To ease adjustment to their new role, it is becoming increasingly prevalent for novice principals to be paired with an experienced guide. This practice is consistent with findings reporting that new principals feel that mentoring programs are necessary for their professional development during their first years on the job (e.g., Silver et al. 2009; Woolsey 2010; Zepeda et al. 2012). According to our *Holistic School Leadership* framework, it appears that a mentor—role model—who demonstrates a high level of systems thinking may contribute considerably to the beginning school leader's systems-thinking development.

Moreover, our analysis brings a further aspect of mentoring to light in the area of school leadership. The school principals whom we interviewed emphasized not only the importance of a direct relationship with an external mentor to assist the novice school principal in the first years but also the crucial function played by previous exposure to a systems-thinking role model while still working as a teacher and middle-management position holder at school. Notably, the interviewed

principals underscored the substantial contribution of their exposure to a prior school principal who directly modeled the implementation of systems thinking and systematically externalized and explicated that thinking to his or her staff members. Our findings showed that a school leader who acts as such a role model for the school's teachers, and in particular for those who hold a managerial position like educational counselor or grade-level coordinator, may enhance and accelerate those managers' systems-thinking development.

The identification of role models as an important source for systems thinking thereby highlights the primary responsibility of school principals to help build their own staff members' *Holistic School Leadership* capacity, serving as a guide and coach for teachers. We suggest that in today's "era of accountability," which poses high expectations from school leaders to demonstrate measurable bottom-line results regarding student achievements (see Sect. 1.1), another requirement for expertise should be added. In line with today's principal's personal accountability as the school's topmost instructional leader who fosters best practices in teaching and learning to facilitate students' academic success, we assert that, as the chief figure at the helm, the school principal should also focus resolutely on developing effective learning structures and processes that explicitly, positively foster staff members' systems-thinking comprehension and performance—especially for middle-management position holders. In this context, further attention should be focused on one of the burgeoning contemporary changes characterizing school leadership today—nascent initiatives to establish and then sustain a collaborative workplace environment and professional learning community within the school (Carpenter 2015; DuFour and DuFour 2012; see also below Sect. 9.6).

With regard to the other source of systems thinking that was not previously emphasized in the literature on school leadership—natural ability—as noted above, debate continues as to whether systems thinking is an innate talent (which a person either does or does not possess) or whether it is an acquired ability (Zonnenshain 2012). However, this nature-nurture dichotomy is incompatible with the concept of systems thinking. The innate talent is embedded within a person, who, in turn, is embedded in an external environment. Although the innate talent is presumably a critical part of personal development, it is only one part of a system where multiple interactions occur. Thus, when looking for the origins of individual differences, the focus should be on developmental processes rather than on the nature-nurture separation. That is, instead of dichotomizing behavioral capacities into those that are innate and those that are learned, personal development through the influence of one factor in the context of other factors should be emphasized.

This more integrative developmental approach coincides with the current book's overall systems approach, which suggests that principals' natural aptitude is indeed one source of systems thinking but cannot simply operate alone. Managerial experience, role models, and academic study also contribute to that natural tendency's further growth. Accordingly, principals' development of *Holistic School Leadership* is seen as a result of concurrent interactions among natural tendencies

and acquisition processes. In other words, the nature-nurture dichotomy is not conducive to a full understanding of the development of *Holistic School Leadership* because its different sources simultaneously interact with each other all along the developmental process. The following chapter further scrutinizes this developmental progression of systems thinking along the career lifespan of the school principal.

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Chapter 8

The Developmental Process of *Holistic School Leadership*

As described above, this chapter will focus on the developmental process that school principals undergo while gradually attaining the capacity to perform at the systems level, a process that spans the years of their professional career. In contrast to the other aspect of systems thinking's acquisition reviewed in the previous chapter—the various *sources* of influence that may lead to its acquisition—a review of the literature on the *developmental processes* by which systems thinking is acquired over one's career reveals a paucity of empirical scrutiny. To date, the developmental process of systems thinking has received no research attention in any professional discipline, leaving fundamental questions unanswered about how systems thinking develops in different professionals. As Heidi Davidz noted (Davidz 2006; Davidz and Nightingale 2008; Davidz et al. 2005), quite a few speculative claims, which are based on conjecture or supposition, are currently in use, but there are no data to support them. As the systems-thinking developmental process is presumably related to milestones in professionals' careers, it should be examined in light of the distinctive trajectory for school principals. Hence, we next initially review school leaders' career stages in general.

8.1 Existing Research on School Leaders' Professional Career Stages

Researchers have explored the career stages that people traverse during the course of their working lives—in organizations in general (e.g., Hall 2002) and among school leaders in particular (e.g., Earley 2007; Petzko 2004). The studies on school principals' careers reported progress through a series of distinct occupational stages, with each stage characterized by changes in aims, needs, dilemmas, attitudes, relationships, and behaviors.

Several models have been suggested in the literature to describe the stages of school leaders' development. For example, the National College for School Leadership in England (2001) identified a "leadership development framework" that includes five stages on the path from teacher to head teacher (principal). At first, in the *emergent leadership* stage, the teacher begins to take on management and leadership responsibilities and perhaps aspires to become head. *Established leadership* comprises the stage of assistant heads and deputy heads, who are experienced leaders but who do not intend—at least for now—to pursue headship. The *entry to headship* stage includes a teacher's preparation for and induction into the senior post in a school. In the *advanced leadership* stage, school leaders reach maturity in their role and look to widen their experience, refresh themselves, and update their skills. The *consultant leadership* stage is when an able and experienced leader is ready to give something back to the profession by taking on training, mentoring, inspection, or other responsibilities.

Developing an integrated model for principals' career stages, Earley and Weindling (2004) divided the development process into seven stages: Stage 0—*preparation prior to headship*—when future principals prepare themselves, including training for headship; Stage 1—*entry and encounter* (first months)—when the new head's notions of headship meet reality; Stage 2—*taking hold* (3–12 months)—when the new head strives to gain control over the new role; Stage 3—*reshaping* (second year)—when the head feels more confident; Stage 4—*refinement* (years 3–4)—when structural changes are in place; Stage 5—*consolidation* (years 5–7)—after the head introduces most of the planned changes; and Stage 6—*plateau* (years 8 and onwards)—when the head has initiated most of the intended changes.

Barnett and O'Mahony (2008) relied on the five-stage model of Parkay and Hall (1992), which describes the career patterns of new principals in term of the following stages: (1) *survival*; (2) *control*; (3) *stability*; (4) *educational leadership*; and (5) *professional actualization*. This model is based on several basic assumptions: that not all principals begin at Stage 1; that principals develop through the stages at different rates; that the situational context plays a part; and that principals may operate at more than one stage simultaneously.

Oplatka (2010) incorporated several models developed to depict principals' career, identifying a number of common key stages. (1) In the *induction* stage, the new principal undergoes socialization into the school or into the job. The principal has to confront many issues and difficulties, such as obtaining acceptance, learning the organizational culture, and establishing ways to overcome the insecurity of inexperience and to develop a sense of confidence. (2) The *establishment* stage, which is characterized by growth and enthusiasm. At this time, the principal feels him/herself to be in control and feels competent and confident to manage the school. The principal experiences a transition from an ideal to a realistic view of the school reality and of the managerial position. (3) In the *maintenance versus renewal* stage, there may be very few opportunities for professional growth. Some principals may experience feelings of stagnation and disenchantment and a loss of enthusiasm.

Other principals, however, may express high levels of enthusiasm and job satisfaction, along with feelings of self-fulfillment and self-renewal, and they may seek new challenges in their roles and schools. (4) *Disenchantment* may be a feature typifying long-serving principals who feel themselves to be trapped and stagnated in a post, with nowhere to go. Sometimes, such principals gradually become autocratic in style, reacting negatively to any change initiative, and experiencing decreased confidence and enthusiasm.

Darling-Hammond et al. (2007) claimed that inservice programs for school principals should provide what Peterson (2002) terms “career-staged” professional development, namely development frameworks that are consistent with the stages of the school leader’s career. Several such career-staged professional development frameworks have been devised. For example, the Swedish 4-step approach to principal training includes: recruitment for those wanting to become principals; introduction for those newly appointed; a national program after about two years in the job; and continuation, which comprises mainly university courses (Johansson 2002). Another example is the continuing professional development framework designed for school principals in Hong Kong, which has separate programs for aspiring, newly appointed, and serving principals (Walker et al. 2002). However, only a few such career-staged inservice programs are available for school leaders to provide a cumulative learning pathway from preservice preparation throughout a principal’s career. In particular, we found neither theoretical nor practical indications of such a career-staged pathway referring explicitly to principals’ systems thinking.

8.2 Our Proposed Five Career Stages of *Holistic School Leadership Development*

To analyze school leaders’ developmental process for acquiring systems thinking across the career, we utilized the qualitative empirical research methodology that we reported above, which yielded the four core characteristics (see Sect. 6.2) and the four sources (see Sect. 7.2) of *Holistic School Leadership*. In this methodology, as described above, we utilized an inductive process of generating themes grounded in the diverse articulations of heterogeneous samples of school principals in Israel who spanned a range of career stages—via in-depth interviews, observations, and focus groups. Our findings identified five career stages through which the process of developing *Holistic School Leadership* occurs (Shaked and Schechter, in press): (1) the *preservice stage*, typified by an expansion of view; (2) the *survival stage*, typified by a slowdown in the development of systems thinking; (3) the *consolidation stage*, typified by a gradual development of systems thinking; (4) the *role maturity stage*, typified by a systemic view; and (5) the *possible decline stage*, typified by some degree of difficulty to think systemically.

CAREER STAGE DEVELOPMENT OF *HOLISTIC SCHOOL LEADERSHIP*:

- The preservice stage
- The survival stage
- The consolidation stage
- The role maturity stage
- The possible decline stage

8.2.1 Stage 1: The Preservice Stage—Expansion of View

The first stage in the development of *Holistic School Leadership* seems to occur during the years before appointment as school principal and is therefore called the “preservice” stage. The main process that occurs during this stage is an expansion of view: Prospective principals begin to broaden their perspective, learning to see the holistic systemic picture of the school in which they work. Specifically, our findings indicate that during this stage prospective principals mainly develop two of the *Holistic School Leadership* characteristics: *leading wholes* and *adopting a multidimensional view*. The significant development of systems thinking in this stage happens due to the multitude of available sources in this period of time—*managerial experience* gained due to holding a position at school, *academic studies* in the principal preparation program, and working alongside a *role model* in the form of a skilled principal. All these occur without the stress of actually working as a beginning principal with the full accountability for the whole school.

Pamela, a prospective principal with 17 years of prior experience as a teacher in an elementary school, who was interviewed during her principal preparation program, described how she developed systems thinking through her role as a senior management team member:

As an assistant principal, I deal with the daily operation of the school, I supervise the instructional staff, I handle student discipline problems, and many other responsibilities. I don't have the decision-making authority that my principal has, but I take part in the overall administration of the school. Thus, my work provides me with a wide view of school. I see how specific things in school are parts of a big story, which ordinary teachers usually can't see.

Pamela attributed the development of her holistic perspective to her managerial experience, which is one of the sources of *Holistic School Leadership* ability. This source was mentioned frequently by interviewees in the context of the preservice stage, because in this stage aspiring principals often hold a school position like assistant principal, educational counselor, or grade-level coordinator.

Likewise, during her principal preparation program, Kathleen, a prospective principal with 14 years of prior teaching experience, described how she developed systems thinking due to the variety of preservice mid-level managerial roles that she held at her high school:

Over the years, I filled several positions at the school. I served as a grade-level coordinator, a subject coordinator, volunteers' coordinator, and activities coordinator. Filling these positions, I was exposed to different facets of school. As a result, today I understand the school's multilayered nature. I consider the school as a multifaceted entity, which I can capture now, after having gained varied experiences.

Like Pamela, Kathleen also attributed her systems-thinking development to the *managerial experience* source, which she gained as a position holder at school during the preservice stage. She regarded the diversity of positions held by middle managers as important. She claimed that it was owing to this diversity that she could adopt a multidimensional view, which enabled her to envision the school "as a multifaceted entity."

Phyllis, a prospective principal with 12 years of prior teaching experience in a middle school, said that she developed her systemic view when she was appointed to her current educational counselor role:

My systemic view developed during my first year in office [as an educational counselor], when I faced many tasks. I coordinated the data entry of all new students; I assisted with duties in the principal's office; I taught classes when teachers were absent; and so on. I understood that only by seeing the view from above could I promote my work, be efficient, and be professional—both for the system and for everyone within it. I believe that in this way I am able to be more effective and reach a larger audience.

During his principal preparation program, Nathan, a coordinator of special needs students with 17 years of prior experience as a teacher in an elementary school, said that he gained "new perspectives" thanks to discussions about school issues that were held in the school's management team:

Coordinators in our school, like in other schools, I think, are each responsible for their own area, but they are also members of the management team and they take part in discussions about general school issues, even those that are unrelated to their own work area. It is like a cabinet minister, such as the minister of transport or minister of education, for example, who is responsible for the matters of his own office but also takes part in decisions about budget and the like. I personally feel that the discussions about those school issues that are unrelated to my own area help me to develop as a professional. That is the reason why I came here to study in the principal preparation program, because I found that dealing with such school issues provides me with new perspectives that I didn't have before.

Eva, an experienced high-school principal holding this role for 12 years, recalled how she skipped important steps in her preservice stage, moving directly from a teaching role to the role of principal of a large school, without holding any middle-management role during her years as a teacher (the *managerial experience*

source) and without studying in a principal preparation program (the *academic studies* source). Thus, Eva encountered significant difficulties during her early years as school principal because she “didn’t understand how the system worked.” During a focus group session she said:

When I moved to this school, I had four years of experience as a principal in a previous school, and that’s what enabled me to succeed here. At the previous school, I worked very hard because I didn’t understand how the system works. I made a lot of mistakes there, and changing my workplace allowed me to start over—as smarter, more experienced, and better at understanding the school. I think that if I had carried a formal role at school while still working as a teacher I would have been much better prepared for school leadership. I learned to manage the school the hard way.

Eva’s comments highlight how she missed her first stage of systems-thinking development, because she did not work in a preservice managerial role, which would have exposed her to the systems-thinking level before she was appointed as a school principal. Eventually, she overcame these deficiencies, but unfortunately she was only able to gain her expanded systems view by doing it the “hard way.”

Similarly, Benjamin, a novice middle school principal, also felt he was not running his school smoothly due to a lack of earlier mid-level managerial experience during his preservice stage. When asked why he had to struggle, he spoke about his background. He had extensive prior experience as a teacher for high school students over 25 years, having worked in two religious high schools—one for boys and one for girls. He also was considered to be a devoted teacher and an amiable and gentle person. However, he had very limited experience in holding school positions:

I was chosen to be a principal thanks to my rich educational experience, virtues, and successes. But extensive experience as an ordinary teacher and being an appreciated teacher as well as being considered a pleasant person—are not a substitute for the gradual development of management skills. I was just a coordinator of an insignificant subject, and that was all the managerial experience I gained. I began this job without adequate preparation to see the different aspects of school life and how they interact, and now I am paying the price.

In short, the *preservice stage* is characterized mainly by an expanding systems perspective on the part of future principals, where they begin to broaden their view and increasingly see “the big picture.” This expansion may be attributed to the sources available in this period of time—*managerial experience* gained due to a middle-management position at school, *academic studies* in a principal preparation program, and a *role model* when working alongside a principal who leads a school at the systems level. These sources, which are interrelated with the natural tendency toward systems thinking (see above Sect. 7.3), enable prospective principals to develop in this stage mainly two characteristics of *Holistic School Leadership*: *leading wholes* and *adopting a multidimensional view*. These two characteristics reflect systems thinking as *seeing the whole beyond the parts*.

Importantly, the development of systems thinking may be hindered in school principals who lacked the preservice stage, which could adversely affect their

performance as principals. The most important source in this stage was found to be mid-level *managerial experience*. Thus, a teacher who did not accrue sufficient *managerial experience* by holding a school position like grade-level coordinator, educational counselor, or deputy principal probably did not develop a high ability for systems thinking in school leadership. Experiencing a variety of middle-management positions during this stage also seemed to be significant—not only the length or the type of managerial experience. This can be explained by the fact that schools, unlike other bureaucratic organizations, are considered loosely coupled systems. A loosely coupled system includes responsive, yet independent, components. The elements of a loosely coupled system are interrelated, but at the same time retain independence from each other (Orton and Weick 1990; Weick 1982). This structural looseness of schools precludes faculty members from integrating meaningful feedback about core instructional and organizational processes. For this reason, it is difficult to know the entire system well when serving in one position at a school. Therefore, experience in multiple school positions is valuable because acquisition of different viewpoints about school practices expands one’s ability to perform at the systemic level.

**STAGE 1—THE PRESERVICE STAGE IN DEVELOPING
HOLISTIC SCHOOL LEADERSHIP:**

- Expansion of view
- Serving as a middle manager
- Being part of a management team
- Skipping this stage may harm systemic development

8.2.2 Stage 2: *The Survival Stage—Slowdown*

The second stage in the process of developing *Holistic School Leadership*—the *survival stage*—lasts several months. Participants reported that this stage ranged in duration from 4 to 10 months in their first year as inservice principal. During this time, a slowdown seems to occur in the development of systems thinking, because the principal must urgently deal with the demanding tasks of acclimatization and socialization in order to survive entry into the new position. During this stage, school principals are generally not available to execute systems thinking. Instead, they are engaged in steps that are more basic and pragmatic, such as becoming acquainted with school, learning the required reporting methods, managing paperwork, and gaining the trust of staff and parents.

Mallory, a prospective principal with 22 years of prior teaching experience, described this “survival” phenomenon with regard to a new principal who had arrived at her middle school. Mallory claimed that the new principal could not discuss holistic subjects like school policies or goals that are part and parcel of systems thinking—which would reflect the characteristic of *leading wholes*—because the new principal “simply couldn’t stop fiddling with current operations:”

Our school got a new principal this year, and for me it was a real change. I was used to discussing essential issues with the previous school principal. He was a really clever person, who really understood educational systems, and I often held in-depth conversations with him about the school’s policy, goals, and issues like that. With the current school principal, on the other hand, I can’t discuss such topics. I don’t think that she lacks the ability to participate in such discussions; she simply can’t stop fiddling with current operations. I hope later she will be able to work at a higher level, and in the meantime I’m doing my work in another way.

A similar phenomenon was described by Mildred, an elementary school principal with 18 years of experience in this role, who was appointed as a mentor to a new principal. She described her novice mentee’s feeling that she could not afford to dedicate time “to developing an extensive view” because of the heavy burden of the new daily routine:

I was asked to be a “principal’s personal guide.” I received the name of a beginning principal, and we began to meet. The first meetings were very successful; she raised all kinds of issues, the conversation flowed, we spoke for hours, and I felt that she was getting a lot from the meetings. My main goal was to help her to look extensively at her work, to develop an extensive view. But after a few meetings something went wrong. She canceled our meetings several times, in some cases at the last minute. When we finally met, I asked her why that had happened. I wasn’t angry about it and I didn’t blame her, I just spoke with her about it openly. It was the right move; she answered honestly that she was struggling with the daily routine, and the meetings with me seemed to her to be a luxury that she couldn’t afford.

This example conveys that during the survival stage, Mildred could act as a *role model*, one of the *Holistic School Leadership* sources, for her mentee. Nevertheless, the mentee could not develop “an extensive view” of *Holistic School Leadership* because of her pressures while acclimatizing and socializing into the new position.

Kathy, a novice middle-school principal with 25 years of prior teaching experience, said that during her first months on the job she was constantly chasing managerial tasks and hence could not take time out to step back and take a broader look at long-term rather than urgent issues. As Kathy attempted to survive her first hectic months as a school principal, she encountered difficulties in rising above the day-to-day tasks and in thinking about the long term:

As I said, it took me a while to learn the everyday practice of my work, and I am still learning. During the first months of this year, I couldn’t think about anything but routine work. I often found that I wasn’t ready for events and meetings, and I had to prepare needed reports and letters at the last minute. I was working around the clock. Sometimes I woke up

remembering things I needed to do, and I sat down in the middle of the night to prepare documents and send emails. Now it is a little bit better, but I still feel overloaded. I believe it won't always be like this, and when that happens then I will be able to think not only about what I need for tomorrow but also what I need for the next month and the next year.

Likewise, Benjamin, the aforementioned novice middle school principal with 25 years of prior high school teaching experience, also described his inability to think about the whole year but attributed it not to his workload but rather to feelings of inadequacy and anxiety:

During my first year here, there were significant gaps between expected successes and the school reality, and therefore I had intense feelings of inadequacy and even anxiety.... My work here is very complicated because my school belongs to a national network of religious educational institutions, but it is also subject to the Ministry of Education, and the local municipality is in charge of it too. So I have a lot of bosses, each of whom wants certain things, and sometimes these things even contradict each other. I am trying my best to respond to each and every one of my bosses.... Thus, I didn't think about the whole year, but cut it into pieces. I asked myself: "Can I survive this day? Can I survive until the end of the week? Until the end of the month? Until the end of the semester?" Several times I wanted to run away, but by thinking in the short term I was able to remain.

Benjamin's view of his supervising authorities as separate entities to be approached in isolation, without seeing their underlying connections, implies his insufficient systems thinking at this survival stage. His difficulty in handling the multiplicity of agents interacting with school life may be one of the reasons for the disappointing "gaps between expected successes and school reality" that he mentioned.

Doris, an experienced high-school principal in the position for 18 years, also described this survival stage as she had witnessed in the context of her role as mentor to a new principal, like Mildred above. Doris described her mentee novice principal's inability to rise above one individual case and see the wider picture:

The subjects of our meetings are determined by her [the novice principal's] preferences; I let her raise any issue she wants, and we follow whatever matters to her. In the last three sessions we talked about one of her teachers; she doesn't get along with her. I tried several times to open her eyes to see that there are additional teachers at school and also other subjects worthy of our attention. I thought that we should not spend so much time on one problematic teacher, but she is so overwhelmed with the bad relationship with this teacher so that she can't think about any other topic, relationship, or process at her school.

Doris's attempt to provide her mentee with a broader view—"to open her eyes to see that there are additional teachers at school and also other subjects worthy of our attention"—reflects the characteristic of *adopting a multidimensional view*. However, the principal mentee could not put aside the single case of the teacher with whom she had a conflict. In this case, the novice principal's unavailability to engage in systems thinking stemmed not from overburdening management tasks or personal insecurities but from interpersonal tensions, to which beginning school principals may be particularly vulnerable.

Similarly, interpersonal relationships with the new staff made it difficult for Gabriel, a novice high-school principal with 16 years of prior teaching experience, to perform at the level of systems thinking. We observed Gabriel in his first year on the job during a meeting with a grade-level coordinator. The coordinator requested approval to buy equipment for her grade, and in the ensuing dialogue Gabriel acknowledged the equipment's importance but explained to her about the budgetary priorities of the school as a whole. Yet, when the coordinator assertively continued repeating her request to buy the equipment, eventually Gabriel conceded. When we interviewed him later that day, we asked Gabriel to explain what caused him to relent and approve the coordinator's request. He admitted that he knew the equipment in question was not a priority for the school, but he did not want to disappoint the teacher:

I understand the budget issue well; that's not the problem. I know how to rank the various needs of the school, seeing the whole picture. But I cannot say no to teachers' requests. They want to do their work well and to give our students the proper services, and for that they need money, and I can hardly refuse. That's why we have an accumulated deficit that I don't really know how to deal with.

Prioritizing the school's budgetary needs reflects the *evaluating significance* characteristic of systems thinking—considering elements of school life according to their significance for the entire system, distinguishing between important and less important issues. However, at this survival stage, Gabriel attributed more importance to establishing a good foundation of interpersonal relationships with his staff than he did to implementing his systems-thinking approach in his actions. As a new principal seeking to survive, Gabriel's inability to say no negatively impacted his capability to perform at the systems-thinking level and even caused a serious deficit in the school budget.

To summarize, the *survival stage* is characterized by a slowdown in the development of *Holistic School Leadership*, which often occurs during the first months on the job. Because novice school leaders must cope with the challenges of surviving entry into their new environment, which includes achieving control over numerous tasks and gaining the trust of their staff, the principals are sometimes less emotionally and cognitively available for acquiring *Holistic School Leadership* skills.

What we termed the “survival stage” is compatible with the highly pragmatic “foundational” stage pinpointed by the International Study of Principal Preparation (ISPP), which described Canadian novice principals as concerned with “survival elements” and “operational elements” (Scott and Scott 2013; Webber et al. 2012). Survival elements include achieving a work-life balance, addressing poorly performing staff, organizing time, and managing the school budget and paperwork. Failure to cope adequately with some of these aspects may result in removal from the position—adding further pressures to the experience of trying to “keep one's head above water” and merely survive. These findings regarding novice principals'

limited emotional and cognitive availability to learn about systems thinking and to operate their schools in line with a *Holistic School Leadership* approach—due to their intense focus on the challenges of survival—appear to hold implications for tailoring the types of inservice supports that novice and early principals should receive (e.g., mentoring, coaching).

STAGE 2—THE SURVIVAL STAGE IN DEVELOPING *HOLISTIC SCHOOL LEADERSHIP*:

- Slowdown in the development of systems thinking
- Focus on acclimatization and socialization
- Cognitive and emotional unavailability to engage in systems thinking
- Vulnerability to overburdening day-to-day management tasks, personal insecurities, and interpersonal tensions

8.2.3 *Stage 3: The Consolidation Stage—Gradual Development*

The third stage in the process of developing *Holistic School Leadership*—the *consolidation stage*—lasts several years. As reported by the principals, this stage lasts about 3 years after the slowdown months during the first year in office. This stage is characterized by a growing capacity for systems thinking alongside a gradual consolidation of the principals’ standing, which may enable them to begin to meaningfully develop their systems-thinking ability. During this period of time, participants described school principals as becoming gradually less unsettled and more comfortable in their role; accordingly, their systems thinking also gradually evolves. For instance, Charles, an experienced high-school principal serving in this role for 8 years, described his first years as a school principal:

When I became a school principal, I didn’t even guess that it would take me such a long time to become acquainted with my new job. I thought I knew well how the school worked, and thus I assumed that in a few weeks or at most a few months I would learn the principal’s work. In fact, it took me two or three years to shift my perspective from a limited one to a far-reaching, all-embracing one.

This “far-reaching, all-embracing” perspective, which Charles developed over time during the consolidation stage, reflects *seeing the whole beyond the parts*. Cheryl, an experienced elementary-school principal serving in this role for 9 years, communicated in a similar vein while explicitly using the term “consolidation:”

You know, when speaking about a lesson, consolidation is the stage that normally occurs at the end of the lesson, where new material is reviewed, and hopefully learning is reinforced. I felt that I reached this stage after about three years, when I finally realized what it means to navigate a whole school. I felt that I was just then really beginning to do what was required of me as a skipper of this ship.

Robert, an experienced high-school principal serving in this role for 7 years, also identified the first years of school leadership as the phase for consolidating learning of the system as a whole, which reflects *leading wholes*. During a focus group meeting he said:

I became a principal after 15 years as a teacher, coordinator, and assistant principal, so I was supposedly ready to be a school principal. In fact, during my first years on the job I tried to look like I knew what I was doing, but deep down I felt I was guessing at every decision. It was only after a few years as principal that I felt I had more than superficial knowledge about many different areas and their connections—that I also had courses of action for the school as a whole. Only then did my confidence and my sense of autonomy increase.

As illustrated, experienced principals look back retrospectively, underscoring the importance of the consolidation period in the principal's professional growth. The consolidation process, which requires several years of active work as a new principal, apparently cannot be gained from other managerial roles. Thus, in order to achieve a high level of *Holistic School Leadership*, the *managerial experience* source must include not only experience in the preservice stage, as a middle-management position holder at school, but also extended work as an active school principal.

Regression and progression processes are probably a natural part of systems-thinking development. Thus, principals sometimes deal with survival challenges, too, during the consolidation stage. Sharon, a high-school principal serving in this role for 5 years, described the nonlinear nature of systems-thinking development:

I have the ability to think systemically. I understand how things at school are interconnected. However, there are ups and downs. Most of the time I feel skillful, but sometimes I feel like I'm on the first day in the role. I think that over time this feeling decreases. However, although I have quite a bit of experience, I do not always see the whole picture. From time to time, I am obsessed with short-term actions without paying attention to multiple elements that are part of the game.

In essence, the *consolidation stage* is characterized by gradual development of *Holistic School Leadership*. Because of the nonlinear nature of systems-thinking development, even during the first few years on the job principals also sometimes experience a slowdown in their process of gradually acquiring a *Holistic School Leadership* approach, at times when they occasionally face survival struggles. However, during these early years in the position, principals progressively do

develop an initial mastery of the *Holistic School Leadership* approach for managing their schools—mainly the capacities for *leading wholes* and *adopting a multidimensional view*.

STAGE 3—THE CONSOLIDATION STAGE IN DEVELOPING HOLISTIC SCHOOL LEADERSHIP:

- Meaningful development of systems-thinking perspective
- Growing capacity to navigate the school as a whole
- Continuous regression and progression in systemic thinking

8.2.4 Stage 4: Later Years—Role Maturity

The stabilization that principals reach during their first years on the job appears to provide the foundation that later allows them to apply the systems view. Thus, the fourth stage in the development of *Holistic School Leadership* may be termed “role maturity.” Although this stabilization process remains dynamic in later years in the principal position, and principals naturally continue to experience moments of insecurity and frustration, experienced principals are more often able to demonstrate both meanings of systems thinking, *seeing the whole beyond the parts* as well as *seeing the parts in the context of the whole*. Along these lines, when Jacqueline looked back on her 9-year career as a middle-school principal, she wistfully expressed the wish that she could have somehow begun her job after having completed the survival and consolidation stages, as it were. This would have enabled her to start out from a more mature vantage point. We observed her saying during a conversation:

Over the years, I’ve learned to think systemically. Now, I can make quicker decisions with less information, I can understand others’ personal motivations and behavior, I can see the big picture without losing sight of the details. For this reason, if I could turn back the clock, I’d rather start my principalship career from the fourth or the fifth year, or even from the seventh year. I’ve learned to understand the school over the years, and I’ve improved over time. It was only after several years as a school principal that I learned to see the entire system; during my first years I made a lot of mistakes.

Similarly, Joshua, a high-school principal serving in this role for 5 years, was able to retrospectively ponder the continually evolving role maturation process that he experienced in terms of systems thinking:

Work experience helps you develop an understanding of the world of your work and an awareness of your own skills and abilities. I feel that just now, in my fifth year in this job, have I gained the systemic view, understanding how one’s own organization works with

others in the same field and across disciplines. Maybe if you interview me in my tenth year I'll say that in my fifth year I didn't understand anything yet; however, currently I feel that it took me about four years to understand the entire school, my job, and my own position in this complex organization.

According to Joshua, the role maturity stage may be the most likely time for performing at the systems level. He attributed this capacity mainly to the source of *managerial experience* gained while serving as principal. Similarly, Charlotte, who had 14 years of experience as a high-school principal, saw herself as having reached the peak of her professional life, when maturity in the role enabled her to "think systemically:"

Do you know the old song "The Best Years of Our Lives?" Well, I'm in the best years of my life, at least the best years of my professional life. In general, I believe that our middle years are our best years. When you start you may have that sense of new beginnings, but you are still not ripe enough. Now I'm an experienced principal, having knowledge and skills in my particular field that I gained over a long period of time. I think systemically, I have a thorough understanding, Understanding one thing leads to understanding another and I know how to integrate different, generally illusive, occurrences into one holistic picture.

Ann, an experienced elementary-school principal serving in this role for 11 years, described herself as being able "to lead the school as a whole." She claimed that she developed this ability gradually over the years, until becoming her current self—a "skilled principal:"

The notion that school principals pass through a career cycle matches my own experience. I learned this role gradually, and although you always have more to learn, I feel that now I'm a skilled principal. I understand what is behind things, and I know how to lead the school as a whole, taking into consideration the different subsystems that the school includes.

At the other end of the spectrum, a prospective principal, Denise, who was working as an educational counselor during her academic studies and had 17 years of prior experience as a teacher in an elementary school, expressed her awe of the principals who lectured in her principal preparation program. Denise saw these experienced principals—in their role maturity stage—as having arrived at the "summit" of their career:

During the principal preparation program several serving principals were invited to share their experience with us. I really envied them. They had traveled a long path and had reached the summit. I will need a long, long time to reach the high degree of competence that they display now. They really know how to navigate the huge ship that is called school. They really understand how things are connected to each other and how they influence each other. I'm jealous!

At the far end of her career, Louise, an experienced high-school principal who had served in this role for 16 years, retrospectively recognized the stage in her

professional life that could be termed role maturity. Louise emphasized that this experience of mature systems thinking led no less than to a feeling of joy:

Looking back, I think that only after quite a few years as a principal I started to enjoy the work. At first, I didn't understand how all the parts of the school are closely related. Slowly, I learned how not to drown in a sea of tasks. As an experienced principal, I knew to lead the school to success and also to enjoy it. The enjoyment was because I was able to foresee how all elements in our school were connected so it was easier to initiate changes.

In sum, the *role maturity* stage is characterized by the principal's performance at a higher level of systems thinking. Unsurprisingly, the high proficiency in systems thinking should be facilitated by the prior stage of stabilization and consolidation. However, as mentioned above, the development of *Holistic School Leadership* is not linear. Principals may move back and forth between the stages, shifting from higher levels of systems thinking back down to lower levels at times of ongoing stress, such as when student registration declines or during a budget crisis. Importantly, the examples of high systems-level performance described above as the four major characteristics of the *Holistic School Leadership* approach (see Sect. 6.2) mostly derive from the voices of principals who are in the role maturity stage of their systems-thinking development. As seen from the above multiplicity of examples, the role maturity stage is the point in the principal's career when the *Holistic School Leadership* management approach is best applied.

STAGE 4—THE ROLE MATURITY STAGE IN DEVELOPING *HOLISTIC SCHOOL LEADERSHIP*:

- High level of *Holistic School Leadership*
- Perceived as best years of systemic capacity

8.2.5 Stage 5: Possible Decline

Following the peak or summit of the principal's career, a phenomenon of possible decline in the capacity for *Holistic School Leadership* may occur. Participants in our research underscored that this *possible decline stage* may occur in some veteran principals. These participants pointed out that sometimes overconfidence and abundant years of experience may mislead veteran principals into thinking that they are continuing to see the whole picture when in fact they no longer do, because of changes occurring in the system. For example, during a focus group, Eric, an experienced high-school principal serving in this role for 11 years, stated:

We're in an era when almost every facet of our work requires ongoing changes, and veteran principals, who get used to the traditional ways of running schools, often don't look at doing things in new and creative ways. As I said, I agree with Aaron [who held the principal position for 8 years] that you can't develop your systems thinking without experience, but at some point veteran principals can't see the system clearly anymore, because they're locked into the old paradigms. That kind of experience doesn't contribute to their performance; it blocks them.

According to Eric, *managerial experience* is not always a conducive source of *Holistic School Leadership*. Too much experience can be an obstacle, because it may lock one into old paradigms. Eleanor, an experienced elementary-school principal serving in this role for 8 years, who also attended the focus group, supported Eric:

Although innovative, dynamic, and creative qualities are more likely associated with younger and more energetic school principals, I don't think that we need just young school principals, because veteran school principals have their own assets. However, at some point the veteran principals become too experienced. They lose the flexibility that is required for a broad view that sees the whole picture, and remain fixed in antiquated mindsets.

Tammy, an experienced middle-school principal serving in this role for 9 years, spoke one of our focus group meetings about her age, noting that she sometimes sees veteran school principals who fail to *evaluate the significance* of the school's needs, which is one of the characteristics of systems thinking:

As a school principal, I am quite old; in almost every meeting of principals I am the oldest. See, all of my life I have felt younger than my age; now I am 62 but feel and act like I'm 40. I think that I am still relevant, but I am going to retire because I don't want to be like the other veteran principals whom I sometimes see, who are sure that they are still at their best while in actual fact they're past their prime. A mentally old school principal can't prioritize his school's needs, doesn't really understand the current jargon, and can't evaluate new modes of action. They pay attention to the wrong parts of the system, failing in recognizing the most important pieces of the puzzle.

Furthermore, Helen, a high-school novice principal with 13 years of prior teaching experience, said during her first year on the job that she did not want to be like the veteran school principals she knew, who only considered their own point of view:

I can't believe it, but I'm almost 40. I've always shocked people by telling them my age and always felt younger than what I was, until now. I suppose young and old are relative terms, but at our local school principals' meetings I see some dinosaurs who don't realize how they are no longer relevant. They don't understand today's students' needs and language, and they don't think they have to consult with their team, because in their opinion they have already seen and heard everything and they think they can now see the whole picture on their own.

According to Helen, some declining veteran principals do not listen to their teachers' suggestions because they feel they have already "seen and heard everything."

Carolyn, a high-school principal with 12 years of experience, who is about to retire, noted that in the past she had a systemic perspective, which probably diminished over time:

Not long ago, in one of the principals' meetings which I attended, participants were asked to choose a time in their lives, to which they aspire to return. I said that I would like to be back in my best principalship years. I wouldn't want to be a new principal again, who still can't do her job properly; I would like to go back to being a principal who had already gained several years of experience and therefore possessed a meta-view of school. I currently feel that I'm not as sharp as in the past. I used to thoroughly understand the needs of the school and how everything is interconnected.

In these candid words, Carolyn expressed her sense that her administrative capacity to see the "meta-view" was not as it once was.

In sum, the fifth stage, transpiring in later years on the job, involves a possible process of decline in school principals' systems-thinking abilities. The available research on late-career principals is limited and inconclusive. However, recent studies (e.g., Mulford et al. 2009; Oplatka 2007, 2010; Woods 2002) not only found a lack of significant differences between the job performance of older and younger school principals but even accentuated a high capacity for adaptation, participative leadership style, and professional competence in the late career stage. Our participants' recurring mention of possible decline in terms of veteran principals' ability to perform at a high systemic level thus calls for further exploration.

STAGE 5—THE POSSIBLE DECLINE STAGE IN *HOLISTIC SCHOOL LEADERSHIP*:

- Extensive experience can be an obstacle to openness to systems thinking
- Holistic School Leadership sometimes decreases in veteran school principals

8.3 Conclusion

This chapter elaborated on the five stages that our research identified for the development of *Holistic School Leadership* over school leaders' careers. These five stages are presented in Fig. 8.1: the preservice stage, the survival stage, the consolidation stage, the role maturity stage, and the possible decline stage. To recall, two aspects of principals' development were examined here: the sources of *Holistic School Leadership* (e.g., managerial experience, natural aptitude—see Chap. 7) and the career stages through which *Holistic School Leadership* develops, at focus in the current chapter. The sources of *Holistic School Leadership* that were presented

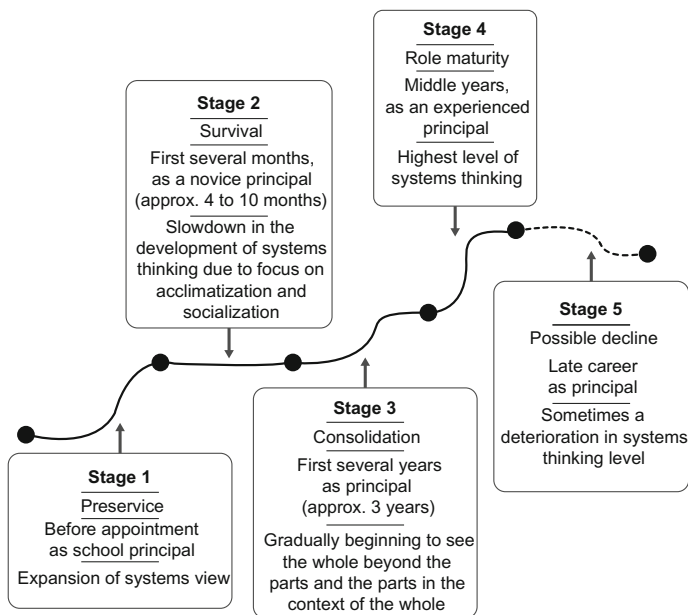


Fig. 8.1 The developmental process of *Holistic School Leadership* acquisition along the school principal's career stages

in the previous chapter probably somewhat resemble the sources of systems thinking in other domains (see Sect. 7.3). In contrast, the developmental stages for acquiring a *Holistic School Leadership* approach presumably differs from the career stages typifying other domains, because this approach's development is closely related to the pathway of school leaders' professional development. Thus, the development of systems thinking in the domain of school leadership should be explored primarily in light of school leaders' distinctive trajectory rather than through interdisciplinary studies investigating the development of systemic thinking among professionals in general.

As described in Sect. 8.1, several models have been suggested in the literature for describing the stages of school leaders' development. Although these models differ in their number of stages, names, and duration, all of the models' fundamental structure is similar, beginning with the preservice preparation stage, continuing to the entry stage, and ending with the stability stage. According to these models (e.g., Barnett and O'Mahony 2008; Earley and Weindling 2004; Oplatka 2010), none of which explicitly investigated systems thinking empirically, novice school principals attribute prime importance to learning the day-to-day technical aspects of their new job, akin to the survival stage that we identified, with its emphasis on technical

rather than holistic aspects. Once the technical aspects are mastered, the emphasis shifts to independent work. According to the general career-stage models, it is only when a principal has obtained thorough understanding of the intricacies of the lower positions under his or her purview that he or she can begin to act as a mentor to teachers and can concentrate work efforts on providing direction at an organizational level.

The current chapter has shown that the development of systems thinking among school leaders resembles the structure of educational leadership development described by prior models. However, in line with the systems approach's conceptualization of most processes as nonlinear, each of these models—both the general prior ones as well as the current *Holistic School Leadership* model—should be considered as offering only an overall outline of developmental trends over the principal's career. Importantly, within each stage of school leaders' career, regression and progression processes should be considered as a natural part of systems-thinking development. This variability and unevenness of systems-thinking growth patterns (represented in the wavy oscillating lines depicting each stage in Fig. 8.1) appear to hold implications for the kinds of support that should be provided to principals at the different stages of their *Holistic School Leadership* development.

Drago-Severson (2009, 2012) argued that leading others is an expression of the school leader's self, which is the core of any leadership enterprise and influences every aspect of the leader's work for others. Therefore, building internal capabilities enables school leaders become more effective in supporting others (see also Drago-Severson et al. 2013, 2015). From this perspective, the systems-thinking developmental process that school leaders undergo across their career should be seen as transformational learning, which allows them to successfully manage the contemporary complexities of teaching and learning.

Figure 8.1 illustrates the career trajectory for systems thinking in school leadership. The slopes of the continuous line represent the developmental process of systems thinking in school leadership, with dots separating the five incremental lines representing the different stages. This figure shows that there is an initial growth at preservice, followed by stagnation during the survival stage, more growth during consolidation, role maturity leading to the highest level of systems thinking, and then deterioration, which is presented by a dashed line to show that it only sometimes occurs.

The view of systems thinking in school leadership as a continuous developmental process is consistent with the conception of systems thinking as a framework for seeing patterns of change rather than static "snapshots" (Senge 1990). This holistic view of systems-thinking development envisions ongoing long-term processes of progress and regression in professional growth over time, rather than focusing on separate unconnected events. Thus, systems-thinking development should be seen as lifelong learning, an unending pursuit of knowledge taking place on an ongoing basis.

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Chapter 9

Holistic School Leadership as an Educational Leadership Framework

Following our presentation of the major characteristics embodying *Holistic School Leadership*, as well as the sources or mechanisms underlying its acquisition and the developmental trajectory for this gradual process, the implications of this systems-thinking management approach deserve further exploration. This chapter presents suggested applications of *Holistic School Leadership* for policy makers, with an eye for applications that are relevant to the different stages of a principal's career. For this purpose, we next discuss possible opportunities for utilizing *Holistic School Leadership* to train, assist, select, and evaluate school leaders—spanning the preservice mid-level management stage to the inservice stage and, in turn, to the later stages comprising lifelong learning. In addition, this chapter suggests specific strategies for developing *Holistic School Leadership* among future and currently performing school leaders. To further elaborate on the real-world implications of *Holistic School Leadership*, practical applications for activating school leaders are presented in Chap. 10.

9.1 *Holistic School Leadership* Among Mid-Level School Leaders

Although most of our research has been conducted among principals, we believe that leadership as an organizational function extends beyond the sole position of the principal. As repeatedly emphasized by our research participants, their prior middle-management experiences substantially enhanced their systems-thinking development (see Sect. 7.2.1). This finding holds important implications not only for examining the past history and managerial trajectory of prospective principals

but also for generating policies that encourage school principals to create a working milieu conducive to staff members' systems-thinking development in order to empower their leadership skills.

Indeed, mid-level educational leaders within the school have the potential to contribute considerably to the school leadership team. Yet often such mid-level school position holders are overlooked. Teachers who hold managerial responsibility for staff (e.g., English department coordinator) or for an aspect of the school's work (e.g., social activities coordinator) or of the student body (e.g., fourth-grade coordinator) are often not considered to be an integral part of the school leadership. While the senior team—which basically comprises the principal and the assistant principal, shapes the school's ethos, sets policy, and establishes guidelines—those mid-level school leaders who constitute an intermediate layer of management are responsible for implementing the senior team's decisions and making them a reality. Despite the importance of the middle leaders' role, their educational work is often overlooked (Leask and Terrell 2013). Even assistant principals have been described as an underutilized, forgotten, and wasted educational resource in schools (Barnett et al. 2012).

Improving the competencies of assistant principals and mid-level school leaders should be a high priority for the principal due to considerations about the present and considerations about the future. First, with regard to the present, these managers are often those figures in the school who act as the driving force behind attempts to improve teaching and learning quality, which can significantly influence student achievements—the “bottom line” for measurement of school success in today's era of accountability (Fleming and Amesbury 2012; Hammersley-Fletcher and Strain 2011). Moreover, these mid-level managers' and assistant principals' ongoing input and feedback to the principal can be a valuable source of information and perspective that enables the principal to better see all the parts and thereby view the school as a whole. It is a two-way street: the principal empowers the mid-level managers' systems thinking and they help the principal see things holistically.

Second, with regard to the future, in many cases school principals of tomorrow start out as the mid-level school leaders and assistant principals of today. Serving in these roles may be a preliminary landmark along the professional path of school principals (see Sect. 7.2.1). Thus, current principals should act as a role model for their staff members (see Sect. 7.2.2), urging suitable teachers to take on such middle management roles. Furthermore, principals would do well to encourage staff members to try out a variety of school positions in order to enhance multiple perspectives about the school's functioning, which may contribute substantially to broader, more holistic perceptions (see above Sects. 7.3 and 9.3).

Treating today's assistant principals and mid-level school leaders as potential future principals highlights the importance of enhancing their professional development. Therefore, principals should place emphasis on teaching the fundamentals of *Holistic School Leadership* to assistant principals and mid-level school leaders during day-to-day working interactions, in order to foster their performance at the systems level in their current position as well as when they become school leaders

in the future. It is advisable to provide these managers with varied explicit opportunities for gradual *Holistic School Leadership* acquisition. Many of our research participants described in glowing terms those principals who acted as systems-thinking role models by openly sharing their thought processes, explicating their deliberations and rationales, and systematically externalizing their own systems thinking, thereby methodically instructing their staff in that managerial approach (see Sect. 7.2.2).

Our research (Shaked and Schechter, In press-b) showed that *Holistic School Leadership* competencies among mid-level school leaders differ in quality from *Holistic School Leadership* among school principals. For middle managers, systems thinking more often seemed to be an aspiration rather than a reality—a concept that they heard was important but did not genuinely understand. Despite their rhetoric, some of them did not know much about systems thinking and were not fully aware of its possible applications. This relatively low level of systems thinking among mid-level school leaders may possibly be explained by the fact that, much of the time, mid-level school leaders are classroom teachers who hold an additional managerial role. Because their professional identity is primarily that of a classroom teacher, they may find it difficult to adopt a whole-school perspective.

Moreover, educational organizations like schools are considered to be loosely coupled systems—in which events and activities occurring in one part of the system fail to reverberate in clearly patterned ways elsewhere (Orton and Weick 1990; Weick 1982). That is, the loosely coupled system incorporates independent organizational elements (e.g., teachers) who generally operate independently (in separate classrooms). Although these individual members of the system are interrelated, their interactions are typified by low coordination, low information flow, and low interdependence. Put differently, the loosely coupled organizational structure of schools withholds ability to integrate mid-level leaders' meaningful feedback about core instructional and organizational processes. Specifically, this loose coupling precludes middle managers from developing systems-thinking skills. In this context, it is particularly important to nurture mid-level school leaders with the conceptual framework of *Holistic School Leadership*, developing their systems-thinking capability over time.

9.2 *Holistic School Leadership* in Principal Preparation Programs

The first stage in the professional training of school principals is the academic preparatory principalship training program. The quality of principals' functioning depends to a great extent on the quality of their preparation. However, study after study has shown that the training that principals typically receive does not do nearly enough to prepare them for their roles. Researchers and practitioners alike have expressed their doubts as to the sufficiency of traditional approaches to preparing

and licensing principals, claiming that principal preparation programs do not produce qualified principals who are capable of running schools successfully (e.g., Darling-Hammond et al. 2007; Hess and Kelly 2007; Schechter 2011).

Imparting the basics of *Holistic School Leadership* to prospective school principals may increase the likelihood that they will perform at this level. Hence, we recommend that current preparation programs explicitly incorporate the study of *Holistic School Leadership* into their curriculum. Direct teaching of *Holistic School Leadership* should include opportunities to contextualize prospective school principals' learning in actual school leadership experiences. For example, preservice principals may collectively analyze conflicts, decisions, or dilemmas taken from their daily professional lives through the prism of *Holistic School Leadership*. Even better, they may be asked to apply *Holistic School Leadership* in their own school reality as a leadership development practice. Over and above direct teaching of the *Holistic School Leadership* approach, it may be worthwhile to integrate this perspective into other subjects that are studied in preparatory programs, such as instructional leadership, data-driven decision-making, and school economics.

In addition to the importance attributed to academic study as a factor explaining the development of *Holistic School Leadership*, our findings highlighted the major role played by managerial experience as a mechanism underlying principals' development of this competency (Sect. 7.2.1). Thus, academic program designers may do well to add a work experience or internship requirement to principal preparation programs, aiming to provide on-the-job managerial training in *Holistic School Leadership*. This internship may be offered during the last year of the preparation period. During this year, aspiring principals will be expected to put into practice the *Holistic School Leadership* that learned in their academic course, and they will receive guidance from an experienced principal mentor. Although such an internship may raise some practical complexities, it would seem desirable to provide prospective principals with the opportunity to develop *Holistic School Leadership* through "real-life" experiences holding mid-level management positions at school, prior to entering the actual principalship role.

9.3 *Holistic School Leadership* in Selecting School Principals

Selection of the right candidates for school leadership positions renders a significant impact on schools' performance. Thus, well-defined screening and assessment processes to select optimal school leaders are crucial for building and sustaining successful schools. An effective principal selection process increases the likelihood that the most appropriate candidates are appointed to these senior leadership positions.

We assert that the selection process for new principals may be optimized if candidates' capacity for *Holistic School Leadership* is taken into account. Thus, the candidates' managerial experience, which is probably one of the most important

sources of *Holistic School Leadership* (as explained in Sect. 7.2.2), deserves careful attention. A candidate who does not have sufficient prior experience in a school managerial position such as assistant principal, educational counselor, grade-level coordinator, or department head may have a lower chance of becoming a successful systems thinker, even if he or she did have extensive prior experience as a teacher. Experience in more than one school position is even better, because acquisition of different points of view about the school reality can expand the candidate's ability to perform at the level of *Holistic School Leadership* (see Sect. 7.3).

Furthermore, the *Holistic School Leadership* ability exhibited by principalship candidates may be identified via interviews. Questions dealing directly with *Holistic School Leadership* may be introduced only during the last part of the interview, to avoid priming empty rhetoric during the first part of the interview. Interviewees naturally interpret what they believe the interviewer wants to hear, and this social desirability may unintentionally bias their answers, thereby possibly skewing the interviewer's decisions. Thus, in the first part of an interview that aims to identify *Holistic School Leadership* ability in prospective principals, we recommend using our qualitative methodology (Shaked and Schechter 2014, 2016; In press-a) that, without mentioning the terms "holism" or "systems thinking," seeks to lead interviewees to talk about *Holistic School Leadership*. Interviewees should be asked to point out their schools' main needs and hardships; to evaluate processes and events; or to discuss possible situations. The contents of interviewees' utterances may shed light on their level of *Holistic School Leadership* ability. Here are sample inexplicit questions that may effectively explore systems thinking among aspiring principals, divided according to the characteristics of *Holistic School Leadership* (see Chap. 6), and explicit questions for the last part of interview:

- *Leading wholes*: Which important processes are currently occurring at your school? Why do you think they are important? What are their consequences? Could anything compromise them, and what should be done to prevent this?
- *Leading wholes*: What do you know about planning an educational program at school? What is your own approach to this issue?
- *Adopting a multidimensional view*: Please tell me about a conflict that arose at your school. What do you see as the causes of this conflict? What were its implications? How do you think this conflict should have been handled?
- *Adopting a multidimensional view*: How do you analyze the causes of events at school? Please give an example.
- *Influencing indirectly*: How, in your opinion, should a principal solve a problem that arises at school? Please give an example.
- *Influencing indirectly*: Please complete the following—If I want my staff to behave in a certain way, then I...
- *Evaluating significance*: Among all the occurrences of the last week at school, which are of great significance? Why?
- *Explicit questions near end of interview*: Do you think you possess systems thinking? What is the meaning of this concept for you? How is it expressed?

9.4 *Holistic School Leadership Among Beginning School Principals*

Once appointed, novice principals face many immediate challenges—they must function effectively in a stressful new environment and assimilate quickly to a new culture. Recognizing how overwhelming this new job can be, in many cases novice principals describe the feeling that they need to “hit the ground running” just to keep up with the multiple and sometimes conflicting demands placed on them. As they begin their new position, even though they have worked for many years in the school system, they often find themselves surprised by the realities of school leadership and the hurdles they face (Crow 2006; Eller 2010). In contemporary education systems, schools’ high level of complexity—stems from the accountability environment, the need to address 21st-century academic and social demands, and other factors (see Sect. 1.1)—makes it even more difficult for new principals to successfully adapt to their job.

That said, too often principals are given the keys to the building, a pat on the back, and expected to go forth and succeed. The notion that novice school principals should optimally receive professional support at the outset has only recently gained wide recognition. Moreover, a report by the Wallace Foundation (2007) showed that many existing programs for beginning principals fall short of their potential. *Holistic School Leadership* may furnish a valuable conceptual framework for implementation in the programs designed to support new principals, providing them with a perspective through which they can better understand their everyday reality and find effective strategies for creating well-functioning schools.

In addition to screening prospective principal candidates for their *Holistic School Leadership* skills before the principals’ appointment, new principals’ *Holistic School Leadership* may be reevaluated after several years on the job. This later reevaluation is required because the development of *Holistic School Leadership* takes time, and it unfolds gradually as an outcome of manifold long-term experiences. The reevaluation, accompanied by detailed feedback, may help the growing principal to pinpoint which areas are well-developed and which need further improvement. Moreover, this screening tool may also help superintendents determine which school principals have not adequately acquired *Holistic School Leadership* capacities and can even suggest which necessary practices should be tailored to the specific principal to narrow the existing gaps in his or her holistic leadership development.

This reevaluation may be conducted through an interview as described above or through a written or online questionnaire. The following sample questions may guide such reevaluation procedures for novice principals, again starting with inexplicit probes and finishing with explicit questions about *Holistic School Leadership*. However, considering the possible impediments that were found to trouble novice principals, thereby leading to cognitive and emotional unavailability to engage in systems thinking (as shown in Sect. 8.2.2), the reevaluation items should also ask about their increased vulnerabilities. Such questions might pertain

to overburdening day-to-day management tasks, personal insecurities due to their inexperience, and interpersonal tensions with staff members:

- *Leading wholes*: Does your school have a cohesive vision? What is it? Which areas does it affect?
- *Leading wholes*: How do you feel when there is a lack of knowledge about all the details of a particular situation?
- *Adopting a multidimensional view*: Please tell me about an issue that your school needs to improve. What might happen if this issue is not improved? What can increase the chances of this issue being improved?
- *Influencing indirectly*: How do you typically handle deficiencies in your teachers' conduct? Why?
- *Influencing indirectly*: Please complete—When things don't turn out the way I expected, I...
- *Evaluating significance*: How do you identify the importance and the relevance of each element in school life? How do you operate, as a result?
- *Explicit questions near end of interview*: Do you think you have already developed systems thinking? What is the meaning of this concept for you? How is it expressed?

9.5 *Holistic School Leadership as Lifelong Learning*

Helping principals learn about *Holistic School Leadership* may be timely even after the first few years on the job, because school principals need to continuously enhance their skills and consolidate their leadership knowledge—during the consolidation and the role maturity stages (see Sects. 8.2.3 and 8.2.4)—and because principals persistently face dynamic changes in perceptions of and expectations from their role. School leaders must at least occasionally invest effort into refreshing their abilities in order to maintain and improve their productivity and better meet the complex challenges waiting at every corner. Otherwise, principals may erroneously evaluate themselves as systems thinkers even if their methods have become antiquated or arbitrary, losing touch with the current school climate (see the possible decline stage, Sect. 8.2.5). Even among highly experienced school leaders, *Holistic School Leadership* training may be significant, in order to renew openness to experimentation and attentiveness to others' input instead of falling into inertia or becoming overconfident in routines that were proven successful in the past.

The notion of lifelong learning, which means that education is important not only to land a job but also to continue to develop professionally, has recently received much attention as an approach for the professional development of educators in general (e.g., Dolan 2012; Hersterman 2012; Sahin et al. 2010), and school leaders in particular. In England, for example, once school leaders are appointed to their first school leadership post, they undertake continuing professional development to ensure that their educational management is kept up-to-date and

well-developed, and in Finland school leaders' continuing professional development is a part of the Osaava (which means "skilled") national program for teachers' continuing education (European Federation of Educational Employers 2012). Based on the results of the International Study of Principal Preparation (ISPP), the "life-long learning leader" framework was devised, presenting a model for ongoing leadership development. This framework, which is intended for use by designers of leadership training programs, contains eight dimensions to be addressed: career stage, career aspirations, visionary capacity, boundary breaking entrepreneurialism, professional skills, instructional design and assessment literacy, crisis management, and approaches to leadership development (Scott and Webber 2008).

According to Drago-Severson (2012), lifelong learning among school leaders should emphasize the importance of caring for one's own self-development and renewal while at the same time caring for and supporting others. Her main argument is that who we are plays a central role in our leadership: That is, leading others is a tremendous expression of self. The educational leader's "self" sits at the very heart of any leadership enterprise and influences every aspect of the work done with and for others. Thus, authentic growth in school leaders can be achieved by building their internal ability to better manage the complexities of learning and leading. Such changes in the self can help them become more effective in supporting others. Specifically, this growth includes increases in cognitive, emotional, interpersonal, and intrapersonal capacities, which can allow principals to better manage the complexities of leading, learning, teaching, and living (see Drago-Severson 2004, 2009, 2012; Drago-Severson et al. 2013, 2015).

Inasmuch as *Holistic School Leadership* evolves through a long developmental trajectory, the classic spiral curriculum method is apt. Teaching of and experiencing this approach more than once over the school principal's career—first as a teacher or mid-level manager observing a systems-thinking role model, then as a novice principal supported by a mentor, and finally as a mature principal empowering staff members' *Holistic School Leadership* development—may enable a spiraling learning effect throughout principals' educational career. Such spiraling development includes repeated study of *Holistic School Leadership*, where emphases coincide with the school leaders' specific career stages and aspirations.

The ongoing development of *Holistic School Leadership* among currently performing school leaders may be also be in the best interest of superintendents. In an effort to respond to the contemporary era of accountability, district level leaders find themselves reconsidering their roles and responsibilities. In line with the expectation for schools to demonstrate improved student achievements, superintendents are always looking for ways to help school leaders to improve learning and teaching in ways that positively affect student performance. To this end, another stage in the developmental trajectory may be added: Superintendents' job performance should include skillfulness in helping improve school leaders' holistic perspective. In particular, contemporary superintendents should generate opportunities to develop a *Holistic School Leadership* approach among principals through policies designed at

the district level. In addition, superintendents must facilitate, support, and provide resources for enhancing *Holistic School Leadership* at the school-building level.

9.6 Strategies for Developing *Holistic School Leadership*

One of the sources of *Holistic School Leadership* is academic study (Sect. 7.2.3). How can *Holistic School Leadership* be acquired by school leaders? As aforementioned (Sect. 7.1), several methods have been proposed as means of teaching systems thinking, such as metaphors (Taber 2007), hybrid models (Levin and Levin 2013) and modeling (Hung 2008). However, in keeping with its essence as a holistic mode of systems thinking, *Holistic School Leadership* is naturally suited to cultivation through *collaborative learning* strategies. Collaborative learning is a setting in which individuals learn together. Unlike individual learning, collaborative learning involves a joint intellectual endeavor, in which learners depend on and are accountable to each other, utilizing one another's resources in ways such as asking one another for information, evaluating one another's ideas, and monitoring one another's work. When compared to more traditional methods where learners non-interactively received information from an instructor, collaborative learning demonstrated improved learner comprehension, achievement, motivation, and interpersonal relationships (e.g., Murphy et al. 2009; Pattanpichet 2011; Zhu 2012).

Collaborative learning is particularly relevant to school principals because it is considered an efficacious leadership style. Today's leaders do not impose values, but instead they work to establish collaborative learning that respects various assets and voices. They lead from the center rather than from the top, and concentrate on posing core questions rather than imposing predetermined solutions. Thus, acquiring special expertise or technique is valuable but not sufficient for an educational leader; more importantly, a leader engaging in a collective learning process must serve as the group facilitator, who explains the collaborative process and moderates the discussion toward shared group action. Leaders must abandon the heroic management stance of knowing all, being all, and doing all. Instead of providing the right answers, leaders are obligated to search for the right questions, which foster collaborative learning (see Schechter 2013).

Indeed, collaborative learning is closely related to *Holistic School Leadership*. As mentioned above (Sect. 6.2.2), one of the characteristics of *Holistic School Leadership* is *adopting a multidimensional view*. A principal who understands that each situation has several aspects, several interpretations, and several possible implications seeks to understand the full picture by listening to other points of view. Willingness to learn from others is the basis of collaborative learning. In order to see the whole beyond the parts and to see the parts in the context of the whole, principals must be extremely willing to listen to others and learn from others. Thus, collaborative learning is an approach that is inherently suited to cultivating *Holistic School Leadership*.

Collaborative learning may be implemented through a variety of teaching methods. One of them is *case-based learning*, in which educational leaders discuss complex, real-life situations involving a dilemma or an uncertain outcome. Based on our findings, we recommend using case-based learning as a means for developing *Holistic School Leadership* among aspiring as well as currently performing school principals. In this teaching method, the case is presented in the context of the events, people, and factors that influenced it, enabling a sense of close identification with those involved. The case is used as a trigger to stimulate interest in learning, helping to clarify relationships between theory and practice. However, providing rich cases is not sufficient for successful case-based learning. The key to this method is engaging educational leaders in discussion that provides them with opportunities to analyze, propose solutions, evaluate potential solutions, solve problems, and make decisions. The content of cases and the process of discussion are inseparable in case-based learning.

Educational research has shown case-based learning to be a useful pedagogical tool. It enables the implementation of active learning strategies that make learning more effective. It is also an interactive learning strategy, which shifts the emphasis from instructor-centered to more learner-centered activities, promoting autonomous learning. Case-based learning has been linked with increased learner motivation and interest in the subject being learned. It also encourages the development of critical thinking and problem-solving abilities, requiring the practice of skills such as information retrieval, selection, analysis, and synthesis (e.g., Baeten et al. 2012; Choi and Lee 2009; Kim and Hannafin 2009). In our research, case-based learning in a principal preparation program was found to contribute to the development of a multidimensional view among prospective school leaders, which is one of the major characteristics of *Holistic School Leadership* (see Sect. 6.2.2).

When employing case-based learning among school leaders, it is not necessary to use fictitious cases. Participants may be asked to present a case that is based on their professional life. The case should be a description of a significant leadership issue faced by a single educator, an educational team, or a school as an organization, presented in narrative form, including sufficient information to allow analysis. The authenticity of cases was found in our research to be a major motivating element, leading to increased involvement and enhanced learning for the entire group.

Case-based learning is closely related to the more common *problem-based learning* approach, in which educational leaders learn about a subject through the experience of problem solving. This problem-solving process stimulates a willingness to critique traditional working patterns and to consider alternatives. Without denying the importance of problem-based learning, in learning based on cases, participants can also deliberate collectively on successful practices. Learning from successes focuses on educational leaders' shift from selective inattention to successful practices, which thereby remain unexplored by professionals, to selective attention devoted to successes. The latter involves collectively focusing on school leaders' successful practices in order to uncover the implicit wisdom that made those successes possible (Schechter 2011).

9.7 Conclusion

As a conceptual framework, *Holistic School Leadership* is valuable across the career span, ranging from the early preparation of future school leaders to on-the-job training of highly experienced school leaders. It may contribute to principal preparation, selection, evaluation, and ongoing development. Seizing these opportunities, educational agencies, district leaders, and principal educators may meaningfully improve contemporary educational leadership and thereby enhance today's schools.

Further research should explore the contribution of *Holistic School Leadership* to social networks. Social networks in schools can impede or facilitate education reform, since the essence of effective reform is not to be found only in plans, punishments, or performance incentives, but rather mainly in professional interactions and relationships (Daly 2010). School leaders should rely on others as well as building upon their own leadership capacity, thus helping staff members understand the problems they are facing and deal with them independently. In this way, systems thinking may enable leaders to cultivate and amass the intellectual capital needed for the school's organizational IQ to increase (Sergiovanni 2005).

In addition, possible contributions of systems thinking to instructional leadership should be explored. Contemporary school principals are not seen as mere managerial or organizational administrators any longer; at present, instructional leadership is one of their most significant responsibilities (Rigby 2014; Salo et al. 2015). They are expected to assume a prominent role as instructional leaders, who continually improve teaching and learning in order to promote high academic achievement levels for all students (DiPaola and Hoy 2008; Tan 2012). Systems thinking may contribute to various areas of instructional leadership, such as improvement of school curriculum, development of professional learning communities, and interpretation of performance data (Shaked and Schechter, In press-c).

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Chapter 10

Holistic School Leadership in Action

School leadership's effectiveness is crucial to improving student outcomes, and its greatest influence is felt in schools with the greatest need. Leithwood et al. (2004) noted that "school leadership is second only to classroom teaching as an influence on pupil learning" (p. 7). Bryk et al. (2010) even argued that "school leadership sits in the first position" (p. 197), concluding that "the school principal ... orchestrates the collaborative process of school transformation" (p. 203). One of the largest in-depth studies of school leadership reported that "we have not found a single case of a school improving its student achievement record in the absence of talented leadership" (Louis et al. 2010, p. 9).

This chapter suggests practical principles for thinking and acting, as offered to school leaders who wish to improve their effectiveness by applying the *Holistic School Leadership* approach. These action principles are divided according to the four major characteristics of *Holistic School Leadership* presented in Sect. 6.2. We conclude with action principles related to the two aspects of *Holistic School Leadership* acquisition—its sources (presented in Sect. 7.2) and its development (presented in Sect. 8.2) over the stages of the principal's career (see Sect. 8.1).

10.1 Action Principles for Leading Wholes

This characteristic of *Holistic School Leadership* involves a holistic perspective, oriented toward seeing the big picture and not only its separate parts. School leaders who implement *Leading Wholes* consider systems above and beyond their components, recognizing how each of the components functions as part of the entire system. They view all the parts of the system in the context of and in relation to the other parts, understanding that the whole emerges from the relationships transpiring among its parts. Various action principles may assist school leaders to enhance their own ability to lead wholes:

- Look at your school as one large entity. Instead of isolating small parts of your school, expand your view to take into account larger numbers of interactions.
- In order to assimilate your school's main concepts and values successfully, they must be implemented not only in a single area of school life, but rather in all areas of school life.
- Look at any given issue from any sort of school life area—be it a program, event, or pupil—as a whole system rather than a collection of details.
- Your simplification of complex situations should be accomplished in a way that does not overlook the interconnections occurring among the elements at play in the situation.
- Reduce the level of detail in your representation of complex situations. Primarily focusing on details does not help and may even interfere with your holistic understanding of the situation.
- Sometimes you have to tolerate uncertainty, despite the discomfort. By viewing seemingly separate details as parts of one big picture, you may become able to deal with tasks based on currently available information, even if it is only partial.
- When you have to solve a problem, note that its root causes may be found elsewhere in the system. Remember that the problem you face may be caused by a web of tightly interconnected circular relationships.
- Difficulties in solving problems at school often stem from the fact that problems do not occur in isolation, but in relation to each other.
- Optimizing the entire system as a whole yields better outcomes, with fewer unintended consequences, than does analyzing and improving each element on its own.
- In order to improve the whole, you need to optimize the interactions among its parts. Interaction management may result in improving performance, reducing conflicts, expanding delegation of responsibility, and overcoming resistance.
- As parts of the large system of the school, parents should be seen as potential partners. Networking with parents may enable you to better achieve the school's goals.
- You should consider authorities and agencies, with which your school is in contact, as parts of one system. Thus, collaboration between the school and these stakeholders is essential; likewise, any disconnects or lack of cooperation may harm your school.
- Multiple school stakeholders must work together, rather than alone. By integrating their efforts, coordinating their policies, and playing to their strengths, these partners can better achieve the school's goals.
- Teachers are members of one large organization, which operates as a whole. Therefore, teachers should promote the entire school collaboratively.
- A single teacher must not focus only on his or her position, but rather must feel responsible for the whole school's output.
- A group of students or staff members may present characteristics that differ from the sum of the individuals' features. Properties of systems emerge through interactions among the system's components, which themselves do not exhibit such properties.

In sum, *Leading Wholes* means seeing the whole picture, with regard to the networks of interactions that exist within the school and between the school and its surrounding environment. Put differently, the substance of *Leading Wholes* is your focus not only on the trees but also on the forest—where the trees are particular situations or limited domains, while the forest is an overall view that recognizes how those tree subsystems continuously interrelate and mutually affect each other within the whole forest.

10.2 Action Principles for Adopting a Multidimensional View

This characteristic of *Holistic School Leadership* involves taking a wide variety of aspects into consideration simultaneously. Our thinking of the world sometimes tends to be uni-dimensional, which sees things simplistically, ignoring their complexity and versatility. School leaders who possess a *Multidimensional View* know that the school reality has many facets; therefore, they look at it from several points of view, considering a wide variety of interpretations, options, and courses of action. Various action principles may assist school leaders to enhance their own ability to adopt a multidimensional view:

- A single occurrence at school often has several causes. Thus, you should call into question any one single explanation for a specific occurrence.
- Consider various response options to a single situation. Avoid adopting a known response for the current problem—it might not be suitable. Think over new solutions repeatedly.
- More than one option is possible in any given situation. When you envisage only one option in a given situation, you are probably missing out on others.
- Sometimes two opposing options, which may seem mutually exclusive, can both be possible concurrently.
- Integrate different dimensions into a comprehensive educational practice. Do not present educational plans that are based on “the one and only” principle.
- It is important to look at things from many viewpoints to see holistically. Seek to understand the full picture by listening to other points of view.
- Ask for input into decisions before the decision is final. Making a pretense of consulting—on issues that have already been decided—is unproductive and engenders suspicion and mistrust about the process among your teachers.
- Encourage and seek feedback. Inviting feedback from teachers can help you improve your decisions and your school.
- Do not spend too much time being the smartest person in the room. The kind of smarts that you need is collective, thus facilitating dialogue and collaboration among multiple stakeholders.

- You have to triangulate. You should get different people, from different points of view, who see different parts of the system, to come together and collectively start to see something that individually none of them see and neither do you.

In short, *Adopting a Multidimensional View* is the diametric opposite of linear operations, which are based on the assumption that there is only one reason, one explanation, one implication, or one answer. School leaders who demonstrate *Adopting a Multidimensional View* believe that different points of view about a subject may establish a thorough understanding of situations, leading to better paths to pursue.

10.3 Action Principles for Influencing Indirectly

This characteristic of *Holistic School Leadership* is more than a technique. *Influencing Indirectly* is based on the understanding of the school as a complex system of interrelated parts. For example, you want to make a positive change in your school. You attack the problem head on, thinking you can solve it quickly, but things get worse. You try harder, but instead of progressing, the situation becomes more tense, teachers start taking sides, and your desired change seems more distant than ever. With these bad feelings and fighting teachers, your original goal of introducing a positive change is now forgotten. What went wrong? You probably thought you could directly affect a change in a complex situation. You will be more effective at making a change when you address challenges indirectly rather than dealing with them through direct attacks. Various action principles may assist school leaders to enhance their own ability to influence indirectly:

- Improvement in one area of the school can positively affect other areas of the school. Thus, it may suffice to deal with some of the issues that come up during daily school life because the other issues will gradually be altered by mutual influences.
- You may think that huge changes in your school are needed to see significant results. Identify leverage points, which are changes that might introduce a substantial improvement by minimum effort. Often, the leverage points in a system are not where they would originally seem to be. Look for them carefully.
- By changing and strengthening the school culture, you can indirectly influence the motivation and behavior of your teachers. Establish a climate for creativity, which continually challenges and stimulates teachers. This climate may indirectly increase teachers' innovation.
- Time may pass between one action and its resulting feedback; this is a delay. A delay creates a situation where you can easily overreact, because you still cannot see the full effect. React cautiously, until you finally get it right.

- Because of delays, things that happen now cause things to happen that you can only see later on. Take into account the future consequences of your present decisions and actions. Pay attention to slow and gradual processes.
- Considering delays, you cannot change things overnight. Keep in mind that changes take time.
- Considering delays, work today for tomorrow's school. Since the results of your actions will be felt only later, start now to prepare your school to meet its future challenges.
- Influencing indirectly, you have a great impact. Do not accuse and blame others within the school. Instead of blaming your teachers for deficiencies in their conduct, seek how you can help them to improve their performance.
- Do not shift the blame to parties outside the school because problems are often internally generated by previous actions. Collaboratively change your school's practice.
- Identify outside factors that may affect your school indirectly. These more distant influences may have a substantial impact on your school.

Influencing Indirectly involves using a circuitous approach when dealing with tasks and challenges, based on the understanding that elements in the system are connected to each other, even if this is not apparent at first glance. Therefore, tackling problematic school issues directly may lead to short-term pseudo-improvement, while generating unintended negative results in the long-run.

10.4 Action Principles for Evaluating Significance

This characteristic of *Holistic School Leadership* involves identifying the role, the importance, the relevance, and the significance of each element in school life for the whole system. Like many school leaders, you are probably flooded with an enormous amount of information, having a lot to do. In this situation, it is often hard to know which things to handle and what to do first. Some school leaders even feel that they are overwhelmed or out of control. The key to lifting yourself out of this cycle is to *Evaluate Significance*. Various action principles may assist school leaders to enhance their own ability to evaluate significance:

- Try to discern repeating patterns in school life, linking separate elements in order to derive their meaning. Pay attention to elusive hints and figure out what they suggest, learning your school's invisible characteristics.
- Try to recognize the small occurrences that are of great significance to the entire system. You may miss these small occurrences simply because you are not tracking them. Filter out the less essential elements of the school's complex and dynamic reality, addressing the issues that are most important to the school as a whole.

- School leadership inherently involves competing tasks and priorities. Remember that adhering to the system's key tasks will offer more benefit than others. Take the time to be clear about your goals and objectives so that the priorities you set are moving you in the direction that is of real value to the entire school.
- Note that the amount of time you put in overall is less important than the amount of time you spend working on tasks that are a priority for the whole school.
- When something is really important, it's easy to get caught up in the details. Spending too much time on one priority, however, prevents you from seeing the whole system.
- To be able to effectively prioritize, you must be able to deal with changing priorities. Be flexible.
- Once you can clearly determine the priorities, say "no" to all diversions and distractions and focus on accomplishing those priorities. Do not spend your time on others' priorities rather than on the priorities of the system.
- Set expectations with others: Once you have determined what is really important to the whole system, share it with everyone involved and ask for feedback.
- One of the primary responsibilities of any school leader is to help teachers understand what is holistically important, what is less important, and what they should be working on.
- If you have three priorities for your school, you have priorities. If you have 25 priorities, you have a mess.

In short, it is easy in the rush of school life to become a reactor—to respond to everything that comes up, the moment it comes up, and give it your undivided attention until the next thing comes up. Unfortunately, that may be a recipe for failure. *Evaluating Significance* enables you to determine wisely on what your time should be spent, and what can wait. Looking at the significance of each thing to the entire system will help you avoid filling your time up with meaningless tasks; instead, you will identify the important patterns in the system as an anchor for further decisions and actions.

10.5 Action Principles for Self-development of *Holistic School Leadership* Over the Principal's Career

Developing the internal *Holistic School Leadership* capabilities enables school leaders to become more effective in supporting others. Therefore, an ongoing and self-motivated process of developing one's own *Holistic School Leadership* is recommended. This process should integrate an awareness of the various sources or building blocks of systems-thinking development (as seen in Chap. 7) together with an awareness of the developmental trajectory that principals undergo over the years

while acquiring the ability to perform at the systems level (as seen in Chap. 8). Various action principles may assist school leaders to enhance their own sources and stages of *Holistic School Leadership*:

- You may find it fruitful to learn the concepts and tools of systems thinking. Look for opportunities to do so, through courses, books, websites, and so forth.
- When you are an aspiring principal, try to accumulate experience as a mid-level school leader. Experience in more than one school position is advisable.
- When you are a novice principal struggling to survive from day to day, do not forget to invest in your *Holistic School Leadership* development. Spend time reflecting on your leadership, continue to learn by reading, attend professional meetings, and converse with other administrators.
- Look for wise, experienced school leaders who apply the systems view. Consult with them and learn from them, making them your mentors.
- Learning about systems thinking may be timely even after the first few years on the job, to expand and consolidate your existing leadership knowledge and skills. Listen to your staff and enrich your own holistic perspective via their input and feedback.
- Commit yourself to lifelong learning—an ongoing, voluntary, and self-motivated pursuit of knowledge about *Holistic School Leadership*.
- Move your mid-level school leaders around to enable them to obtain various experiences in all sorts of skills and different areas.
- One of your core responsibilities is to develop the skills and talents of your teachers. Provide them with learning opportunities in which they can simulate and reflect on their systems thinking's capacities.
- Serve as a guide/coach/mentor for your staff members, developing their systems-thinking ability. Externalize your systems thinking aloud, sharing your deliberations.
- Establish and foster teacher learning communities, where teachers can continually inquire into their practices via collaborative learning. Collective learning contributes—among other things—to the development of the teachers' systems thinking.
- Develop your school into a learning organization, which facilitates the learning of its teachers and continuously transforms itself. Create a supportive learning environment and productive cooperative learning processes and practices.

Holistic School Leadership evolves through a long process. Therefore, there is a need for spiraling *Holistic School Leadership* development throughout the principal's entire educational career. The development of *Holistic School Leadership* encompasses all types of available learning opportunities, formal and informal alike. It is an unending pursuit of holistic and complex frames of mind taking place on an ongoing basis—transformational learning that allows school leaders to successfully manage the contemporary complexities of teaching and learning.

10.6 Conclusion

This chapter presented principles of action, which are based on the *Holistic School Leadership* approach as presented throughout this book, to be used by school leaders who aim to better achieve their goals. Adopting these principles of action may help to increase school leaders' effectiveness in improving school results.

Hereby our book, which presented the *Holistic School Leadership* approach, comes to an end. This approach whereby educational leaders lead schools through the systems-thinking framework is relevant for school leaders in the 21st century. However, its effective implementation varies according to the set of circumstances that surround a particular event or situation. Thus, *Holistic School Leadership* should be tailored to the specific needs and requirements of each society, being attentive to local characteristics and capacities. Repeating the wish we expressed at the beginning of this book, we hope that this book will be used by principal educators, policy makers, and especially school leaders themselves to meaningfully improve contemporary educational leadership and thereby today's schools.

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