A Practical Guide to Leading Green Schools

This practical guide for educational leaders explores how you can transform your school or district into a vibrant center of learning and socio-ecological responsibility with only three manageable actions: taking students outside, bringing nature inside, and cultivating a mindset of awareness, responsibility, and empathy. This book is rich in practical, attainable approaches and stories of real actions taken by leaders, teachers, parents, and community partners to design, lead, and manage a vibrant, flourishing, sustainable learning community. Authors Uline and Kensler take you on an inspirational journey through nine key leadership strategies for you to begin or expand your work towards whole school sustainability.

Cynthia L. Uline is former Director of the National Center for the 21st Century Schoolhouse and Professor Emeritus of Educational Leadership at San Diego State University, USA.

Lisa A. W. Kensler is the Emily R. and Gerald S. Leischuck Endowed Professor of Educational Leadership at Auburn University, USA.

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A Practical Guide to Leading Green Schools

Partnering with Nature to Create Vibrant, Flourishing, Sustainable Schools

Cynthia L. Uline and
Lisa A. W. Kensler

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For our precious grandchildren, Finn, Alice, Emily, and Alexis, along with all their peers worldwide, who deserve vibrant, flourishing, sustainable schools today and a healthy planet for all their tomorrows.

Contents

Preface

This book serves as a practice-oriented companion to our recent book, *Leadership for Green Schools: Sustainability for Our Children, Our Communities, and Our Planet*, published by Routledge in 2017. This companion book focuses on three straightforward, manageable actions living systems-minded school leaders can implement to move their schools in the direction of whole school sustainability, including:

- **Taking students outside**,
- **Bringing nature inside**, and
- **CARE-ing**, by **C**ultivating and modeling **A**wareness, **R**esponsibility, and **E**mpathy.

Through deep investigation of the possibilities contained within these three actions, as revealed through one particular school district's story, the book demonstrates how pursuit of these actions can transform a school/school district into a vibrant center of learning and socio-ecological responsibility. The featured school district, Encinitas Union School District (EUSD), located in Encinitas, California, was winner of the Green Ribbon School Award from the U.S Department of Education in 2014. The book describes nine specific strategies undertaken by EUSD leaders, teachers, parents, and community partners to reduce their environmental impact and costs, while improving the health and wellness of schools, students, and staff and providing effective environmental and sustainability-focused education. Education for sustainability requires students to stretch for higher, more complex levels of subject matter thinking as they explore and take action on interdependent issues across ecology, society, economy, and

well-being domains. Education for sustainability requires teachers accomplish heightened levels of integration across content area and grade levels. Education for sustainability addresses the knowledge and skills necessary for college and careers, from the primary grades on. In this book, we demonstrate how teachers in EUSD, and in other green schools we have studied, engage in close examination of their practice in order to discern if they are challenging their students to high levels of engagement with rigorous, integrated, and context-embedded curricula.

Following an introductory chapter, the remaining nine chapters are divided into three sections, corresponding to the actions presented above. Each section contains three associated strategies, described in detail and illustrated through specific practice-based examples, from Encinitas School District and other Living Systems-Minded Trailblazers throughout the United States. Every chapter is filled with sustainability-related strategies leaders could implement immediately or with little preparation. By spotlighting one school district's story, a journey from SCRAP (a Separate, Compost, Reduce, And Protect cart introduced to students during lunchtime) to whole district sustainability, we provide a reference point, walking the reader through a process of discovering what such change might look like for their school or district.

Special book features include stories of actions taken by ***Living Systems-Minded Trailblazers*** from across the United States who, like the leaders, teachers, students, and community members in the Encinitas School District, are partnering with nature in numerous ways to design, lead, and manage vibrant, flourishing, sustainable learning communities. Each chapter also closes with a ***Leadership Design Challenge***(s). These practical and attainable actions provide school leaders opportunities to, in the words of Encinitas Union School District Superintendent Dr. Timothy Baird, "[not] overthink it, just start it."

The target audience for the book includes practicing and emerging educational leaders, school district administrators, teachers, staff members, students, parents, and community members, all viewed as educational leaders who come together to determine where the entry points for their transformation reside, based on their own school communities' unique needs and circumstances. The book addresses critical social, ecological, and educational challenges of our time. Examples of effective practices, introduced within the context of one school district's lived experience,

provide readers guidance for getting started and leading transformative change. The book is written specifically for practicing school leaders in a highly accessible format. Together, our two books demonstrate that leadership for green, sustainability-focused schools is not just an add-on practice, but, rather, the vehicle for 21st-century best practice.

Acknowledgments

Books develop from initial concept to completion with support from so many; many more than we will be able to directly name here. We are honored to have witnessed continued progress and expansion of the green schools movement over the past decade. So many of you in this movement, to bring sustainability related practices to PK–12 schools, have engaged us in conversation, inspired us to act, and supported our work. We acknowledge and appreciate each and every one of you. We hope this book offers you yet another tool for bringing more people, schools, and communities into the work of cultivating vibrant, flourishing, sustainable schools.

We wish to acknowledge our editor, Heather Jarrow, for her resolute belief in this work and her steady hand in shepherding its realization. Anisa Hemming, Director of the Center for Green Schools at the U.S. Green Building Council, sowed the seeds for this book years ago when she challenged us to inspire change by sharing a story that illustrates possibilities turned realities. We acknowledge Anisa's inspiration for this book and her, and her team's, practical support of our research over the past decade. As we imagined early versions of this book, we looked to our friend Jenny Seydel, Executive Director of the Green Schools National Network, for insight into which district leaders were truly leading innovation for sustainability in their school districts. We acknowledge Jenny's important role in introducing us to Dr. Timothy Baird, then Superintendent of Encinitas Union School District (EUSD).

With selection of an exemplary district, we then asked for a great deal of time from EUSD school and district leaders. Kristine Beverly, thank you for aiding our communication and scheduling efforts! We wish to acknowledge everyone's time, passion, and commitment to cultivating vibrant, flourishing, sustainable spaces within which students' love of learning

thrives. It was a joy and inspiration to spend so much time in their schools, listening to their stories, and observing their students in action. In particular, Timothy Baird, Andrée Grey, Amy Illingsworth, and Julie Burton, we so appreciate your energy, enthusiasm, and generosity; we could not have written this book without your full engagement and assistance.

We acknowledge and appreciate the support we receive from our friends and colleagues in our home institutions, San Diego State University and Auburn University. We continue to be inspired by individual and collective efforts towards developing future educators and educational leaders for a promising future. We also acknowledge our many friends and colleagues from the University Council for Educational Administration and the American Educational Research Association, who we connect with over conference presentations and conversations. Your scholarship stretches our thinking and ultimately makes our work better.

There are not enough words of gratitude to fully acknowledge our partners, Joe and Mike. They have contributed to this project in so very many tangible and intangible ways, from completing basic chores, to providing inspired moral support, to serving as conceptual sounding boards. Our hearts overflow with love and appreciation for these two.

We join in expressing our deep gratitude for everyone working on behalf of improving schools for children, communities, and planet Earth. In this book, we have highlighted just a few trailblazers beyond EUSD and acknowledge the many more who are leading the way towards healthy ecosystems, just societies, equitable economies, and individual well-being. May we all benefit from getting outside, bringing nature inside, and caring, cultivating awareness, responsibility, and empathy.

Meet the Authors

Lisa A. W. Kensler is the Emily R. and Gerald S. Leischuck Endowed Professor of Educational Leadership in the College of Education at Auburn University. Her original training in ecology continues to fuel her love of applying systems thinking to the challenges located at the intersection of human and nature's systems, particularly as they appear in PK–12 schooling. She has engaged in learning and teaching about systems thinking and sustainability for more than two decades. Lisa's research over the past decade has focused on green schools and the leadership and learning required for transforming schools into more socially just, ecologically healthy, and economically viable communities that engage intentionally with the global sustainability movement. She has published peer-reviewed articles and book chapters related to democratic community, systems thinking, trust, teacher leadership, and whole school sustainability. In 2017, she and Cynthia L. Uline co-authored *Leadership for Green Schools: Sustainability for Our Children, Our Communities, and Our Planet*. In 2018, the University Council for Educational Administration (UCEA) recognized Lisa as one of its Hidden Figures—"behind the scenes giants in the field whose work cannot be ignored."

Cynthia L. Uline is Professor Emeritus of Educational Leadership at San Diego State University and former Director of SDSU's *National Center for the 21st Century Schoolhouse*. Cynthia has also served as a classroom teacher, teacher leader, state education agency administrator, and educational consultant working with school districts, community groups, city governments, state agencies, and governors' offices, always seeking to facilitate meaningful partnerships on behalf of students and their families. For the past 25 years, Cynthia has studied the ways built learning environments

support students' learning, as well as the roles leaders, teachers, and community members play in creating learner-centered school facilities. Over the past decade, her research has explored green schools as healthy, vibrant, equitable, and environmentally responsible places for learning. She has published peer-reviewed journal articles and book chapters related to leadership for learning, leadership preparation, whole school sustainability, and the improvement of social and physical learning environments. In 2017, she and Lisa A. W. Kensler co-authored *Leadership for Green Schools: Sustainability for Our Children, Our Communities, and Our Planet* was published by Routledge/Taylor and Francis Group in 2017. She is also a co-author of *Leadership in America's Best Urban Schools* and *Teaching Practices from America's Best Urban Schools, 1st and 2nd Editions*.

Introduction

This is a book about transforming schools, as we know them. Across these pages, we present a leadership design challenge, revealed through the story of a public school district where leaders, teachers, students, parents, and community members partnered with nature in numerous ways to design, lead, and manage a vibrant, flourishing, sustainable learning community. Together, the members of this school community stepped beyond more traditional models of schooling to embrace an alternative aligned with, and reflective of, living systems. When we take time to observe and reflect, we can see how schools already exist as living systems. Each of us is a living system, and we all depend upon the natural systems in which we live. By extension, we are wise to design, manage, and lead our schools with this understanding.

This book has its roots in our previous book, *Leadership for Green Schools: Sustainability for Our Children, Our Communities, and Our Planet*, published by Routledge/Taylor and Francis Group in 2017. Our earlier book was grounded in our personal research into green schools across the United States, as well as a few beyond our borders. The book presented a research-based argument for green schools and for whole school sustainability (WSS), practiced in green schools across the world. We reviewed research across the disciplines of education, psychology, neuroscience, organizational studies, building sciences, ecology, and more. We also described the theoretical principles underlying whole school sustainability as a comprehensive strategy for school improvement, addressing every aspect of education from school culture and climate to curriculum and facilities. As a hands-on companion to *Leadership for Green Schools*, this book, entitled *A Practical Guide to Leading Green Schools: Partnering With Nature to Create Vibrant, Flourishing, Sustainable Schools*, presents a set of

key leadership strategies for getting started with the work of whole school sustainability. The target audience for the book includes practicing and emerging educational leaders, school district administrators, teachers, staff members, students, parents, and community members, all viewed as educational leaders who come together to determine where the entry points for their transformation reside, based on their own school communities' unique needs and circumstances.

Introducing Encinitas Union School District

Encinitas Union School District's story, a journey from SCRAP to whole district sustainability, serves as a reference point, walking the reader through a process of discovering what such a transformation might look like for their school and/or school district. This model of schooling, often called whole school or whole district sustainability, integrates sustainability into all aspects of a school organization (Barr, Cross, & Dunbar, 2014), presenting many opportunities for dramatically changing the way schools live, both within their walls and campuses *and* within the larger community and the wider world. From building maintenance to curriculum and instruction, whole school sustainability (WSS) applies living systems understandings to every aspect of school life.

Founded in 1883, the Encinitas Union School District (EUSD), located in north coastal San Diego County, enrolls approximately 5,400 students, housed in nine kindergarten-through-sixth-grade schools and one special education pre-school program. The District serves a diverse and varied community, with a student population that is approximately 68% White, 22% Hispanic, 4% Asian, and 6% other minorities.

All nine schools have been recognized as California Distinguished Schools by the California Department of Education and four have been named National Blue Ribbon Schools by the U.S. Department of Education.

In addition, EUSD was one of nine school districts in the country to receive the Green Ribbon School Award from the U.S Department of Education in April, 2014 for reducing environmental impact and costs, while improving the health and wellness of schools, students, and staff and providing effective environmental and sustainability education. Over the past six years, 64 additional districts have earned this distinction, for a total of 73 out of 13,584 school districts, or one half of 1% of school districts

nationwide (https://nces.ed.gov/programs/digest/d17/tables/dt17_214.10.asp). EUSD began their transformation with a simple recycling cart, introduced to students during lunchtime. With this cart, the leaders and teachers across this district sought to make a small difference in their community, reducing landfill waste, facilitating composting, and encouraging lunchtime recycling, at the same time teaching their students about their roles as stewards of the planet. According to one principal,

> Anyone could do a SCRAP cart (Separate, Compost, Reduce, And Protect) and that's where we started. We developed the SCRAP Cart to teach students how to properly sort their lunchtime waste for composting, recycling, and landfill. We began with a pilot, and determined how much trash was being picked up on average. From this baseline, we were able to collect and report data showing the resulting waste reduction. People were floored! We had realized over an eighty percent reduction in waste.

Close consideration of the actions taken by school leaders within the Encinitas Union School District (EUSD) provides opportunities to learn how whole school sustainability can better serve children's well-being and learning, as well as local and global environmental, social, and economic needs in the 21st century. Over the past 11 years, under the leadership of Superintendents Dr. Timothy Baird and Dr. Andrée Grey (who became superintendent following Dr. Baird's retirement in Fall 2019 after serving as Assistant Superintendent of Educational Services for EUSD since 2016), EUSD educators have learned to understand their school/school district as a living system, expanding their view to include the ecological systems upon which their school community depends for clean air, water, food, etc.

Within this living systems context, students thrive. In 2019, overall student performance within the Encinitas School District exceeded state averages by significant margins in both language arts and mathematics. Performance in language arts on the California Assessment of Student Performance and Progress (CAASPP), for students in grades 3–6, stood at 74.79% proficient, exceeding the statewide average of 51.10%. In mathematics, students in grades 3–6 scored 70.67% proficient, as compared with 39.73% statewide. School and district leaders celebrate these successes; at the same time, they are also quick to acknowledge gaps in achievement for three specific subgroups of students, including English learners, low-income students, and students with disabilities. Although the

academic performance of students in these subgroups exceeded the statewide averages, school and district leaders took explicit steps to address these learning challenges, including the creation of English Language Development (ELD) Task Force, the addition of an ELD teacher on Special Assignment, increased teacher professional development opportunities targeting the needs of these student groups, and additional structures and processes to increase cross collaboration between general education and special education. Leaders across the district demonstrate their deep commitment to improving the learning and life outcomes of all their students. This commitment drives them to embrace an expansive, whole systems approach to their work. For example, some schools in the district experience persistent levels of transience and absenteeism among their newcomer immigrant students. A principal in the district described the situation and the school's response.

> This year we've had a really large influx of students from Guatemala, with a good number having very limited schooling. The transiency often results from one of the parents being deported. Then there's the question if the other parent will try to stay and make it work. Often, they'll end up moving back, because it's too expensive and hard with just one parent. Parents weren't bringing their kids to school, because they were afraid to go out. We are trying to connect our families with resources and information. We've brought in different foundations and support groups, as well as attorneys that work with immigration.

Each day, principals in EUSD address the same fundamental concerns faced by other school leaders across the country, vital concerns related to instructional effectiveness, equitable access to rigorous and relevant curriculum, the establishment of inclusive and engaging learning cultures, and the achievement of excellent learning results for all students. And they do so in ways that are revolutionizing student experience, student well-being, and the well-being of our planet. In Encinitas schools, learning tends to be integrated with nature, problem-/project-centered, appropriately individualized, and grounded in local places. Defining exactly what this looks like in practice is a deeply local affair.

Soon after becoming superintendent in 2009, former superintendent Dr. Timothy Baird formed a district Green Team comprised of interested parents, staff, and community members. Since that time, the Green Team

and EUSD's environmental consultants (www.bckprograms.com/) have worked together to reduce the district's carbon footprint through facility upgrades, behavioral changes, and sustainability-focused educational programs. In fact, during the 2009–2010 school year, the district's Board of Trustees identified Environmental Stewardship as one of four key Pillars of Distinction that guide all district goals, along with Academic Excellence, Comprehensive Health and Wellness, and 21st-Century Learning.

A number of related Green Initiatives, depicted in the tree model below (See Figure 0.1) were funded, in part, through a $44 million bond extension passed in November 2010. Proceeds from the bond moneys have supported the provision of 21st-century classrooms (including infrastructure upgrades and technology tools for students and teachers), installation of solar panels and solar tubes, water reclamation systems for irrigation, replacement of inefficient heating and air condition systems, and water-saving upgrades to restroom fixtures at each school campus. The tree model depicts these and other initiatives that will be revisited in more detail throughout the chapters of this book. Dr. Baird shared the district's rationale for placing these goals and initiatives at the center of their work.

> You find so many pathways into learning from environmental stewardship. We're doing the right work, not just for our school district, but also for the world, and we're also finding amazing ways for kids to make real change and do real work. So, it is one of our four main pillars, central to the work that we do as a district.

Dr. Baird described the genesis of the district Green Initiative Model as a means to capture all aspects of whole school and district sustainability as currently practiced within the Encinitas Union School District.

> Before I arrived, they had amazing school gardens scattered around the district. In my first year, the Green Team came together and we started on garbage, but after we did garbage, we moved to lots of other things. We started to really look at air quality and energy. So, I said, "I need a graphic that pulls all our efforts together." [We] worked to put all these in a graphic that made sense [and depicted] all the things we're working on.

Of course, living systems models of schooling, like nature, are never static. EUSD leaders, teachers, students, parents, and community partners

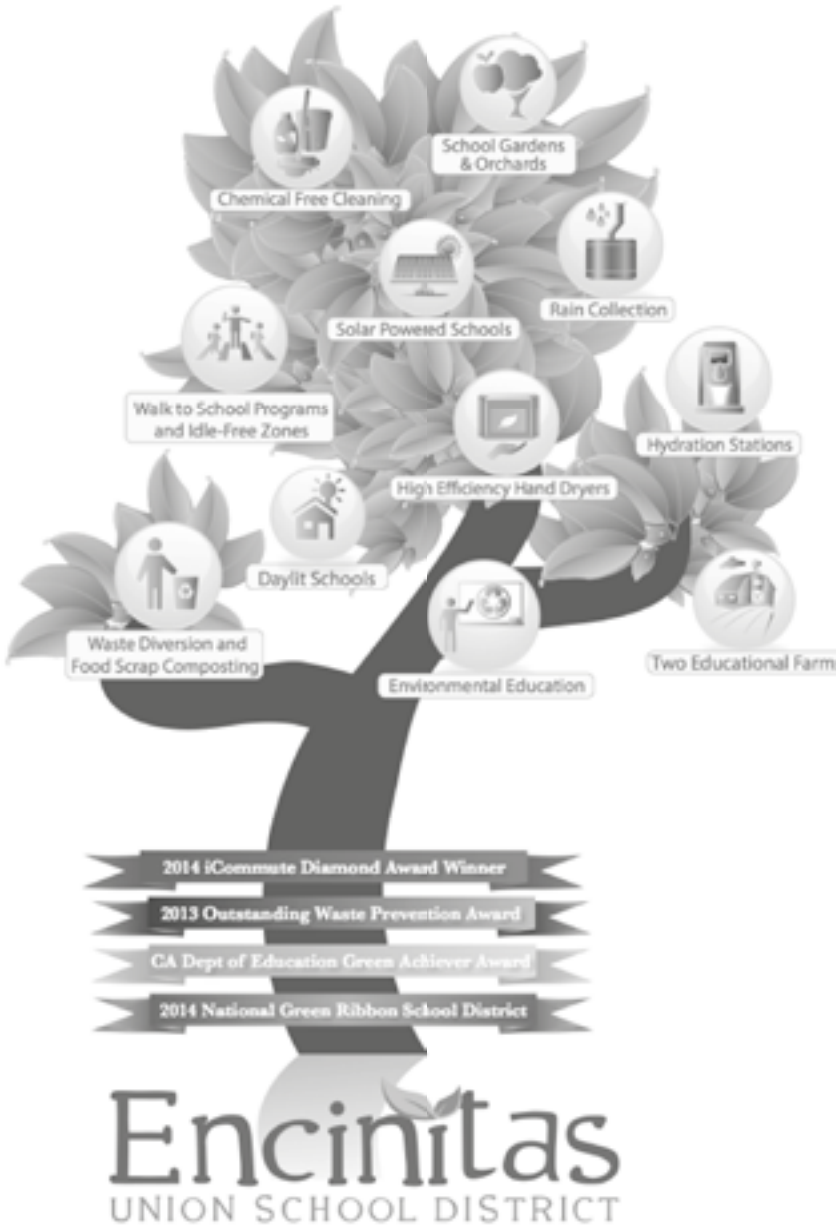

Figure 0.1 Encinitas Union School District Green Initiatives (District Website http://www.eusd.net/green-initiatives/).

Chemical-Free Cleaning
The school district has invested in a chemical-free cleaning system that uses regular tap water and zaps it with an electrical charge to create liquid ozone, a powerful cleaning agent that kills germs as effectively as bleach and other chemical disinfectants without any of the harmful side effects. This green cleaning system eliminates the need for toxic cleaners, saves money and reduces waste.

Daylit Schools
Each school campus at EUSD now has daylighting devices (Solatubes) installed to allow natural light into the classrooms through protected tubes in the ceiling. So much light is allowed in using this method that there is often no need to turn on the electric lights. Research shows that use of these devices, called daylighting, increases students' overall test scores, improves moods and increases mental alertness. Daylighting also saves the school district money by reducing the energy demand of traditional lighting.

Educational Farms
In addition to the many garden spaces at each EUSD school, the district is also home to the nation's first certified organic school farm. EUSD's Farm Lab DREAMS Campus is an innovative indoor and outdoor educational campus for all students in the Encinitas Union School District. Farm Lab is the first in the nation to become a school-district-owned, certified-organic crop production farm supplying its own school lunch program. Ocean Knoll utilizes its one acre farm space to fortify the school's International Baccalaureate curriculum. Paul Ecke has transformed most corners of green space on the campus into farming experiments and hosts a weekend farmer's market every Sunday.

Environmental Education
The EUSD staff and its innovative teachers work alongside their environmental consultants at BCK Programs to offer numerous environmental education opportunities to the students at each EUSD school. Learning experiences in environmental stewardship include water and energy conservation, waste diversion, litter prevention, composting, environmental advocacy and the nationally recognized SWPPP Internship Program.

Figure 0.1 (Continued)

High Efficiency Hand Dryers
EUSD has installed high efficiency hand dryers in all student bathrooms, drastically reducing our consumption of paper towels on site. Replacing paper towels with hand dryers saves money and decreases our environmental impact by saving custodial labor time used to empty bathroom bins and unclog toilets, reducing waste going to the landfill and reducing the price of each hand dry to 1/20th the cost of using paper towels.

Hydration Stations
All EUSD schools have installed Hydration Stations for filling and refilling water bottles with filtered water. These stations encourage the use of refillable water bottles instead of single-use plastic bottles. By filling up reusable water bottles at our school's hydration stations we are not only giving our body the most perfect form of refreshment, we are also helping to reduce landfill waste, ocean pollution, and our carbon footprint.

Rain Collection
We have installed rainwater collection barrels at all of our school sites in an effort to conserve water and decrease runoff pollution. The collected water is stored and used as needed for irrigation in non-rain periods or as an educational tool for our school community. Rainwater is a renewable, sustainable, high quality water source. In addition, collecting water during storm events reduces flow speed which, in turn, reduces runoff into the storm drain keeping the ocean cleaner.

School Gardens and Orchards
All nine EUSD schools maintain at least one garden and several have orchards. These powerful environmental education tools provide a hands-on opportunity for students to learn the valuable skill of growing food, as well as fostering key values of teamwork and patience. Additionally, students engaged in growing edible plants are more willing to taste foods, exposing them to choices.

Solar Powered Schools
EUSD completed installing solar panels at all nine elementary schools in the summer of 2016. The panels are expected to cut the district's energy consumption by nearly 80% and save over $20 million dollars in future energy costs. In addition to students learning about power generated from a clean burning, abundant and renewable energy source like the sun, students are also exposed to the science and engineering behind the photovoltaic panels and inverter.

Figure 0.1 (Continued)

Waste Diversion and Food Scrap Composting
In order to reduce landfill waste, facilitate composting, and encourage lunchtime recycling, EUSD developed the SCRAP Cart (Separate, Compost, Reduce And Protect). The SCRAP Cart is used to teach students how to properly sort their lunchtime waste for composting, recycling and landfill. Since the introduction of the carts in 2012, lunchtime waste has been reduced at each school by over 80% saving the school district over $40,000 every year.

As part of the district's lunchtime waste management program, every EUSD campus is outfitted with large composting worm bins. Students learn the science of decomposition, while they divert food from their school's waste stream and turn it into a valuable garden amendment. Composting works in tandem with the school gardens reducing or even eliminating the need for fertilizer and reducing watering needs.

Walk to School Programs and Idle-Free Zones
We encourage walking and biking to school in our communities as an alternative to driving. Physical activity in the morning is known to improve academic performance, creativity and focus and to reduce student stress. In addition, incorporating physical activity into a child's daily routine is a good place to start fighting skyrocketing childhood obesity rates.

We protect the air around our schools by creating Idle-Free Zones at all of our schools to protect students from toxic pollutants released by cars idling near schools at drop off and pick up. Car idling contributes to health issues, contributes to smog and climate change, uses more gasoline than restarting your car, harms your engine and exhaust system, and increases vehicle maintenance costs.

Figure 0.1 (Continued)

constantly refine and extend their various initiatives; at the same time, they continuously scan the horizon, remaining open to the possibility of new partnerships and projects.

Transforming Our Mental Models

Humanity currently faces a long list of profound challenges, including climate change, catastrophic weather events, devastating wildfires, biodiversity loss, population growth, an international pandemic, social inequities, and economic crises. Addressing these challenges requires we shift our worldview or mental models from one that sees humans as separate from

nature to one that sees humans as integral with, and dependent upon, the natural world. Sustainability calls for this intentional and intelligent integration of human and ecological systems. As a field of study and a focal point for action, sustainability emphasizes the degree to which human beings choose to live within the ecological carrying capacity of planet Earth, presently and into the future (Bettencourt & Kaur, 2011). Sustainability scientists ask urgent questions:

> How do we survive and thrive on planet Earth?
> How do we take care of our planet, each other, and the resources we depend upon for our survival?
> How do we live responsibly so that those who come after us can live?

In the simplest terms, "Sustainability means making the world work. For everyone" (AtKisson, 2017, loc 121, Kindle).

To embrace the notion of schools as living systems, comprised of living beings who are deeply interdependent and embedded in local and global socio-ecological systems, educators must learn new habits of thought and practice (Kensler & Uline, 2017). The challenge, as we see it, is that mechanical systems and metaphors have influenced the design and management of our schools for more than a century (Senge, Cambron-McCabe, Lucas, Smith, & Dutton, 2012). For most of us, it's all we've ever known. Factory-like facilities, rigid schedules, bell notifications, defined grades, ability grouping, and unnecessary curricular narrowing in response to learning standards (for detailed discussion of alternatives to this unnecessary narrowing of curriculum, see Johnson, Uline, & Perez, 2019) remain pervasive across schools today, even as educators acknowledge the need for a fundamental redesign of the system in order to provide students 21st-century learning experiences.

The traditional factory model of education disassociated children and their learning from nature, each other, and their communities. Silos, metaphorically tall with very thick walls, still exist throughout school districts today. In too many schools, content exists in silos; teachers operate in silos; students learn in silos. Popular strategies associated with professional learning communities (PLCs) aim to deconstruct these silos, deprivatize education, and fuel learning (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006). And yet, too often, these initiatives are implemented in name only, absent the necessary formal and frequent collaborative opportunities designed as

a normal part of teachers' work days (Tichnor-Wagner, Harrison, & Cohen-Vogel, 2016).

Nature is characterized by interdependence and interconnectedness, not separation and isolation. Industrialized models of education tend to sever any real connection to nature and the outdoors by moving learning into rows of desks organized within four walls, sometimes even preventing outdoor distractions with windows covered or nonexistent. Understanding our schools as living systems results in two primary benefits (Kensler & Uline, 2017).

- First, we understand students, not as products of a 12-year assembly line, but as individual beings for whom the love of learning is an innate capacity. With this perspective, we stop demanding that learners perform as we direct. We stop blaming our students for disengaging. Rather, we realize that children and adults are voracious learners by nature and we design, manage, and lead for the conditions that allow this love of learning to flourish.
- Second, because our human communities are dependent on socio-ecological systems for life support, we accept responsibility for our actions. We realize that our daily actions contribute either to harming or enhancing the Earth's social communities and ecological systems and we consciously seek to minimize negative and maximize positive socio-ecological impacts.

School leaders have a critical role to play in developing more sustainable school practices, engaging students in the big questions and preparing them to discover and enact answers and solutions. As stated earlier, whole school sustainability, as a whole systems approach to K–12 education, integrates sustainability into all aspects of a school organization (Barr et al., 2014).

The actual number of schools who practice whole school sustainability remains a very small percentage of schools overall, comprising far less than 1% of K–12 schools. And yet, their trailblazing leaders are discovering all the ways whole school sustainability provides a high leverage strategy for addressing many 21st-century challenges, from student engagement and performance to climate change and community resilience.

The very goals of sustainability can "redefine the role of schools and their relationship with the community . . . [rendering] schools as a

focal point where children, adults, and the community interact and learn together" (Henderson & Tilbury, 2004, p. 8). According to recent counts, communities across the globe benefit from 2,459 certified and 2,218 registered LEED (Leadership in Energy and Environmental Design) PK–12 school projects (US Green Building Council, 2020). Sustainability-related efforts are also reflected in the 4,300 National Wildlife Federation (NWF) Eco-Schools across the United States, serving 2.5 million students and over 116,000 educators, a growing cadre of Green School Alliance members (www.greenschoolsalliance.org/), and 595 U.S. Department of Education Green Ribbon School awardees, since 2012 (www2.ed.gov/programs/green-ribbon-schools/awards.html).

A recent study of living systems-minded school leaders found that 99% of respondents reported improvements in student engagement and 77% reported improvements in community engagement following their greening efforts (Sterrett, Imig, & Moore, 2014). These positive learning results, as well as dollar savings and environmental benefits, are increasingly attracting attention (Kensler & Uline, 2017). Schools, like the schools that comprise the Encinitas Union School District, become deeply rooted in their own place on the globe, ecologically and socially. They grow out of their unique context through the collective efforts of students, teachers, administrators, staff, parents, and community members. These sustainability-focused learning communities begin with a clear sense of purpose, growing deep and broad enough to inspire the long-term investment and commitment necessary to support such a fundamental shift in thinking and practice.

Keeping It Manageable

As readers consider this introduction, they may be moved to close this book, thinking, "Our school and district are so far from sustainable, I don't even know where to begin." Living systems-minded leadership does not take additional time; it simply requires recognizing and seizing opportunities for doing the work of school differently (Kensler & Uline, 2017; Uline & Kensler, 2019; Kensler & Uline, 2019). Dr. Baird offers practical advice to interested educational leaders:

> My answer now, when districts are asking about creating infrastructure [for whole systems approaches], is, 'Don't overthink it, just start it.' I started by

talking to different people at schools and saw that this was a passionate area for many people. It was a community value that was underdeveloped or under-realized.

In the spirit of Dr. Baird's advice, this book focuses on three straightforward actions school leaders can begin to implement today. Aspiring and developing living systems-minded leaders can start in three manageable ways to move in the direction of whole school sustainability. They can begin to

- **Bring nature inside,**
- **Take students outside**, and
- **CARE**, by **C**ultivating and modeling **A**wareness, **R**esponsibility, and **E**mpathy.

In accordance with this Living Systems-Minded Leadership Model (Figure 0.2), our book is divided into three sections, corresponding to the actions presented above. Each section contains three associated strategies, described in detail and illustrated through specific practice-based

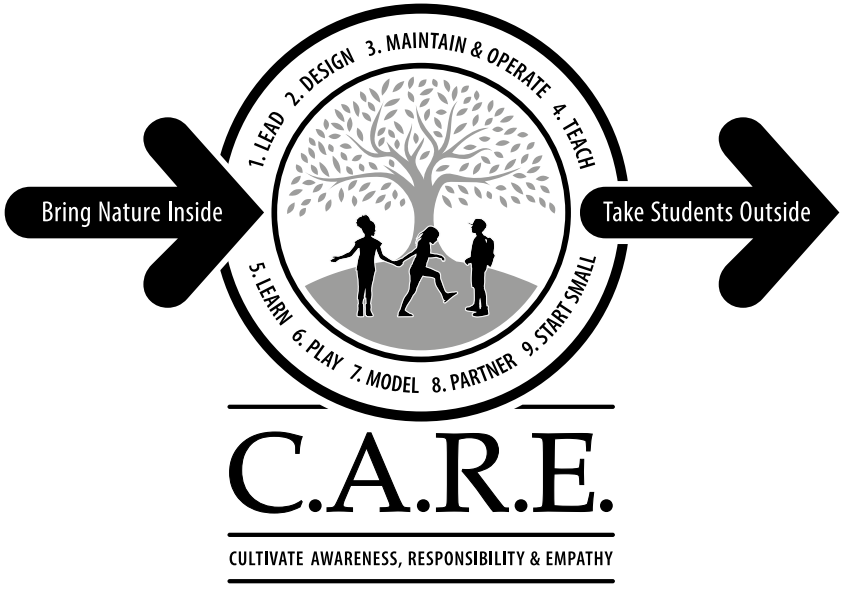

Figure 0.2 Living Systems-Minded Leadership Model.

examples, from Encinitas School District and other Living Systems-Minded Trailblazers throughout the United States.

Action 1: Bring Nature Inside

Nature, as we are using it here, is broadly defined as all the biological and physical elements of the world that are not human or created by humans. Humans experience nature either by spending time outside the built environment or by bringing nature into the built environment. Nature is increasingly incorporated into the built environment through expansive windows that flood the interiors with natural light and views of nature; and through including living plants, fish tanks, water fountains, etc. into working and learning spaces (Gillis & Gatersleben, 2015; Kellert, Heerwagen, & Mador, 2008). As we work to green existing school facilities and apply green principles to the design and construction of new schools, we articulate and advance sustainability goals and purposes. Likewise, when we utilize these sustainable schools as teaching tools, we extend our capacity to model socio-ecologically aware norms and practices (Taylor, 2009). Beyond conserving energy, decreasing stress on natural resources, preserving surrounding habitats, and reducing waste, we improve the ecological literacy of our students, teachers, administrators, and community members.

Strategy 1 LEAD: IMPLEMENTING NATURE-INSPIRED LEADERSHIP

Living systems-minded school leaders infuse their leadership with nature. They align their mental models, language, and behaviors with images of the natural world, rather than with industrial models of education. In fact, they intentionally identify and uproot persistent industrialized ways of thinking, speaking, and being, likely seeded early in their own educational experiences. Through their personal approaches to leadership, they expand their attention to school-wide programs and initiatives, aligning these efforts with principles of living systems.

Strategy 2 DESIGN: CHOOSING SUSTAINABLE BUILDING DESIGN ELEMENTS

Living systems-minded school leaders educate themselves about the possibilities for leveraging the physical learning environment

on behalf of learning and teaching. Where resources become available for designing and constructing new facilities, leaders build a case for providing high-quality, sustainable school facilities. In situations where living systems-minded school leaders contend with older, existing facilities, they advocate for sustainability-focused renovations and retrofits when these become available to them. In all contexts, living-systems minded leaders assess their learning ecologies, taking particular and careful note of their buildings as critical both to occupant well-being and local and global environmental health.

Strategy 3 MAINTAIN & OPERATE: OPERATING AND MAINTAINING HEALTHY, SAFE, SUSTAINABLE LEARNING ENVIRONMENTS

Living systems-minded leaders, together with their facilities colleagues, manage healthy, safe, and sustainable learning environments in ways that reduce energy, conserve natural resources, and minimize waste. To the greatest degree possible, they implement green operation and maintenance routines, and seek out opportunities for leveraging the facility as a three-dimensional textbook.

Action 2: Take Students Outside

Strategies for reconnecting students with nature might begin simply with opening the doors to the outside and reintroducing recess. Emerging research suggests improved student behavior, learning focus, and academic performance follow daily recess, unstructured play in the outdoors (Bauml, Patton, & Rhea, 2020). Beyond recess, academic learning can also occur productively while deeply embedded in the outdoors. Students learn basic content, in addition to gaining deep insight into how the world works as an integrated, interdependent whole. Numerous recent reviews of research demonstrate that contact with nature is associated with overall health and well-being, including specific aspects of emotional, physical, social, and cognitive well-being (Hartig, Mitchell, de Vries, & Frumkin, 2014; Kuo, 2015; Louv, 2008; Russell et al., 2013). The evidence is substantial—children benefit from contact with nature.

Strategy 4 TEACH: PREPARING TEACHERS TO TEACH IN NATURE

Living systems-minded school leaders provide ongoing, job-embedded opportunities for teachers to learn the requisite knowledge and skills for facilitating student learning in nature. They challenge teachers to move outside their classroom comfort zone and provide the necessary resources and supports to ensure teachers' success in doing so.

Strategy 5 LEARN: INVITING STUDENTS AND TEACHERS TO LEARN IN NATURE

Living systems-minded school leaders intentionally disrupt the traditional architecture of instruction. They open doors and invite learning to deliberately spill out beyond school walls. Living systems-minded school leaders create space and time for teachers, parents, and community members to experience the ways nature is associated with overall health and well-being, including specific aspects of emotional, physical, social, and cognitive well-being, all of which are foundational to students' engagement in learning. The stark realities of the COVID-19 pandemic have underscored the benefits of learning outside in nature. In late summer 2020, as local districts developed their plans to reopen schools, Dr. Anthony Fauci (head the National Institute of Allergy and Infectious Diseases) recommended "Get[ting] as much outdoors as you can" (https://abcnews.go.com/Health/wireStory/fauci-schools-outdoors-72359724). Further, time in nature also presents valuable opportunities for students to learn complex concepts and develop important academic skills (Camassoa & Jagannathan, 2018).

Strategy 6 PLAY: RESTORING NATURE PLAY INTO THE SCHOOL DAY

Living systems-minded school leaders value play as a pathway for learning. They prioritize recess and encourage teachers to take their students outside for unstructured learning time. They ensure play spaces include a rich variety of features, inviting exploration, challenge, creativity, and restoration. Living systems-minded school leaders cultivate a school culture that honors individual needs and empowers teachers and students to make appropriate choices for their own and collective well-being. They know outdoor, unstructured play provides opportunities for learning critical motor skills and social skills while also restoring attention and energy for learning.

Action 3: Care

In their own particular place on Earth, living systems-oriented school leaders hold themselves to account as their schools' lead learners. They take time to clarify their own sense of purpose as educators and challenge themselves to investigate the implications of current societal and environmental challenges for their work as 21st-century school leaders. This reflection prompts them to consider their role as civic leaders across the social, economic, *and* ecological systems within which their schools are nested. The potential scope of their responsibilities can seem overwhelming, and so, they engage others in crafting a laser-focused vision for their work, a vision grounded in intimate knowledge of, and ***CARE*** for, the place their students call home. In this way, they are able to **C**ultivate and model **A**wareness, **R**esponsibility, and **E**mpathy. When people are able to connect their daily work to meaningful, purposeful aims, motivation soars. They feel passionate about their contribution to their vision for a healthy, flourishing community.

Strategy 7 MODEL: CULTIVATING AND MODELING AWARENESS, RESPONSIBILITY, AND EMPATHY

Living systems-minded school leaders gain intimate knowledge of, and model, ***CARE*** for the place their students call home. They cultivate and model awareness, responsibility, and empathy throughout their entire school community. Living systems-minded school leaders ***cultivate*** the learning capacity of their members, including teachers, students, parents, and the community at large. They lead all members in developing a deep ***awareness*** of, and sense of ***responsibility*** for, their unique social and ecological context. They develop ***empathy*** for communities upstream and downstream and for other human and nonhuman inhabitants across the planet.

Strategy 8 PARTNER: BUILDING CARING PARTNERSHIPS

Living systems-minded school leaders cultivate caring partnerships that have potential to revitalize their communities. Embracing whole school sustainability, as means to maximize student learning, also encourages a sense of responsibility for the well-being of the community-at-large and the natural world upon which it depends. As school leaders pursue

the mutually reinforcing aims of maximizing learning and developing community, they discover powerful partners in reimagining day-to-day school life and in securing future life on Earth.

Strategy 9 START SMALL: STARTING SMALL AND STAYING ANCHORED IN A VISION OF VIBRANT, FLOURISHING, SUSTAINABLE SCHOOLS

Living systems-minded school leaders facilitate the development of shared visions for sustainability. These visions are expansive, transformative, and motivating. Through articulation and implementation of such visions, living systems-mined leaders reveal, direct, and strengthen the interdependent connections between each action they and members take to realize their vision of vibrant, flourishing, sustainable schools.

At the conclusion of each strategy, we present readers with an associated ***Leadership Design Challenge*** as inspiration to begin, or expand, their own green school efforts. These practical and attainable projects provide school leaders opportunities to, in the words of Encinitas Union School District former Superintendent Dr. Timothy Baird, "[not] overthink it, just start it." In addition, readers will have opportunity to learn about actions taken by ***Living Systems-Minded Trailblazers*** from across the United States who, like the leaders, teachers, students, and community members in the Encinitas School District, are partnering with nature in numerous ways to design, lead, and manage vibrant, flourishing, sustainable learning communities.

Conclusion

Through deep investigation of the possibilities contained within three straightforward actions, as revealed through one particular school district's story in one place on planet Earth, as well as through the stories of other Living Systems-Minded Trailblazers, we hope to help school leaders see how pursuing these actions can transform their schools and school districts into vibrant centers of learning and socio-ecological responsibility. We think readers will see that these mutually reinforcing aims provide powerful leverage for school improvement, as well as for improvement of life on Earth.

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