Leading *for* Learning

How to Transform Schools into Learning Organizations

PHILLIP C. SCHLECHTY

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PREFACE

This book is about differences between and among schools—differences that make a difference in the lives of teachers, students, parents, and communities. It is not about *why* schools do not get results. It is about why schools get the results they do.

My intent is to help teachers and other school leaders better understand why their jobs are so hard—and what it will take to make their work more manageable and satisfying. It is also my intention to help local community leaders, especially school board members and state legislators, to better understand what is happening to their schools and why.

GUIDING QUESTIONS

Three questions have guided my thinking in writing this book:

- Is it possible to pursue high standards and attach consequences to performance without resorting to the tools of bureaucracy?

- Is it possible to organize schools so that they reflect concern for the unique circumstance of each child—without giving up the notion that all children should learn some of the same things at high levels?

- Can local school districts develop the capacity to sustain improvement efforts in response to national priorities as well as to local circumstances—without the active intervention of state and federal agencies?

I think that it is possible to answer these questions affirmatively, but only when we shift our images of schools from those that grow out of bureaucratic assumptions to those that grow out of assumptions that schools can become learning organizations. Once this shift is made, the principles on which schools are built will necessarily be quite different from those on which most schools and school districts are now based.

The primary purpose of this book is to make the nature of these principles very clear and to show how they might be applied to create the new system of education America needs. For example, I argue that rather than viewing standards as a means of enforcing bureaucratic authority, standards might better be used as a source of direction for school and communities. This would mean that rather than assigning the authority to establish and enforce standards to state agencies, legislators might require that local communities establish clear standards that their leaders can defend in the public forum and then develop processes to assess the effectiveness of their schools in meeting these standards. The role of the state would be to specify standards for setting standards rather than specifying the standards themselves. Similarly, I argue that local school boards should become much more active as educators of the community about educational matters and much less oriented toward advancing the causes of special interest groups. This will undoubtedly require new thinking regarding the way school boards are elected and held accountable. Much of this book has to do with strategies for bringing such transformations about.

ASSUMPTIONS

As the reader will quickly recognize, what I write is informed by a bias. I am on the side of teachers, principals, and superintendents who must deal every day with the realities of an education system that encourages mindlessness and the docile acceptance of bureaucratically oriented policy decisions that are too often harmful to the cause of good education for children. I proceed from the belief that if the public schools are to work as they must work in the twenty-first century, they must be supported by all citizens—young and old, rich and poor, liberal and conservative. Moreover, they must serve all citizens, not just the students and parents who, at any given time, are involved in the schools or the interest groups and political factions that want to bend the schools to their will. Schools are about the future and posterity more than they are about the present and prosperity.

It is certainly true that in their present bureaucratic form, many schools are not sufficiently responsive to parents and the diverse needs of students. Indeed, it is the failure of locally controlled bureaucracies to respond to the needs of all the children of all the citizens that has led to moving bureaucratic control from local board offices to even more bureaucratic offices in state capitols and in Washington, D.C.

Those who advocate more state and federal control of schools seem oblivious to the fact that such a reform does not solve the problem of America's schools. Rather, it moves the means of solving the problem further from the reach of precisely the people who must solve it if it is to be solved at all: the local educational leaders and the citizens of the local communities the schools are intended to serve.

It is also my view that the link between the quality of schools and the quality of community life is so deep and profound that it makes no sense to work to improve the schools outside the context of improving communities as well. It is not possible to have strong schools in unhealthy communities. School improvement and community building go hand in hand. It is therefore a grave mistake to turn schools into government agencies and to remove control of the schools from local communities, especially at a time when one of the greatest crises facing the nation is the breakdown of communities and the loss of sources of community identity and feelings of belonging on which communities depend.

Education in America will not be helped by making the schools more bureaucratic and by driving in fear. What we need are policies that put joy back into teaching and common sense back into the way schools are led. This book is an effort to assist in such a transformation.

My hope is that this book will provide local educational and civic leaders with ideas and tools that will help them build initiatives to save our schools from the creeping paralysis that is now being foisted on them by those who believe that government experts know better what the people want and need than do the people themselves. My faith in public education is a traditional American faith, based on the Jeffersonian belief that the people, if they are well informed, are the best judges of what they need. I also believe that in the long run, citizens will trust only leaders who trust them in return.

Learning organizations, as we shall see, are based on such trust. Bureaucracies are not. Bureaucracies are based on fear and distrust, and they depend on punishments and extrinsic rewards to gain what leaders want and intend.

THE CONTEXT OF TEACHING AND SCHOOL LEADERSHIP

Not all schools perform well, and some teachers are ineffective. It is also the case that these schools and these teachers are more likely to serve poor children, especially poor minority children, than affluent children.

In my view, low-performing schools function something like canaries did in coal mines. Because the students they serve are more often poor and from places where strong community support is lacking, these schools are the first to reveal the presence of harmful elements in the environment. These elements are, however, likely to be present in other schools as well, though those affected may not be aware of it because the teachers and students have enough external support to survive in spite of what might be happening to them inside the school.

Certainly I believe that highly qualified teachers and good principal leadership are necessary for good schools. It is my view, however, that in the long run, high-performing teachers are either suppressed by bad schools or they flee from them—to other schools or out of education altogether. In fact, one of the reasons poorly performing schools often seem to have a disproportionate number of poorly performing teachers may be that teaching well in these schools is just too hard and too often there are no supports for those who really try. Introducing good teachers into bad schools without working on the schools and the systems in which the schools are embedded seems to me to be a wasted effort and generates cynicism regarding the prospects of improving schools. It also discourages too many gifted teachers.

Certainly I am concerned about low-performing schools, but my attention is not fastened on them. Rather, my quest is for excellence in all schools and for all children. Indeed, I learned long ago that the words *excellence* and *equity* should never be separated, for to honor one without attending to the other is to do harm to both.

A MATTER OF STYLE

This book is the product of a lifetime working in and around schools and learning from educators; it is not my doctoral dissertation. Where I know I have a heavy intellectual debt, I use footnotes to honor that debt, and where I quote specific content from other works I use footnotes as well. I do not, however, try to document every point I make, and I don't cite every possible contrary opinion. Let the contrarians write their own book.

THE AUDIENCE FOR THIS BOOK

This book is written for the men and women who live out their lives in schools and school districts and for the local community leaders, including school board members, whose support for schools is essential for the survival of schools as well as the health of the communities in which they live. I hope that members of the scholarly community will read it and enjoy what they read, but it is not my intention to add to the research related to schooling. Rather, it is my purpose to take what research, theory, and a good deal of practice have taught me about schooling and efforts to improve schools and make what I have learned available to others.

THE ORGANIZATION OF THIS BOOK

This book is organized into three major parts.

The five chapters in Part One make the case for transformation as contrasted with reform and present some of the basic concepts and frameworks essential to understanding the distinctions made between bureaucracies and learning organizations. For those unfamiliar with the literature in sociology and organizational theory, I provide a broad introduction to some of the concepts and issues that I believe are most useful when trying to figure out what is going on in schools and why.

In Chapter One, I make a distinction between reformation and transformation and present an argument for transformation. Chapter Two discusses systems and systemic change. In this chapter, I examine how critical social systems affect the way innovations are introduced in schools and how these systems affect the prospects of survival of innovations once they are introduced. In Chapter Three I make some fundamental distinctions between bureaucracies and learning organizations. Chapter Four presents a series of metaphors intended to help illuminate the nature of bureaucratic practice in schools. Chapter Five presents an alternative set of metaphors to help describe the operation of a school or school system organized as a learning organization.

By the time readers have finished reading these first five chapters, they should have a clear notion of how I distinguish between schools as learning organizations and schools as bureaucracies. It should also be clear how these different conceptions of schooling shape and mold the way those who live out their lives in school view themselves and their work and why so much that happens in school that seems so mindless in fact has a logic; but the logic is a sociologic

embedded in the structure of organizational life rather than in the structure of personalities.

Part Two contains three chapters, each addressing a different topic, that should be of concern to those who would lead school transformation. Chapter Six explores the rising power of an emerging education policy elite and the drive toward the bureaucratization of schools. Chapter Seven examines the impact of the standards-based school reform movement on the increasing bureaucratization of the schools and moves toward distinguishing between forms of accountability that are intended to lead to improvement of performance and forms that are intended primarily as a means of exercising external control. Chapter Eight presents a discussion of the ideas of civic capacity and social capital. My intent is to make the case that meaningful efforts to improve schools require attention to community building and political action at the same time that they require attention to the internal operation of schools.

The four chapters in Part Three address a set of topics that must be addressed in an action agenda. Chapter Nine deals with the idea of mental models and the use of metaphors in inspiring transformation initiatives. Chapter Ten examines the idea of capacity building. In this chapter, I set forth specific suggestions of ways to go about building capacity, especially the capacity to support and sustain the introduction of innovations that in the context of bureaucracies are likely to be rejected or domesticated. (*Domestication* is a term I use to refer to the tendency of bureaucracies to alter an innovation to fit the existing system rather than changing the system to accommodate the innovation.) Chapter Eleven presents a discussion of standards as sources of direction and suggests some strategies for using standards to ensure quality without allowing the standards to inhibit creativity and imagination in schools and classrooms. Chapter Twelve presents a theory of action that in effect summarizes much that precedes it, especially much that is contained in Chapters Nine through Twelve.

In the final chapter, I give additional attention to issues related to leadership and community building, and relate these issues to the notion of marketing ideas and persuading publics.

The book also has two appendixes. Both are in fact an integral part of this book and should be read along with Chapters Three through Five. Appendix A presents a detailed description of the differences between and among critical social systems in a bureaucracy and in a learning organization that are outlined in Chapter Three. Many of the school leaders who have read this appendix—and

there have now been literally hundreds of such readers—have found it to be extremely useful, especially as a tool for serious discussions about the condition of their schools and what action steps they need to take to move toward the transformation into a learning organization.

Appendix B presents a thumbnail sketch of each of the role descriptions presented in Chapters Four and Five. These sketches have proven most useful to educators who use the charts presented in Chapter Four as a tool to help them assess the culture of their school, especially as that culture is reflected in the rules and roles that typify social relationships in the schoolhouse and between the schoolhouse and the school district.

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I would also like to thank Susan Geraghty who served as production editor. She kept everything on time and on track, and was flexible enough to make it possible to deal with life's emergencies. In addition Bev Miller, the copyeditor for Jossey-Bass, did a masterful job and I thank her as well. Finally, I give a special thanks to Lesley Iura, educational director of K–12 Education for Jossey-Bass. This is the fifth book she has helped me bring to completion. I continue to be impressed with her patience, good humor, and skill. She is also a special friend.

A PERSONAL NOTE

I dedicate this book to my two grandchildren, Lilly Flannigan and Daniel Rademaker, who serve as living inspirations for me to keep on working to improve America's schools. They are in the first grade, early in the great school adventure. I hope the schools get better each year they attend. I hope even more that the schools do not deteriorate because of misguided efforts to improve them. I want my grandchildren and all other children to find meaning in school and to experience the joy of learning and disciplined inquiry. I do not want them to come away from school feeling as Albert Einstein said he felt when he looked back on his experiences in German schools:

> One had to cram all this stuff into one's mind, whether one liked it or not. This coercion had such a deterring effect that, after I had passed the final examination, I found the consideration of any scientific problems distasteful to me for an entire year. . . . It is in fact nothing short of a miracle that the modern methods of instruction have not yet entirely strangled the holy curiosity of inquiry; for this delicate little plant, aside from stimulation, stands mainly in need of freedom; without this it goes to wrack and ruin without fail. It is a very grave mistake to think that the enjoyment of seeing and searching can be promoted by means of coercion and a sense of duty.

Much of the bureaucratic form of America's schools was imported from Germany in the nineteenth century. It is this basic structure that must be changed.

I believe that the future of America depends on the ability of the current generation of American educators to find new ways of linking the cause of public education to the building of democratic communities where they live. Education and America have been good to me and my family. My hope is that what I have written will give back to the community a small down payment on what I have received.

February 2009   Phillip C. Schlechty
                                                                          Louisville, Kentucky

Phillip Schlechty is the founder and chief executive officer of the Schlechty Center for Leadership in School Reform. He has been a teacher and public school administrator, as well as a university professor and associate dean. He established the Center for Leadership in School Reform in 1988; through this organization, he has developed a staff of experienced educators who are committed to transforming schools from bureaucracies into learning organizations. Schlechty and the center staff work with thousands of teachers, principals, central office staff, superintendents, and school boards, as well as with parents, civic leaders, business leaders, and others interested in the continuing health of public education in America. The center works with school districts across the United States.

Over the past forty years, Schlechty has written seven books and many journal articles dealing with issues related to the transformation of schools and school leadership. He has received awards from such diverse organizations as the American Federation of Teachers, the American Educational Research Association, and the National Staff Development Council. Most recently, his alma mater, The Ohio State University, honored him by inducting him into the School of Education and Human Ecology Faculty and Alumni Hall of Fame.

Schlechty and his wife, Shelia, live in Louisville, Kentucky. They have two daughters and two grandchildren. His grandchildren attend public schools in Kentucky and Colorado.

Leading for Learning

Making the Case for Transformation

The Case for Transformation

There is general agreement that the schools of America must be improved. There is, however less agreement about what needs to be done to improve them. Most who say schools need to be improved want to reform them in some way. The position taken in this book, however, is that reform is not enough. What is needed is transformation.

In the context of recent efforts to improve schools, *reform* usually means changing procedures, processes, and technologies with the intent of improving the performance of existing operating systems. The aim is to make existing systems more effective at doing what they have always been intended to do.

Transformation is intended to make it possible to do things that have never been done by the organization undergoing the transformation. It involves metamorphosis: changing from one form to another form entirely. In organizational terms, transformation almost always involves repositioning and reorienting action by putting the organization into a new business or adopting a radically different means of doing the work it has traditionally done. Transformation by necessity includes altering the beliefs, values, and meanings—the culture—in which programs are embedded, as well as changing the current system of rules, roles, and relationships—social structure—so that the innovations needed will be supported. Reform, in contrast, means only installing innovations that will work within the context of the existing structure and culture of schools.

Transformation is a difficult and risky enterprise, its dimensions uncertain and difficult to define. It requires men and women to do things they have never done before—not just to get better at what they have always done.

Because it is so risky, transformation requires strong leaders who understand that they are dealing with values as well as technique, meaning as well as skills. Most of all, transformation requires leaders who have a deep understanding of both the reasons transformation is necessary and why an easier course cannot be taken. It requires leaders who are themselves passionately committed to the new organization they are trying to create.

Without such leaders, it will not be possible to mobilize the energy required to make the changes that must be made to transform the schools and stick with the task when things go wrong. Without such leaders, the future of public education in the United States, and even the future of democracy in this country, are at great risk.

WHY REFORMATION IS NOT ENOUGH

The drive for reform in public schools has usually been linked to some perceived threat from the outside. In the 1870s the American high school movement was motivated in part by the need to make American boys competitive with the graduates of European trade schools. In the 1960s the threat was the system of education in the Soviet Union, which was said to be responsible for a Soviet advantage in the so-called space race. In the 1980s, the apparent ascendance of Japanese over American manufacturers was attributed to a rising tide of mediocrity that was said to be besetting America's schools. Today engineers from China and India are the perceived threats, and our declining competitive edge relative to these countries—whether real or not—is attributed to a deficient education system that stands in need of repair.

I have no doubt that the U.S. position in the world is linked to the quality of education our schools provide, and I am concerned about these matters. These are not, however, the primary reasons I am committed to transforming America's schools. My rationale for changing schools flows from a very different and more fundamental source than concern about international competitiveness.

Just as I believe that there is a link between education and the economy, I believe there is a link between the schools and the communities in which they are embedded, and through these communities, there is a link to the civic and

moral health of the nation and the democratic order that defines that nation. Over the past fifty years, the nature of these links has changed. In addition, the relationships between children and those traditional institutions that have historically stood between the young and the larger society until they were judged to have reached maturity have changed as well. These changes are affecting what the young need to learn as well as the way children are learning what they come to know.

Today there is an increasing sense of community estrangement from the schools, and the depth of this estrangement is well documented.[1] Moreover, the relationships between the young and the institutions that have traditionally been charged with their education—the family, religious institutions, and schools—are being altered in ways that are immutable. It is these changes, more than the needs of the economy, that for me are the driving forces behind the need to transform our schools. It is these changes that lead me to assert that reform is not enough.

THE NEED FOR TRANSFORMATION

It is time reformers quit "tinkering toward utopia," grafting one reform after another onto a tree that is planted in soil deficient of the proper nutrients.[2] It is time to acknowledge that the education of children in America is now rooted in infertile soil and to recognize that if education is to be improved, schools must be transplanted into a more nourishing environment. Schools must be transformed from platforms for instruction to platforms for learning, from bureaucracies bent on control to learning organizations aimed at encouraging disciplined inquiry and creativity.

The purpose of schools today is to ensure that all students have access to a uniform quality of instruction. The difficulty, of course, is in defining *quality instruction.* In today's reform atmosphere, it is defined as that form of instruction that has the most immediate impact on standardized test scores and by testing only those things that can be standardized.

[1]See, for example, David Mathews, *Reclaiming Public Education by Reclaiming Our Democracy* (Dayton, Ohio: Kettering Foundation Press, 2006).
[2]Tyack and Cuban use the ideas of "tinkering toward utopia" and "grafting" to help them explain the history of school reform in America. I think they are right in their analysis. I also think the pattern they describe must be disrupted if public education is to survive as a vital force in American life. See David Tyack and Larry Cuban, *Tinkering Toward Utopia: A Century of Public School Reform* (Cambridge, Mass.: Harvard University Press, 1995).

The problem is that the type of instruction that is adequate to ensure that students can write on a standardized form a brief descriptive paragraphs about a poem may not be the same type of instruction that will inspire students to *write* a poem—or to create a novel experiment to test or verify some proposition of concern to them.[3] It is certainly not the type of instruction that will inspire the development of the skills, attitudes, and habits of mind that appear in listings of the skills needed for the workforce of the twenty-first century. It is not the type of instruction that will prepare students to learn in an increasingly digitized environment. And it is not the type that will teach young people how to function as effective citizens in a democracy where men and women are overwhelmed with information and purported facts.

It's Not "Merely Academic"

Certainly some students learn a great deal in schools. One of the primary reasons that this is so is that the backgrounds, experiences, and interests of some students lead them to find academic work inherently engaging. For many other students, however, academic work as it is usually designed holds little inherent interest or value to them.

The work of academics is often of much more interest to members of the academy than it is to most adults and most children. Indeed, many Americans, including many of America's leaders, have a certain antipathy toward academic work.[4] That is why one so often hears highly schooled, if not well-educated, leaders say that this or that proposition is "merely academic."

In the world of schools, however, lack of interest in doing the work that academics do, and doing this work in the way academics do it, is often seen as an absence of intelligence. Sir Ken Robinson, an internationally recognized leader in the development of creativity, has observed:

> The rationalist tradition has driven a wedge between intellect and emotion in human psychology; between the arts and sciences in society at large. It has distorted the idea of creativity in education and unbalanced the development of millions of people. The result

[3]This argument was suggested to me in Linda Perlstein, *Tested: One American School Struggles to Make the Grade* (New York: Holt, 2007).
[4]The idea that there is a deep anti-intellectual strain in American culture is well documented. See, for example, Richard Hofstadter, *Anti-Intellectualism in American Life* (New York: Knopf, 1963).

is that other equally important abilities are overlooked or marginalized. This neglect affects everyone. Children with strong academic abilities often fail to discover their other abilities. Those of lower academic ability may have other powerful abilities that lie dormant. They can pass through the whole of their education never knowing what their real abilities are. They can become disaffected, resentful of their "failure'" and conclude that they are simply not very bright. Some of these educational failures have gone on to have great success in adult life. How many do not?[5]

Academic subjects are important, but there are many ways to learn them and many ways to demonstrate such learning in addition to the ways academics have contrived. Unfortunately, too many of our national leaders, journalists, and pundits cannot imagine a system that will push everyone ahead—a system in which multiple standards of excellence might be applied. Excellence in schools is still seen as the property of the relative few who are academically inclined, and inclined as well to share the values that academics hold most dear.

Academic ability and interest in matters academic are not equally distributed, any more than are athletic ability or artistic ability. This does not mean that race, poverty, or other genetic or cultural features should be considered a source of variance in these abilities. What it does mean is that abilities of all kinds vary within groups, even more than between groups.

Because schools fasten attention on only one of the many abilities possessed by humankind (and define that ability so narrowly that only a relatively few can be demonstrated to possess it), schools have become as much about identifying failure as about promoting success. Indeed, if by some magic every child in America were suddenly to achieve academically at the level of the present top 10 percent of students, and if the schools should honor this achievement by giving all children A's, there would be a national clamor about schools lowering standards even more. "Every child a success" is a great slogan, but one that has fewer believers than some sloganeers believe.

In spite of slogans to the contrary, most Americans cannot imagine a system of schooling in which all children achieve at high levels. Our system assumes that the success of some children is dependent on the failure of others. As one wag has

[5]Ken Robinson, *Out of Our Minds: Learning to Be Creative* (Mankato, Minn.: Capstone Publishing, 2001), pp. 8–9.

said, "It takes a bottom half to hold the top half up." Until schools are designed to capture each child's full potential, rather than simply develop one dimension of it, and until the word *standards* refers to more than a narrowly defined notion of academic standards, there is little chance that most children will be educated in the way democracy requires, the economy demands, and children deserve.

A long line of research demonstrates that time on task alone is adequate to improve test scores, and some research supports the notion that highly structured and prescriptive teaching techniques produce relatively quick improvements in test scores (especially among students whose test score history is on the sorry side). But this research does not speak to the quality of the learning measured, and it is the quality of learning that should be of concern.

Transformation of our schools will require leaders who are prepared to repurpose and reimagine schools rather than simply reform them. The strategies that are most efficient in increasing test scores, at least within the context of our bureaucratically organized schools, have little to do with increasing student engagement, and without engagement, the quality of student learning is likely to be low.

We need to accept the fact that efforts to increase engagement may be less productive of quick gains in test scores than some of the drill, review, and test preparation techniques being employed in many of America's schools. The lasting effects of learning that result from engagement will, however, be profound and will show up in ways that can be observed, measured, and evaluated. Unfortunately, the tests needed to accomplish this end are not easily administered on a mass basis. Moreover, they do not meet the requirements of those who would use tests as a control mechanism as opposed to a tool for continuous assessment of direction and goal attainment. Indeed, the challenge that should be confronted by those who want schools to focus on twenty-first-century skills has to do with finding ways to assess in ways that are believable by ordinary citizens such things as creativity, the ability to collaborate, the ability to synthesize data from many sources, and to critically evaluate that data rather than depending on standardized tests to do their assessment for them.

Twenty-First-Century Realities

Three relatively recent changes are already affecting what happens in schools and the relationships between and among parents, teachers, students, and schools:

- The availability of digital learning opportunities

- The creation of the idea of adolescents as a demographic category and the increasing significance of peer groups among the young
- Direct marketing to children and adolescents

These new realities present both challenges and opportunities—challenges to the educational status quo but also opportunities for innovation and transformation.

The Digital Imperative No single development has done as much to break down the protective boundaries that the family, religious institutions, and the school have traditionally maintained around the young as has the advent of electronic information transmittal, storage, retrieval, and processing technologies, commonly referred to as *information technology* (IT). It is telling, however, that in schools, IT often means *instructional* technology rather than *information* technology. This is so because schools are organized to support and control instruction, and instruction is the defining characteristic of the work of teachers. Indeed, *instructing* and *teaching* are often used as synonyms. Therefore, new technologies are almost always examined in terms of their potential for supporting and improving the work of teachers rather than in terms of their capacity to support the work of students.

The revolution created by the application of digital technologies to the organization, management, processing, and presentation of information, images, data, and all manner of human expression cannot be appreciated as long as these technologies are viewed as tools for instructors. These technologies are in themselves instructive. What is most powerful about them is that they place instruction under the direct control of the person being instructed: the learner. In the digital world, the learner, not the instructor, is in charge of what will be learned, as well as how and when that learning will occur.

Educators are acutely aware of the digital revolution. Unfortunately, too few value the potential of the new tools as tools for learners. Indeed, the common reaction is to try to bring the new technologies under the control of the instructional system. The following comment from an experienced Indiana educator is illustrative of this view:

> It is my belief from experience, practice, and conversations that many educators still believe technology is either the enemy, because it is our number one competition for the attention and time of our

students, or additional baggage, because technology-related skills are something extra that must be added to the myriad content-related learning objectives which students must master. Another school of thought views technology solely as teacher management tools—instruments that will make for better presentations, easier record-keeping, and/or greater access to student data. Until a shift occurs with this thinking, technologies of all kinds will never be effectively used in the schools to make the greatest impact on learning.

The dimensions of the changes that will be required in schooling are enormous. The following statement by a Texas educator who is struggling with these issues gives an indication of just how dramatic these changes are going to be:

> As a result [of new technologies] students are empowered to take on a more active role in the classroom, which becomes a shared space where teachers and students learn together and from each other. These newer technologies also give students a voice, where traditionally they had none, and provide an authentic audience of potentially millions. Increasingly, students will direct their own learning and learning will happen in conversations, as opposed to structured lesson plans. And just as in life, learning will be connected rather than happening in isolation.
>
> All of this forces us to rethink how we do school. So much of learning can and does happen outside the four walls of the classroom and with so many more people than the teacher. Learning doesn't just happen between the hours of eight and three. It's a continuous process for both teachers and students. We can no longer artificially filter what students are exposed to and instead have to help them learn to filter on their own. The lines between teacher and learner have to be blurred and the very idea of what is considered content has to be reconsidered.

The questions are whether schools have the kinds of leaders needed to bring about such a fundamental transformation in the authority relationship between students and teachers, and whether the boundaries of the schools can be made sufficiently permeable to safely admit the information that the digital world makes available. Without such leaders, the transformation of rules, roles, and relationships that is required will not occur. And without transformation, about

all that can be expected from school applications of new developments in the IT world is the digitization of past practices. More important is the fact that without the needed transformation, schools will play a less and less vital role in what the young learn and will be less and less important in shaping the worldviews the young develop.

In the future, students will have increasing choice concerning the form their instruction will take and considerable control of the time and place that instruction will occur. This means that if schools are to continue to be central in the educational lives of the young, teachers must be more than designers of engaging work for students; they will need to learn to be guides to alternative forms of instruction. Rather than be nearly exclusive sources of instruction for students, as they now are, they will need to be prepared to help students locate the sources of information and instruction that are most appropriate to their learning styles.

When this change occurs, students, especially older students, will be encouraged by teachers to seek instruction wherever it is available and wherever the style of instruction meets the learning style of the student. Schools will be places where intellectual work is designed that cause students to want to be instructed and will become platforms that support students in making wise choices among a wide range of sources of instruction available rather than platforms that control and limit the instruction available to them.

For this transformation to occur, digital technologies must be viewed as learning aids rather than tools that instructors use to do only slightly better what instructors have done for the past two hundred years. The survival of the American culture and way of life may well depend on the ability of the today's educators to find ways to encourage the young to become engaged in digitized tasks and activities that will call on them to learn those things the wisdom of elders suggests they need to learn.

The Impact of Peer Groups　Up through the 1940s, adults were much more significant in the lives of adolescents than was the peer group. This is no longer true. Adults, especially parents, continue to play a dominant role in the lives of the young, but the peer group, especially the adolescent peer group, is more influential than was the case at the time that America's system of schooling was designed.

This is not to say that peer groups did not exist in the past or that peer group pressure was not important. Rather, since about 1950, the young have become