

Leadership without Followers

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The concept of leadership is fraught with misconceptions. People often see leadership as a combination of meticulous management, adept political maneuvering, and responsive facilitation of others' activities. While each of these is important in advancing the field of educational technology, I believe the true nature of leadership is exemplified by the four attributes below.

Leadership Requires Envisioning Opportunities

One of the most important attributes that distinguishes leaders from managers is "vision": the ability to communicate desirable, achievable futures quite different from where the present is drifting. Leaders create and convey compelling images of how our reach is much less than our potential grasp; they redefine people's paradigms about what is possible. In contrast, competent managers are adept at organizing operations so that an institution's efficiency in accomplishing plans is optimized. This is a vital task often neglected by leaders who do not understand management, to their later regret, for good administration involves both envisioning and operationalizing.

At present, educational technology offers many opportunities for leadership because every aspect of its context is rapidly shifting. The information technologies are evolving very quickly: merging, adding powerful capabilities, decreasing in cost. The global economy is changing the skills American workers must have, emphasizing both technical excellence and intercultural design for the worldwide market. Simultaneously, the U.S. population is becoming more diverse, pluralistic—a salad bowl rather than a melting pot. Society's conception of the educational system's role is also in flux; at the heart of current movements for reform and restructuring is a desire to move beyond fine-tuning present models to redefining the nature of schooling.

Over the next decade, all these external forces will combine to drive major shifts in the mission, curriculum, clients, and process of educational institutions (Dede, 1992a). Whether these changes actually improve learner outcomes will depend in large part on the quality of the visions we forge during the early 1990s. The challenges we confront require a new, better paradigm for schooling; the power of emerging technologies enables implementing models for teaching/learning unique in the history of civilization. A great American philosopher, Yogi Berra, once said that—if you don't know where you are going—you are likely to end up someplace else. The opportunities for leaders in educational technology to invent innovative visions are boundless.

Developing motivating images that capture the essence of needed changes is important, but insufficient to make educational technology a driveshaft for reform. Leadership also involves creating steppingstones that bridge from a desired future to the current gridlock typical of many American schools. In evolving from its present state to a

distant objective, an educational institution must progress stage by stage. Each step of evolution requires a critical mass of resources and must create a stable, desirable situation.

When I share ideas, I present trends and discontinuities that are driving major changes in our societal context and can serve as the basis for steppingstones to the future. Some of these developments have a negative impact in the short-term, but long-term open up possibilities for educational evolution. For example, society's immediate response to economic crises is to cut back on instructional innovations, but in the long run financial hardship can drive needed changes by forcing schools to abandon ineffective approaches that have hardened into traditions.

Other developments, such as advances in educational technology, create new possibilities for improving teaching/learning. As one illustration, digital video technology allows the synthesis of computer graphics and video images, enabling the television generation to see and manipulate visual representations of abstract, intangible concepts (Dede, 1992b). Developing visions that transcend how emerging capabilities enhance conventional schooling to depict their implications for empowering new paradigms is vital. Ultimately, digital video is not simply a more powerful tool for teachers' presentations, but also enables inexpensive multimedia authoring by students. By constructing their own knowledge structures, learners gain a much deeper understanding than by simply assimilating a pre-packaged multimedia experience.

In my talks and articles, I describe how we can act today to take advantage of these technological innovations, building on their impacts to actualize new models for schooling. I also emphasize how political, economic, demographic, and sociocultural forces will affect this process of attempted transformation, empowering some changes while repressing others. A credible, desirable vision is based on both opportunities and challenges. Without levers for improvement, significant gains in educational effectiveness are unlikely; without troubles, society will not shift from drifting through the present to implement alternative paradigms for teaching/learning.

My presentations give a balanced picture of where we are in history—both the good news and the bad news—to demonstrate that a hopeful image of the future can emerge from turbulent, uncertain, even dangerous times. Synthesizing optimistic/pessimistic perspectives on technical, political, and economic themes into a compelling future image is very demanding; one must be an intellectual omnivore with an emotional stance midway between hope and cynicism. I have found cultivating this professional outlook to be challenging; slipping into optimism or pessimism, becoming a technophile or a "doubting Thomas" are constant, subtle traps. However, maintaining a

balanced perspective conveys the reward of visions that are detailed, plausible roadmaps to desirable futures.

How does one develop and maintain this discipline of dispassionate, integrative envisioning? I have found the following heuristics useful:

- Seek out sources of information that you find intellectually stimulating, especially if you instinctively disagree with their conclusions. Informed, but opposing points-of-view enrich visions.
- To broaden your ideas, find sources of information good at explaining material outside of your professional area (e.g. if you don't understand artificial intelligence, read authors who synthesize/translate recent work for a lay audience).
- Reflect on the quality of recent events in your personal/professional life (things going well? badly?) and compensate for that emotional bias in your images of the future.
- Keep an open mind about revising your prior visions as the world changes. Getting stuck in a particular flavor of futures is a seductive pitfall.

Above all, remember that the leader's goal in envisioning the future is not to construct intriguing speculations, but to incite transformative action in the present.

Leadership Requires Displacing Cherished Misconceptions

An important attribute of leaders is their ability to displace deeply held, cherished misconceptions with alternative visions that more accurately depict reality. Mistaken beliefs most people hold about teaching and learning form a barrier that blocks improving American education. For example, many in our culture have a subconscious image of the secondary school that is based on the following assumptions:

- despite coming from diverse cultural and socioeconomic backgrounds and going through puberty, just below the surface teenagers have a strong work ethic and a fascination with intellectual pursuits
- regularly attending PTA meetings and sports events, paying taxes, and electing dedicated school board members provides sufficient parental support for quality education
- because they are deeply fulfilled by their impact on learners' lives, highly qualified teachers will enter and stay in the profession despite low salaries, marginal working conditions, and little respect from the community

- schools should be settings isolated from the real world in which learners are grouped by age and taught the academic disciplines as formal subjects
- students are graduating into a future workplace in which mastery of the skills multiple-choice tests can measure will guarantee them a fulfilling, prosperous career
- technology's utility in education lies in automating routine activities that underlie this model of schooling and in motivating learners via instructional formats analogous to video games and television

Unfortunately, all these assumptions that underlie this image of the secondary school are fundamentally inaccurate (Dede, 1990a). As a result, intensively applying technology to improve this model of education (e.g. integrated-learning-systems and computer labs, multimedia-based teacher presentations, more elaborate testing) results in only small improvements in outcomes.

Shifting communities to alternative visions for education that are based on more realistic, but less comfortable assumptions is a major leadership challenge. In abandoning the old model of secondary education, parents and businesses and teachers and students must confront some unpleasant truths about our culture's current weaknesses. For schools to succeed, parents must provide time and effort as well as money; an excellent teaching staff may cost more than most communities are willing to pay; many students do not have middle-class values and aspirations; and the skills for future occupational success in the global economy are quite different from what can be conveyed by test-oriented, subject-centered group instruction in classrooms remote from real-world settings.

Leadership requires packaging alternative assumptions and paradigms as part of a larger vision that inspires new roles for educational stakeholders. In my work, I use scenarios as a means of undercutting "conventional wisdom" by highlighting potential futures quite different from present models of schooling. Here is one example (Dede, 1990a):

Dr. Hari Grosvenor sat on the floor with his students in a circle. Three 6-year-olds were trying to talk simultaneously. Each was somewhat impeded in the discussion by having to use Spanish (this part of the day was devoted to practice in a second language), but their enthusiasm was unhindered. To Hari's relief, only his handicapped student's instructional device was currently in the room; he hated information technology.

Hari felt that intelligent tools had their uses, but not in his classes. The foundations for his pupils' discussion had been laid by technologies that trained

them in the prerequisite knowledge, but only a human teacher could master the intricacies of teaching a seminar. His specialty was helping learners with low self-esteem feel capable, loved, motivated, and challenged. Hari reveled in the freedom he had: to teach anything he wanted in any way he chose, so long as his students' sense of personal worth increased. His ability to assess individual learning style better than the most sophisticated diagnostic devices was being studied, but he knew that a machine could never replace him.

From her vantage point at the far side of the circle, safely in the middle of her pressure pad, Ariel watched Hari deftly refocus the discussion. The scanner on top of her computer screen continually monitored Ariel's actions with her wooden blocks. Simultaneously, icons on the screen depicted her movements, text along the screen's bottom described her actions, and a synthesized voice in her earphones discussed what she was doing. Her congenital mental handicap was rapidly improving through this immersion in multiple representations of reality, from concrete manipulations to abstract symbols—plus the care of her teachers. Still, she liked her machine best of all right now; no person was as oblivious to her handicaps.

Having intervened to stop his seminar from coming to blows over who should serve as their representative on the school's governing board, Hari's thoughts wandered. He wondered how he should spend his merit bonus; once again, his innovation quotient had been the highest in the school. "Computers slow down those other teachers and stifle their creativity," he mused. "I'm glad the next stage in the master plan for our region calls for less reliance on instructional devices. Biotech prosthetic enhancers are definitely the best thing going."

Hari's merit bonus for innovation, his freedom to control content and methods as a way of building learners' self-concept, and the participation of students in school governance exemplify assumption-breaking innovations essential for successful restructuring. Ariel's sophisticated technological aids, which serve as an external nervous system, provide a provocative contrast with Hari's "anti-technological" stance.

Incorporating humor into these vignettes provides a framework for discussing the obsolescence of current approaches in a motivating, rather than discouraging manner. These scenarios also depict new roles educational stakeholders might play without bogging down in the immediate mechanics of how to bridge to these futures from the present; the intent is to provide a sketch rather than a blueprint. In counterpoint to

assumption-breaking scenarios, however, television's "situation-comedy" classrooms convey opposite images that reinforce cherished myths in our culture. Undercutting society's mistaken beliefs about teaching/learning requires both attacking these myths and advancing compelling alternative ideas.

Since our society frequently uses gadgets as magical remedies in attempting to solve social problems, moving beyond the conventional wisdom of educational technology as "silver-bullet" is difficult. In our field, leadership requires developing both instruction-oriented technologies and technology-intensive learning-by-doing approaches; applying this combination of pedagogical strategies necessitates numerous assumption-breaking changes in the organizational context of the classroom and the roles of teachers, parents, and students. Creating and conveying technological visions powerful enough to displace traditional educational models is one of the most challenging aspects of leadership.

How does one identify obsolete paradigms and forge visions that encourage alternative conceptions? An excellent resource on the intellectual processes underlying scenario building is Peter Schwartz's [The Art of the Long View](#) (1991). The following strategies have been particularly helpful for me:

- Start with the central change you wish to foster, then identify all the major factors (inside and outside the organization) shaping that issue. This process highlights the driving forces to include in alternative visions and frequently surfaces underlying, conventional assumptions to question.
- Rank key assumptions and driving trends on both their importance to the change you wish to create and the degree of uncertainty surrounding their continuation. The most important *and* uncertain factors form the basis for differentiating alternative scenarios.
- Build each vignette around some type of story: how a particular group responds to a major challenge to their way of life, how the evolution of a technology reshapes an organization, how the assumptions underlying a traditional approach erode and are displaced by new ideas. The intent is to provide a "snapshot" of some future time, hinting at the "movie" that could provide a path from our present to that vision.
- Make sure that the scenario is constructive in presenting the change process: depicting the advantages for every group involved; positive about people's willingness to adapt; portraying the challenges to be overcome in a realistic,

but humorous manner. Invoking an attainable image involves constructing a vision that all major stakeholders find desirable.

The creative formulation of assumption-breaking visions can be one of the most enjoyable aspects of leadership; breaking the invisible chains that bind our minds is very stimulating.

Leadership Requires Inspiring Others to Act on Faith

Inspiring a group to work toward a shared vision necessitates building trust: faith that this team of people can overcome all the obstacles that block creating a future quite different from the present. We often speak of visions as "dreams" because we do not believe they are possible; we doubt that they can be made real. Actualizing a plan for the future involves harnessing people's emotions as well as their minds, developing both understanding and belief.

The psychological stability of the present impedes our ability to emotionally invest in a future divergent from established trends and traditions (Dede, 1990b). We know that earthquakes or assassinations, winning the lottery or scoring a sensational come-from-behind victory are statistically inevitable—but we are surprised when they happen because the commonplace nature of most events undercuts our belief in discontinuities. When someone can prove that a desired future is logical, rational, and inevitable, then any competent manager can persuade an institution to act. The challenge of leadership is to inspire individual and organizational faith in the seemingly impossible, developing a collective affective commitment that can move mountains of impediments.

By evolving so rapidly that each new development seems almost magical, information technology provides a fertile medium for nurturing trust that educational transformation is achievable. The availability and affordability of tools powerful enough to reshape learners and schools can help create the emotional motivation to risk innovation. Leaders build on the enthusiasm that sophisticated technologies induce to encourage an affective climate that rewards risk-taking and accepts occasional failures as an inevitable byproduct of developing new approaches.

Building shared trust in a vision requires a type of emotional charisma that goes beyond having good ideas. By accomplishing apparently unachievable outcomes themselves, leaders instill confidence in their collaborators. By never wavering in commitment and in certainty that the goal will be reached, leaders inspire similar faith in others. Would-be innovators who rely solely on intellectual suasion reap applause, but not action.

This dimension of leadership keeps me humble about the impact I have through making speeches. However excellent and inspiring a talk—and a visionary address can have a considerable emotional impact—sowing motivating ideas about information technology's role in education is only the first step in achieving sustainable change. I view my writings and conference presentations as good catalysts for innovation; because these activities reach a wide audience, they are among the most important things I do. I also recognize that the possibilities of lasting improvement are remote unless local leaders use my visions as part of an infrastructure to provide both intellectual and emotional support for reform. On the other hand, as an outsider to the local group, I can discuss unpleasant truths and build credibility for challenging policies (the "visiting fireman" syndrome — an expert is always someone from more than fifty miles away).

Shooting a few silver bullets and riding out of town is a seductive role, but comprehending the limited nature of the outcomes this behavior produces is important. Leaders understand that their success depends on combining the wisdom of the sage with the emotional nurturance of the healer or minister. Building faith and trust is essential in converting a group's understanding to shared, sustained accomplishment. This is particularly true with educational technology, since many hours of effort are required to realize the potential of sophisticated hardware and software. Despite the "plug and play" protestations of the vendors, developing technology-intensive educational strategies requires substantial emotional commitment and frequent leaps of faith into the unknown.

How does one inspire an organizational environment of shared risktaking and trust? The Fifth Discipline by Peter Senge (1990) is a good resource for ideas; recipes for success are hard to give, because so much depends on your particular interpersonal style. Approaches I have learned include:

- Make the process of change personally rewarding to participants: people like to learn new skills, to be part of a team, to feel successful by overcoming a challenge, to find the humor in shared adversity. Focusing on process enables the change effort to keep going even if a particular strategy fails; if outcomes are seen as the only measure of success, a group's first setback will destroy its effectiveness.
- Help others to see that their personal identity extends beyond their current job. We live in a culture that places too much emphasis on individual work roles as a source of self-worth. Refocusing emotional perspective on new missions within the purpose of the overarching enterprise (empowering society's next

generation of human resources, rather than being a seventh grade social studies teacher) opens up new reservoirs of motivation and purpose.

Two final thoughts on this aspect of leadership: First, if everyone in your organization likes you, you are not fostering enough change. Second, if you never fail, you are not taking enough risks.

Leadership Requires Discouraging Followers

A destructive myth about leadership is that a visionary person gives directions to followers who execute this plan. Real leaders discourage followers, instead encouraging use of their visions as a foundation for other, better insights. True solutions to problems are always based on ideas from multiple perspectives; no individual, however capable, can incorporate the full range of knowledge and experience needed to invent an educational system that fulfills the needs of a diverse community.

When leaders who surround themselves with followers fall from grace or move on, the innovations they have inspired collapse or wither. Sustainable transformations require stakeholders who fully understand the what and how of the vision and who act together—top-down, middle-out, bottom-up—to evolve dreams into realities. Technologists have often erred in setting themselves up as wizards who understand the magic in the black box. Instead, a leader in educational technology should inculcate others' visions, knowledge, and commitment to the point that all are jointly leading. This requires moving beyond the role of team facilitator or coordinator, acting as an exemplar by deliberately following others instead of always leading.

Emotionally, shedding the power and rewards of authority is very difficult. We all secretly long to be the superstar in front of the worshipping audience, to inspire awe and reverence. Like any other social movement, educational technology has generated some leaders who degenerated into gurus. Worse, many potential leaders have abdicated their responsibilities to instead assume the comfortable mantle of discipleship, blindly following someone else's vision. Condemning leaders seduced by power is easy and fun; recognizing the times each of us has avoided the difficult path of leadership to become a follower is hard and painful. Educational reform can achieve genuine, lasting success only when each stakeholder accepts the responsibility of leading.

In conclusion, leadership is a role fraught with difficulties, requiring both wisdom and maturity. Yet my goal in articulating the requirements of leadership is to encourage everyone to lead, always. If each of us were to act in the ways described above—every

day, however imperfectly—educational technology could be the driveshaft for restructuring education and shaping a bright future for our society.

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