

# The Principal and Technology Beyond Automation to Revitalization

**G**rowing numbers of principals are attempting to focus their energies on two major, interrelated efforts: implementing a systematic school improvement process and developing their own leadership and management skills. Principals are looking for levers and switches that will help them form a coherent vision and select appropriate means to actualize it. On the one hand, they must be problem solvers, crisis managers, and



The decisions principals make now about using technology are critical to their growth as leaders and managers and to the improvement of schools.

resolvers of conflicts. On the other, principals must be visionary, leading their organizations to anticipate and address issues and problems that have been overlooked or ignored. Principals are constantly in danger of becoming asphyxiated by the tensions and contradictions inherent in trying to lead at one moment and manage the next.

Skeptical of yet another bromide for their already tempestuous situation, some principals derive little comfort from technology's promise but view it as just one more innovation to implement. I believe that the new technology will be a significant impetus and support for accomplishing school improvement *and* for revitalizing the way principals think about their own work. We need to rethink the very essence of what principals do in schools. My thesis, however, is conditioned not on the technology but on principals' abilities and commitment to reconceptualize and reshape their roles. Principals must look first at their own needs and those of their schools and then, based on this examination, to technology's existing and emerging capabilities.



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Some principals are turning to technology, particularly the computer and its ability to automate many of their information processing tasks. They are recognizing that information is at the core of both school improvement and effective leadership and management. Technology could be the means through which school effectiveness will be realized. But despite pockets of innovation, it is still commonplace to leave the computer lab where students are learning computer tool skills and to pass the principal's office where the manual typewriter and three-by-five cards are much in evidence.

### **A Technology of Technology Use**

A strong case can be made for working on both fronts at once—blending school effectiveness and leadership and management development into a program for revitalization—and using technology to help get it done. Not a simple task, to be sure, but my work with scores of principals assures me that it can be done. From these educational "intrapreneurs" I have learned not only the technical details, but have gained a few insights about the framework issues as well. At the risk of being accused of describing a state that can't be reached from where most principals are now, let me offer a few operating principles for using the technology in creating effective schools and enhancing leadership and management.

*Don't just automate, renovate.* Diebold<sup>2</sup> tells us that it is natural at first to use the computer to automate what we are already doing. Nothing really changes at this stage except that the task is performed more effectively and efficiently. The real benefits accrue, Diebold suggests, when we begin to reconfigure the task *because* the computer or related technology tool is available, because it opens up new possibilities in the way we organize and analyze information. The computer can be used to accomplish a drizzle of trivial things. Manipulating numbers in infinite variations can produce a myopia that is detrimental to effective leadership. The computer's capabilities can seduce principals into over-emphasizing first-level management tasks, thus failing to achieve the balanced role, the symmetry of narrow

*Photographs by Nelson Martí*



focus with broad vision, of asking "what if" and "why" as well as "what." Principals will need to learn how to use the computer to move beyond first-level questions, to add value to information as they transmit it to staff, to the central office, and to parents and community, and to extend their reach and discover questions and information needs as well as respond to them.

*Don't tax the technology.* Technology cannot solve all of principals' problems or accomplish the needed renovation alone. Just as we would not expect student writers who use word processors to improve their writing skills dramatically without concurrent attention to developing writing skills, so should we not expect improved leadership and management with technology without concurrent attention to developing those leadership and management skills in parallel fashion.<sup>3</sup> As Dede recommends, we need to form partnerships, not dependencies, with technology tools.<sup>4</sup> Drucker informs us that the essential new technology is entrepreneurial management, not hardware and software.<sup>5</sup> If technology alone can't create better leaders and managers, it also can't make schools more effective. For technology's contribution to have an impact, principals will need to implement a coherent set of improvements. As with instruction, the potential of the technology will be realized most fully when principals revitalize their leadership and management roles.

*Promote and monitor productivity.* Part of the problem in using technology in educational settings is that gains in productivity are hard to realize and even harder to value. Most educational resources are labor intensive, and principals have little control over how those resources are used. Traditionally educators have had difficulty in taking advantage of productivity tools. However, as Drucker suggests, principals as managers will increasingly have to take into account the costs of *not* automating.<sup>6</sup> Those who are looking to find time to deal with their leadership roles—with identifying new problems and opportunities as well as solving old ones—will increasingly incur costs by failing to allow the computer to release them first from burdensome information processing tasks, and ultimately to help them identify those



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areas where their leadership and management skills can be put to best use. The benefits of technology applications in education are realized at considerable cost, the least of which is the hardware and software expense. The learning curve is formidable and, because it is difficult to assess the costs of not automating, it is a major impediment to implementing even first-level applications.

*Focus on substance, not procedure.* Given the need to use technology to support leadership and management, principals will need to establish working criteria for selecting technology applications. Instead of focusing merely on automating reports, they will need to procure some technology that helps them find problems and identify opportunities. Just as there is a tension between the roles of leadership and management, there is also a tension between the levels of use of the technology. Principals need to avoid automating those reports that just last week they castigated for their uselessness. As Perkins admonishes, if principals stay at level one, they should not expect any real changes in their leadership and management abilities.<sup>7</sup> Principals will need to couple the use of these technology tools with serious attention to developing leadership skills, to asking the "why" and "what

if" questions, to finding problems rather than merely solving them. They must avoid slipping into a mode in which procedure drives out and becomes a surrogate for substance.

*Develop, then delegate.* So much of the principal's job deals with human interactions. At one level, the computer can save time so that the principal can spend more of it on human resource concerns and activities. More important, the information system may be able to identify those variables in the system where intervention would yield a high return on these investments of time. Technology often forces people lower in the organizational hierarchy to do higher-level work. In business and industry, secretaries and on-the-line workers, using technology, are managing larger and more significant parts of the work. In the private sector, the role of the middle manager is undergoing significant change. Technology is making it easier to get along with fewer of them, and those that remain are being required to take on new roles. By automating many of the tasks that traditional managers do, the computer is changing the manager's information handling role from collector and synthesizer to decision maker. This change will require that principals work with their staff members in developing new information handling procedures and then hand them over to these same people for completion. If this new pattern diminishes the principal's paperwork burden, what will be done with the released time?

Kanter's admonition that individual and organizational innovation often lags behind programmatic innovation is particularly appropriate here. The organization of schools—schedules, staffing, allocation of human and other instructional resources—often impedes gains in productivity and performance that are implicit in technology applications. For technology to benefit schools, principals will need to attend to some of these seemingly intractable organizational impediments. Not coincidentally, it is these very impediments that the technology can help address.

### **Tools for Revitalization**

Principals, more than any other group of educational professionals, will need

to use technology appropriately to help bring about the revitalization of education. The pressures on principals for entrepreneurial leadership and management will continue to grow and are likely to require the insightful use of computers and other technologies to support school improvement. The computer and other emerging information technologies can help principals to cope not only with the pressures, but can serve as a powerful force for improvement. The applications principals make of technology for individual and organizational improvement will depend on the visions they form as leaders, on the images of potentiality they perceive in the synergy of school effectiveness, leadership development, and technology.

If schools are to become learning organizations, the principal will need to show the way. Our schools are in desperate need of substantial revitalization and the leadership that such change efforts requires. With all of this attention on principals, it will become increasingly more difficult for them to lay their problems at the superintendent's door. Comprehensive school-based management is still devoutly to be wished in most school districts, but principals' control of curriculum and organization is increasing and with it the responsibility to adopt the patterns of effective leaders and managers. Principals who view technology tools as partners will become increasingly more empowered to undertake this leadership. Having been empowered, they will then be able to think more deeply about changing the very essence of their job. If the computer is used as an evocative tool, principals may yet realize the lofty aspirations they hold for themselves. For principals to appreciate the special revitalization potential of technology, they will need, as Turkle advises, to attend less to the capabilities of emerging technologies and more to what they themselves are becoming and will need to become as leaders and managers.<sup>9</sup> Beyond the benefits of automation and the productivity gains, principals will need to harness the technology to their emerging vision of leadership and productive management. Rather than merely anticipate

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the future, principals will need to invent it.

If principals view technology as just another innovation, some may feel that they can ignore this one as they have others. Perhaps, they reason, it will fade or result in relatively superficial changes. However, not only will it be increasingly more difficult to avoid technology, but nonusers will stand out, and their productivity will go down. And—this will take a bit longer—there will be a growing number of principals who will be using technology to move beyond automation to revitalize their leadership and management.

Other principals may decide to wait. After all, if there's a lot of trial and error involved; why not let someone else do it and buy in when all the bugs are out, when the costs of doing it—time, effort, risks of failure—are lower? This position is based on an assumption that there is no learning in the process, no development of a capacity to tackle the next problem more effectively. Recipes for using technology that someone else has developed may suffice for low-level uses; they will not do for revitalization, for gaining insights into the technology of using technology. Those who wait will become increasingly dependent on their more entrepreneurial colleagues.

Of course, the aspirations many have for technology need not come true. There is ample evidence that technology can be misused, employed to automate and perpetuate nonsense rather than promote insight. The tech-

nological capabilities to become available over the next few years will sorely test principals' decision-making skills. The choices they will make are critical to their own development and to the future of the schools. Principals need to use the power of the technology to alter the shape of their understanding about what matters in schools.

School effectiveness through leadership won't just happen because technology is used. It will take deliberateness, persistence, and patience to achieve the reconceptualization and revitalization that is needed. If principals can move with technology, coincidentally with everything else, and see it as a tool rather than an appendage, they will encounter substantial opportunities for effective and productive leadership and management. Without such a perspective, principals will fail to realize not only technology's potential, but they will fail to realize their own. □

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4. Christopher Dede, "Intelligent Computer Assisted Instruction: Review and Synthesis of Research" (unpublished paper, University of Houston, March 1985), 56.
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6. Peter F. Drucker, "Automation Payoffs Are Real," *Wall Street Journal*, 20 September 1985, editorial.
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8. Rosabeth Moss Kanter *The Change Masters* (New York: Simon and Schuster, 1983), 20.
9. Sherry Turkle, *The Second Self: Computers and the Human Spirit* (New York: Simon and Schuster, 1984), 13.

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