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ABSTRACT

This article focuses on the key changes that technology has brought to education and how these changes will affect school administration. The paper examines the potential use of virtual schools and distance education, noting how each of these strategies will allow educational strategies that are not possible with brick-and-mortar education. School administrators should not only ensure that technology is available to students and teachers, they should incorporate technology into their own work. Some of the key areas that are being changed by technological innovation are data-driven assessment and accountability; connectivity and the inclusion of others; and communication and the heightened communication among educators from across the globe. Technology will also alter the roles and responsibilities of school personnel as all stakeholders become involved in organizational improvement. The new organizations will require "inner-directed" people who have the self-actualization to handle the changing environment of job complexity and the interrelationship of technology and education. As more people have access to information, individuals at all levels will be able to make suggestions that can alter the course of an institution. The boundaries between administration and other positions will blur as all stakeholders become empowered to improve their schools. (RJM)

Technology and the Changing Nature of School Administration

by

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Technology and the Changing Nature of School Administration

We are at the threshold of the twenty-first century, the Age of the Mind, where the successful individual will be one who not only has access to education, information, and technology; but who can also employ these three things in creative ways. This millennium will be one in which computer and communication technologies will transform the national and global economies into information-driven economies, triggering an Information Revolution, which will have profound political and societal impacts rivaling those of the Industrial Revolution. Accompanying these changes will be the evolution of a right-brain world, where routine left-brain activities will be performed by computers and other technologies to free humans for tasks requiring intuitive judgment and creativity toward a mass-enlightenment, which is predicted to integrate the world commercially and culturally as a New Information Civilization.

Today, powerful technologies including computers, electronic communications, jet and space travel, applied biotechnology, and atomic and natural power are reshaping our world. This presents tremendous potential not only for students and teachers, but also for school administrators. New technology changes how we live and work; and as many more people come on-line, its use will not only change our social interactions, but will also change the nature of work and human interactions within organizations. Literate individuals will truly become linked to form a global network of communication, commerce, and learning (Dent, 1998, p. 98). This article will focus on two fundamental questions: What key changes can be expected in the application of technology in education? and How will these changes impact school administration? Two important developments, which will profoundly affect education, are virtual schools and distance technology.

New Models for Schooling

Virtual Schools. Imagine schools where physical location is no longer a prerequisite, nor even a consideration, for enrollment. Students would be free

to enroll in schools throughout the world, or even be enrolled in several schools simultaneously, giving parents unparalleled choice in selecting the school their children attend. Virtual schools have been defined as schools that deliver their curriculum offerings via distance education technology. These schools provide student-centered educational alternatives that offer flexible pacing and allow students to enroll in classes that are not available at their home campus, or earn college credit while completing high school requirements. Some states have already begun exploring this educational model to provide various configurations of virtual schools ranging from alternative schools and schools for gifted students to charter schools.

Distance Education. Distance education is the umbrella term that encompasses teleconferencing[i] and videoconferencing.[ii] It serves as the vehicle through which instruction takes place when an instructor and students are geographically separated by time, distance, or both. Through distance education, students may take dual-credit courses and receive high school credit and college credit simultaneously; take specialized or advanced courses such as foreign language courses, from other institutions; or take courses offered by other schools within their district without having to travel to those schools.

Distance technology enables students to meet and interact with students in other countries, states, regions, cities, or school districts; participate in problem-solving activities or react to social problems; have club meetings or leadership seminars with other students; or collaborate with their peers on projects. Teachers in different geographic locations may plan lessons to team teach courses or implement projects with educators from different grade levels or institutions. Teachers and administrators may collaborate or discuss issues with others. Teachers and students may conduct virtual visits to work sites where logistical problems or safety considerations exist, or receive instruction from those in the workplace; teachers and administrators may interact with experts in a particular field; and students may collaborate on projects or

assignments with experienced practitioners. Through distance technology, teachers and administrators may participate in interactive professional development sessions; pursue graduate degrees or continuing education from their own campuses; receive follow-up instruction after attending professional development or training sessions; and coaches and other personnel may participate in athletic, or other, clinics or training (Bilton-Ward, 1997). Distance education along with video/teleconferencing will also enable schools to augment their course offerings to students. For example, a campus may enlist the expertise of additional teachers, who may be neither on site nor faculty members, to provide instruction in specialized or advanced courses to their students.

The Changing Nature of School Administration

Collaborative tools, dynamic linkages resulting in virtual schools and classrooms, and advances in computer languages and browsers are predicted to produce profound change as the Internet becomes a fully robust environment. As instructional leaders of school organizations, school administrators must move forward in ensuring that technology is available for use by students and teachers. They should also employ technology in their own work, for it is believed that administrators are able to make more informed technology decisions when they, themselves, use technology. Incorporating technology use in administration will enable administrative tasks to be completed more quickly and efficiently, thus enabling school personnel to use data to make more effective, informed educational decisions. It will also serve to free administrators to engage in the more human and creative aspects of their positions. Five key areas in which the infusion of technology in educational organizations is already impacting the dynamics of school administration are accountability, connectivity, communication, roles and responsibilities, and decision making.

Accountability

School organizations have become data-driven, with school administrators being increasingly held more accountable for students' academic performance and behavior. Currently, student information is transmitted to state agencies via an information management system; and efforts are under way to facilitate the exchange of information among districts and states. Having such data immediately accessible to school officials can assist them in making critical decisions that impact student performance and in more efficiently compiling documentation to support fiscal requests.

Connectivity

Technology will connect people in new and different ways, aligning them to the organizational purpose and supporting them in ways that are more sustainable. This connectivity will require of administrators different ways of managing people and their activities. For example, rather than conducting meetings in which all participants are in the same room, there will be increased use of videoconferencing where proximate physical presence is no longer required. It may even be possible in the future for one's image to be stored for participation at a more convenient time.

Communication

Mass use of the Internet will make virtual communication commonplace, making the nonphysical world of information far smaller and more accessible (Dent, 1998, p. 107). With new communication technologies will come new patterns for communicating both with individuals and within organizations. Electronic mail, messaging systems and networks all affect the communication and interaction patterns within an organization by reducing interpersonal interaction, particularly face-to-face communication. This will result in the de-personalization of the organizational environment and a significant alteration of the nature and function of nonverbal communication processes. On the other hand, networking will change patterns of information sharing in

organizations and enable the exchange of expertise independent of spatial and social constraints. Educators will be able to collaborate with one another regardless of geographic location, thus expanding the learning community to truly encompass the world. In this way, the Internet will not only link information, but will also link people resulting in richer levels of human interaction (Dent, 1998, p. 114).

Many school districts are currently employing bulletin boards and web sites, as well as on-line school plans and announcements to keep students, parents, community and colleagues informed in a timely manner. Listservs, discussion groups and chat rooms provide additional forums for discussion of important issues relevant to the school and its students. The traditional paper notes to and from the teacher may become a thing of the past as parents and teachers become more comfortable with transmitting them via e-mail, thus ensuring that they are received without delay.

Roles and Responsibilities

Networking and use of the Internet will increasingly make data available to individuals at all organizational levels, thus changing traditional position roles and responsibilities. Added responsibilities and the growing involvement of all personnel in organizational improvement will entail increasing identification with the organizational goals and values, which will also impact faculty and staff recruitment profiles and personnel management policies. The resulting dynamic organizational structure will require "inner-directed people who, at a minimum, make decisions and are operating in the self-esteem or self-actualization levels of Maslow's hierarchy of human needs" (Dent, 1998, p. 201). Moreover, the new technologies will produce a multidimensional change in which job scope, complexity, and the relationship between position and tools, documents or persons may change. Job scope and skills will shift toward diagnosis/problem solving, and control mechanisms will likely become more subtle and more difficult to identify.

Boundaries between administration and other positions are also changing. Many complex tasks previously performed solely by administrators are being transferred downward in the organizational hierarchy to teachers or staff personnel. Other tasks are being driven upward by the creation of new, unforeseen challenges for administrators. The use of the Internet and other technologies will collapse many administrative functions to greatly reduce cost and improve the efficient delivery of educational services to meet increasingly divergent needs.

Administrative Decision Making

Most changes in the way that people communicate at work are the result of common access to databases and computer operations that control the work process. Having access to the same information, individuals at all organizational levels may be empowered to make decisions at their level in the organization, which will profoundly change who talks to whom. As computers become standard conveniences for the home and office, they will facilitate direct communication between parents, communities and educators, which will foster relationships that are predicted to be much less bureaucratic.

Futurists predict that the resulting organizational structure will be a more consumer-oriented bottom-up network structure, like the Internet (Dent, 1998, p. 99). Administrators would become leaders of leaders (teachers and staff) in a dynamic learning organization piloted by the creative, accountable participation of its members and driven by individual student needs. In this model, bureaucracy is eliminated, moving leadership to the center rather than placing it at the top, making the role of administrators critical, although different. Effective twenty-first-century school administrators will be those who are able to harness the power of technology--via powerful browsers, search engines, the Internet or other technologies--and communicate effectively with others at all organizational levels in order to make informed, intelligent decisions.

Implications

Technology is impacting education in revolutionary ways, and the momentum toward these changes is irreversible. When students, parents, teachers, administrators, and community leaders are able to communicate and collaborate electronically about issues critical to education, the traditional educational process will undergo a fundamental transformation, with decisions about a student's learning being resolved in new and more effective ways (Hardin & Ziebarth, 1995).

The Internet has tremendous potential in the field of education. It provides an accessible place for information, removing barriers of time, space and geographic location. The availability of on-line resources makes it possible for anyone to access data, people, and ideas, as well as search any area of knowledge deeply and thoroughly with efficiency. Technology use in school administration will enable administrative tasks to be completed more quickly and efficiently and will enable school personnel to more actively participate in the organization and use data to make more effective educational decisions. Innovative new tools will enable people to construct applications and materials in more creative ways, which will provide incredible opportunities to expand knowledge and perhaps even change the way that people read, think and learn (U.S. Dept. of Education, 1995).

Conclusion

We are standing at the door of virtually unlimited opportunity. We don't yet know how virtual schools will impact equity for students who do not have access to the technology at home; the best way to evaluate the instruction of virtual teachers; or how virtual schools will impact how school enrollment records are maintained. Pioneering school districts are beginning to explore new kinds of course scheduling models that incorporate distance course offerings; and discussions about how distance technology can be used to facilitate personnel recruitment and retention have begun. Discussions have

also begun concerning ways in which the power of technology can be employed to establish mentoring networks between novice and experienced administrators to reduce the isolation felt particularly by novice administrators. How will technology be used to meet the increasingly diverse needs of students and personnel? How will the use of technology impact how student discipline is addressed, particularly in the areas of free speech, sexual harassment, censorship and access to Internet resources? What changes will there be in the requirement for physical presence in organizations so as to maintain membership in a school or district's real-time culture, which is so critical in career advancement? These are but a few of the questions that remain unanswered.

We do know, however, that the roles and responsibilities of personnel at all organizational levels will change, which will impact faculty and staff recruitment practices and blur the boundaries between administration and other positions. We also know that personnel must be self-directed and that the emphasis will be on diagnosis and problem solving. In such an environment, administrators must be able to understand, efficiently collect, synthesize, analyze data and then communicate the results to all school constituencies. Organizational vision and values are critical. Therefore, administrators must find creative ways to allow technology to handle the routine tasks of their positions to free more time to engage in leadership. Finally, administrators must become at least aware of (and at best comfortable with) virtual communication, for it is now part of the communication landscape. Here on the threshold of a new millennium, we are poised for the next leap in human consciousness: the non-linear, right-brain era (Dent, 1998, p. 185). Are *you* ready?

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End Notes

[i] Teleconferencing refers to two-way electronic communication between two or more groups that are in separate locations via voice, computer means, or video.

[ii] Videoconferencing is a component of teleconferencing that enables participants to interactively communicate visually and aurally with others who are located at remote sites. Videoconferencing systems typically employ compressed digital video to transmit motion images via data networks such as ISDN (Integrated Services Digital Networks) or telephone lines. Although systems may vary, they typically include a monitor, microphone and a speaker.

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