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Paradigm Shifts and E-Training Preparedness

Sharon Weaver Pittman, PhD

Much of what administrators do is broker information. Increasingly, this information exchange is done electronically (e-training). One commonly-used formal mechanism for communicating new information and skills is through formal staff development and training. Numerous calls abound for existing paradigms and procedures in the training and staff development to be critically reviewed for effectiveness (Darling-Hammond & McLaughlin, 1995; Sparks & Hirsh, 1997). Beyond workshops, conferences, and inservice programs, e-training opportunities suggest that administrators explore the utility of technology for real-time staff development (Dunning, Van Kekerix, & Zaborowski, 1993).

Survival requires that we explore what is ahead and how best to prepare for expanded opportunities in e-training. Futuring is risky business and far from an exact science, but there are eight considerations that can guide trainers and administrators in navigating through this whirlwind of change. For the past several decades, frameworks have been proposed to identify changes on the horizon (Naisbitt, 1982). One that has been especially useful is adapted here from Tapscott (1996) for the training in human service milieu. One speculates that significant paradigm shifts impacting future training approaches are: knowledge, digitization, virtualization, innovation/imitation, mediation, immediacy, globalization, and discordance. Each of these requires that organizations transform and technologies adapt to accommodate the shift (Tapscott, 1996). (See Table 1, p. 33.)

Knowledge

Paradigm Shift

In the future we will all be working smarter. More emphasis will be placed on the brain skills and not the brawn effort of employees. Practice application will be increasingly specialized. "smart" tools will be easy to use and offer single point convenience. Learning and knowing become key. Increasingly learning and teaching will be owned corporately, and should academic institutions remain insensitive to market demands, they will continue to lose revenues (Selingo, 1998).

Organizational Transformation

Knowledge work becomes the basis of value, revenue, and profit. Knowledge is recognized throughout the organizational value chain as a significant resource for achieving mission. No longer is sheer effort adequate. Valued are those who work smarter and more efficiently. The most visible differences in our organizations will not be the equipment we will be using but who will be working, why they will be working, where they will be working, and what work will mean to them. Organizational niche becomes key to identifying strengths and strategic initiatives. Outsourcing to necessary specialists will increase.

Training will become increasingly specialized and focused. Single factor solutions will not apply to more complicated and multifaceted problems (Fultan, 1991). Complexities in training will be explored, and new approaches will address the training-in-environment concerns.

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Technological Adaptation

- Increasingly new tools for training will be smart tools developed by highly skilled specialists for self-directed learners. These tools will include management knowledge technologies, expert systems, and artificial intelligence applications that will proliferate to enhance and systematize learning and decision-making.
- Information systems and their predecessor, data processing, evolve into true knowledge systems.
- Smart applications automate data processing and routinize procedures.

Digitization

Paradigm Shift

Human communication, delivery of training and services, and execution of organizational activity become based on ones and zeros. This will enhance speed and will afford much smaller storage units (micro chips). Universal digitization, such as scanning all paper documents and converting to a computer readable or digital form and coding of analog voice-based audio, involves putting everything in the most convenient language for computers. This affords easy and efficient system-to-system linkage for information transfer (Coates & Wolf, 1998).

Organizational Transformation

Information/communication shifts from analog (memos, text, reports, meetings, telephone calls, whiteboard drawings, models, photographs, designs, etc.) to digital. Many meetings will become virtual with video offering greater opportunities for life-like and interactive training. Organizations must arrange strategic budgeting for replacing old and obsolete equipment. Digitization will also require that either staff become techno-savvy of the new equipment or appropriate consultants are available.

Technological Adaptation

- Analog technologies, such as TV, radio, photocopiers, cameras, tape recorders, and PBXs, become high speed and broad band digital.
- Digitization proliferates the use of full-motion video and on-line conferencing.

Virtualization

Paradigm Shift

Physical things/space can become virtual. E-training and services can become virtual services where people can interact on-line at virtual water coolers, where informal chat takes place. Virtual conferences will be where asynchronous meetings/training take place (Shaw, 1996).

Organizational Transformation

The organization expands its physical space onto the web and becomes virtual. Teams become distributed and virtual. Services also become web-based. The "community" becomes virtual and consumers of services are redefined. Skill development and learning will often be self-directed.

Technological Adaptation

- Virtual training tools add new excitement to real-time training. Among these advances are:
- Visualization of data expands and enhances utility.
- Real-time animation offers graphical models for improved training.
- Virtual reality systems provide kinesthetic and experiential feedback.
- Routinized training becomes self-directed.
- Learning will offer powerful trial and error assimilation and experimentation.

Innovation/Imitation

Paradigm Shift

Innovation is the key to success. Rather than traditional drivers of success such as access to resources, human imagination, and innovation become the main sources of value. There will be more effective use of innovation and imitation, as well.

Organizational Transformation

For decades, Peters (1982) has identified innovation as the key driver of successful marketing strategies, products, services, management approaches, staff development, and organizational change. Old rules and approaches fail quickly. The only sustainable advantage is an organization's responsiveness and ability to learn. Benchmarked training will model innovation and will evolve with input and impact evaluation.

Technological Adaptation

Finding and using information becomes an increasingly daunting task. Innovations will be meaningless without data management systems to support and organize automated knowledge and training tools. Some of these necessary applications may be:

- Infostructure and classification systems that will provide a platform for innovation,

- Tools which plumb the richness of the infostructure for multi-media information and knowledge bases, providing ubiquitous access to people and resources, and

- High speed search engines to screen large amounts of data.

Mediation

Paradigm Shift

The gap between consumers and producers blurs in a number of ways. Consumers of training become involved in the actual production process as their knowledge, information, and ideas become part of the product specification process. Collaboration on the Internet becomes a part of the international repository of knowledge.

Organizational Transformation

Consumers of automated training become producers. Human collaboration on the Internet becomes part of the corporate multimedia information resource. Users become designers, creating new software application themselves. Many responsibilities for technology purchasing and implementation are dispersed and then aggregated into a useable whole. Self-managed training will allow learners to control and develop value-added training models to share with peers. Top-down training will become obsolete, as consumers, using cooperative learning formats, develop shared training initiatives (Bellanca, 1995).

Mediated and participatory approaches to training will facilitate grass roots ownership and maximize outcomes. Web-based mentoring will expand resource options for providing support for self-managed initiatives (Eisenman & Thorton 1999).

Technological Adaptation

Mediation will be defined as end-user empowerment. Automation tools to bridge this gap will include:

- New software development tools, object computing software agents, etc., that enable users to create systems and databases, replacing the traditional role of the specialist, much as spreadsheets replaced application development teams a decade earlier, and

- Graphic user interfaces which will involve voice entry and response, enabling natural interaction with tools.

Immediacy

Paradigm Shift

Training systems will be real-time. Training and commerce is networked, instantaneous, and on-site. Communication occurs at the speed of light rather than at the post office or in the classroom (Garrison, 1989). Product life-cycle will be short and will be responsive to change.

Organizational Transformation

Real time interactions offer opportunity for immediately adjusting to changing conditions and situations. No longer is the period training model adequate. Development of staff will be on-going and just-in-time. Bellanca (1995) identifies this developmental model as key to the growth of the progressive organization. The immediate feedback that automated training provides gives administrators and staff useful data for strategic planning and futuring.

Technological Adaptation

Systems will become self-propitiating. Web resources will grow to meet new needs. Computer applications will generate:

- E-training resources that evolve daily,

- Technology to capture information online and to update information banks in real time, giving an accurate picture or enabling the management of a process minute by minute, and

- Real-time scheduling that offers community calendering and scheduling.

Globalization

Paradigm Shift

Knowledge knows no boundaries. As knowledge and learning becomes key, training will be redefined. There will be increased interdependence among organizations and training and interchange will be globalized. Karger and Levine (1999) suggest that the "implications for human service. . . teaching are tremendous. Engaging in dialogue through the WWW with those outside the practitioner's or trainee's own culture or lifestyle can greatly inform a theoretical knowledge base toward the goal of more culturally responsive interventions."

Organizational Transformation

The future of organization enables time and space independence; it redefines time and space for its employees and stakeholders. Work and training can be performed from a variety of locations, including employee homes. The Internet becomes a repository for the time-independent interaction. Networks of organizations cluster to achieve global training and development objectives (Zeff, 1996). Flex-time and work space will be routine. The global corporate network becomes the backbone of the delivery system for support operations.

Technological Adaptation

This globalization requires that automation evolve to:

- Create standards and common formats for real-time communications required when people are not able to reach each other at the same point in time,
- Enable, as appropriate, access to collective information resources from any location, and
- Facilitate simple multilingual communication.

Discordance

Paradigm Shift

Massive social contradictions are arising. New, highly paid employment opposes the inappropriate skills of laid-off workers. Gulfs are growing between the technological haves and the have-nots, those with access to the I-Way and those without it (Karger & Levine 1999).Most administrators and trainers will attest that not all is utopia in the implementation and development of e-training tools. Anyone trying to accomplish the technologically trivial will attest to the feelings of involuntary servitude in just accomplishing the activities of daily professional living. Computers that have been harnessed to improve our well-being often force us to question the civility of automation. One is often tempted to protest the unchecked chaos or withdraw in defeat. Our choice is to be victimized or take a proactive posture for ensuing the optimal outcomes for the adoption of new technologies.

Organizational Transformation

Profound organizational contradictions are arising. Employees are told to "work hard, create the corporation's value, identify with the team and the enterprise," but they may receive little to no opportunity to share in the organizational rewards they create.

Technological Adaptation

Technology will evolve and change to:

- Enhance organizational mission,
- Align and conform to the values of the organization, and
- Address the growing conflict of contrasting computing architectures and competing standards.

Conclusion

Among paradigm shifts in knowledge, digitization, virtualization, innovation/imitation, mediation, immediacy, globalization, and discordance organizations must adapt to ensure survival. The readiness of an organization is indicative of how they have responded to these paradigm shifts as they emerge. Using the adopted Talscott (1995) framework the following organizational assessment tool poses questions that determine e-training readiness. While assessment cannot guarantee success, it can facilitate critical organizational self-analysis for developing strategic responses. Do not despair now; the infotech revolution is just beginning. Dynamic human service organizations and their training and staff development initiatives will soar on the whirlwind of technological change in the new millennium.

Table 1

Training Shift Readiness Assessment Tool

Organizational Readiness Criteria:	Green----------		----Yellow---------------		----Red	
	(Yes, In Place!		Not Sure		No Way!)	
Is the advancement of technology part of your overall strategic plan?	O	O	O	O	O	O
Does the organizational mission that supports equitable use of technology?	O	O	O	O	O	O
Do you have access to technological and training experts?	O	O	O	O	O	O
Is your hardware speed optimal?	O	O	O	O	O	O
Does your hardware have maximum storage space?	O	O	O	O	O	O
Are consumers of training involved in developing training initiatives?	O	O	O	O	O	O
Are turn-key easy to use, icon driven, software tools available to staff and trainers?	O	O	O	O	O	O
Is training self-directed?	O	O	O	O	O	O
Are your organizational boundaries expandable and permeable?	O	O	O	O	O	O
Is flex time and space current work options?	O	O	O	O	O	O
Have you identified key training partners?	O	O	O	O	O	O
Does the entire organization have web access?	O	O	O	O	O	O
Is the organization internally networked?	O	O	O	O	O	O
Have you budgeted for e-training?	O	O	O	O	O	O
Have you enhanced the equipment and support budget lines?	O	O	O	O	O	O
Do you currently conduct e-meetings? (listserve, bulletin board or real-time)	O	O	O	O	O	O
Are your staff and trainers innovative?	O	O	O	O	O	O
Have you developed ethical guidelines for the use and adoption of technology within your organization?	O	O	O	O	O	O

If you scored: 126-96   (You benchmark readiness!)
95-66   (With some effort and resources, you'll be ready.)
65-36   (You'll need to dedicate considerable resources to be ready.)
35-0   (Find cover, the next millennium is going to be a challenge!)

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