Distance Education In The Workplace:
Practical Problems And Sensible Solutions

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Introduction

It was a hot August day in Meridian, Mississippi. The supervisors from the night shift were assembled in the dining room of the local Elks club for an all-day training session. The topic of the training was "building empowered work teams."

John had worked at the plant for nearly forty of his fifty-eight years and had managed to survive an endless string of "workplace transformation initiatives." It seemed to John that the older he got, the less patience he had with "head office garbage."

John tolerated the training for the first couple of hours. When ten o'clock rolled around, with no break and no opportunity to go out and have a cigarette, John stood up and proclaimed, "This is a bunch of crap. We don't need empowerment. We just need to be left alone to do our jobs."

Meanwhile, while John and the other supervisors were being exposed to the virtues of "empowered work teams," the training director and director of human resources were back at the plant talking about a new direction in training being introduced by the corporate offices. The corporate folks were planning to reduce the cost of training at all of the plants through what they were calling "enterprise-wide distance education solutions."

Of course, none of the corporate folks had ever met John. They had no idea that many of the end users would be people who were very much like John. Would distance education be the answer that would be able to bring new skills and competence to all of the employees?

Training directors used to think their biggest struggle was managing the tension between content-centered and learner-centered approaches to instruction. However, the emergence of technology-centered approaches has created a variety of new tensions not previously envisioned. Nonetheless, integrating technology-centered approaches into employee and organization development strategies is currently the challenge we are facing. Whether curriculum designers approve or not, line managers in business, industry, government, and the military are demanding rapid reductions in classroom training with corresponding increases in distance education. And, the assumption that often is the basis for such decisions is distance education is quicker, better, and cheaper! This is the world in which we now live.

Comparing Training Approaches in Business and Industry		
Content-Centered Approaches	Learner-Centered Approaches	Technology-Centered Approaches
• Instruction is defined by the organization • Use existing media to deliver instruction • Learner involvement and motivation are desired	• Instruction is defined cooperatively by employees and organization • Use highly interactive media to deliver instruction • Learner involvement and motivation are essential	• Instruction is defined by the organization • Use highly technical media to deliver instruction • Learner involvement is essential and motivation is desired

In this chapter some of the major challenges will be explored as we move toward distance education in the workplace. For distance education to become a successful and powerful learning system demands that we face these challenges and creatively design strategies to accommodate the challenges.

The Challenges Facing Distance Education in the Workplace

In general terms, the challenges facing distance education applications in the workplace involve the design of the distance education product itself and the circumstances surrounding the implementation of the distance education initiative. Many resources exist that do an excellent job of presenting design ideas and the issues surrounding the development of designs that can be effectively used in distance education. Beyer and Holtzblatt (1998) present a detailed approach to understanding customer needs and designing, through a systems approach, to meet those needs. Iuppa (1998) provides a more technical look at design issues, particularly as they apply to interactive digital media.

Similar books that describe the challenge of implementing distance education in business and industry are not nearly as prevalent. This chapter is concerned with presenting the issues surrounding implementation and ideas and suggestions for effective implementation. So what are the challenges facing the person about to implement distance education in business and industry? Let's look at some of the major issues of implementation.

Homogeneous solutions often fail to meet the needs of heterogeneous organizations – Specific distance education programs are often adopted as single solutions to perceived learning needs within organizations. The result is often a one-size-fits-all situation that is inappropriate to many of the sub-cultures within the organization. For example, the U.S. Navy is considering replacing a residential course that includes problem solving with a web-based offering through "Navy Knowledge On-line." Although the existing face-to-face course is nominally a single offering, in practice, participants are assigned to table groups within each class based on their job specialization - surface warfare, aviation, sub-surface warfare, medical, or some other Navy community. This practice results in fitting the face-to-face problem-solving solutions taught in the class to the needs of the different sub-cultures who are in attendance. Members of each sub-culture, or group of learners, in the face-to-face class work together to customize the content to their unique needs. Such customization is much more difficult with enterprise-wide distance education solutions that are not mediated by instructors and learning groups. However, it is not impossible.

Distance education that is designed to be effective with a heterogeneous workforce demands a strong

sensitivity to the variety of learners who will be involved. Distance education is sometimes viewed in the context of a single mode of delivery when in fact a wide range of learning activities can be implemented quite effectively. Such diversity of learning activities can be effective in helping meet the needs of heterogeneous learner groups. Some of these learning activities can involve web-based programs with high levels of interactivity while others may be little more than books transferred to computer files, or homework assignments periodically sent from a central location. In some distance education activities the performance of the learners is monitored, while in others the learners are on their own. Some distance education can involve cooperative learning through chat rooms while some may attempt to engage the learners in a completely solitary and isolated mode. In computer-based distance education, learners can download worksheets, complete online forms, or be referred to print resources that may be available. And, in some distance education applications learner performance is assessed while in others there may be no evaluation at all.

Reduced opportunities for cooperative learning – Cooperative learning often occurs within the context of classroom instruction whether the instructor supports it or not. Students get together in *ad hoc* study groups. They share information. They talk about class material they may be struggling with. They find reinforcement for learning from each other. The processes and implications of cooperative or "peer" learning are discussed at some length in O'Donnell and King (1999). The authors discuss the ideas of Piaget and Vygotsky and their implications for peer learning. They also consider the implications of peer learning for teaching and teacher education. Techniques for implementing cooperative learning can be found in Johnson, Johnson, and Holubek (1993). These authors discuss the research on cooperative learning, the role of the teacher in cooperative learning, issues associated with group processing and evaluation issues.   There is little doubt that cooperative learning can be a powerful force in employee development. There is also little doubt that the effective use of cooperative learning becomes much more difficult in the context of distance education.

Though there are numerous examples of ways to provide for cooperative learning in a distance education environment, most distance education products developed for commercial consumption are not set up to make use of cooperative learning. The challenge must be to build in appropriate cooperative learning opportunities so that learning becomes powerful. Chat rooms can be added to encourage communication between participants.   Group projects that are assessed or evaluated by an on-line mentor can add substantially to a sense of community among learners and the creation of opportunity for learning in a cooperative manner. Team efforts in an online setting can bring together employees from distant locations who can gain by learning from each other. The concept of cooperation is essential in all well-functioning organizations. It makes a lot of sense to model cooperation by using cooperative learning strategies in distance education.

Course materials are often designed and developed by people who are unfamiliar with the environments in which the materials are to be used – People who design and develop classroom learning materials often have a clear image of a rather specific audience of learners and the classroom experience is designed with that specific audience in mind. On the other hand, people who design and develop distance education materials may not have nearly as clear a view of the learners for whom they are designing the instruction. If their product is to be widely marketed, the actual audience for their products can be much more varied than they would imagine. The opportunity to interact with the learners who will be receiving the instruction is often very limited and it makes the tailoring of learning materials very difficult.   The usual approach to "packaging" instructional materials for face-to-face instruction never works quite so well in a distance education situation. The designer of distance education materials must consider a variety of alternative strategies to provide for the variety of learners that may use the materials. Building in the use of local facilitators, providing of alternative case studies, learning in small teams, and providing resource materials to be used following the distance education session are some of the ways that can compensate for an instructor's lack of

understanding the environment in which the materials will be used.

Lack of meaningful contact between learners and subject matter experts regarding how the learning can be applied – Teaching at the application level in a face-to-face situation is a challenging task. It is much easier to simply dispense information without a concern for actually putting the information to use. However, in business and industry the application of learning is the bottom line. Without application there is usually little support for on-the-job learning.

For distance education to be successful there must be a focus on application. But how can that be accomplished when the person offering the instruction often doesn't "see" the learner? Try including provisions for on-line mentoring or for cooperative learning. Create simple ways for the learners to ask questions – individually and in groups. Have learners participate in distance education programs in the same groups in which they work within the plant. Build into the distance education application problems that are similar to what the learners will be expected to face. Reduce the use of simple-to-correct multiple-choice tests and replace them with more open-ended tests that demand the learner use analytical skills.

In very heterogeneous organizations, the on-line mentor may be completely unfamiliar with the environment in which the application is to take place. General Motors Corporation has a foundry in Northwest Ohio and a large financial services operation in New York. Both groups may be participating in the same distance education session at their respective locations. It would make a lot of sense to involve distance education mentors who are familiar with both locations so that unique questions from the different work sites can be dealt with as they occur.

Lack of on-going support to keep distance education materials up-to-date – Face-to-face instructors in non-academic settings are continually challenged to maintain the currency of the learning materials. After all, classroom participants can make it very uncomfortable for instructors who fail to keep their materials up to date. Face-to-face instructors in business, industry, government, and the military must be responsive to the demands of their classroom participants. The fact that feedback on outdated learning materials, in a classroom setting, is both immediate and forceful creates a very powerful incentive for the face-to-face instructor to continually update and improve the learning materials.

There really isn't a similar demand placed on the distance education instructor. Computers don't feel embarrassment when caught dispensing the wrong information. Unlike printed materials that are always present and available for leafing through and spotting things that need changing, distance education materials are usually hidden away and the instructor in search of things that need changing must purposely pursue each page wherever it is located. When a learner does dash off some feedback about a problem with the instruction he/she often has the feeling hat the feedback has been dropped down bottomless pit with little chance for a meaningful response. After all, when you can't see the learner there is an entirely different sense of accountability when it comes to updating the material.

Even when the instructional developers involved in a distance education initiative are of the right mindset and want to continually update the learning materials to supply consistently high-quality product, the funding for unlimited life-cycle support is usually not available. This is often a function of the distance education course being seen as a solution, not as a tool. Viewing something as a tool implies that it will have to be worked with, changed and improved as time goes by. Viewing it as a solution implies that we can simply buy it, apply it, and forget about it. The investment has been made once and the instruction is expected to last a long time.

Failure to tie the distance education initiative to broader organization development goals – Many organizations have a cherished history of throwing training at problems and imagining that the

problems will disappear. "We've trained everyone in diversity so racism is no longer present in our organization." Or, "Everyone has viewed the training video on 'Safety in the Workplace' so our accident prevention program is complete." This has been a problem with classroom-based training and it continues to be a problem with distance education initiatives. In many ways, distance education has less of a potential to effectively respond to broader organization development goals. Without actually seeing the learners and interacting with them during a face-to-face learning session, the challenge of identifying those broader goals that may need attention is very difficult. It is important for distance education initiatives to link more closely to the organization, make the instruction as real and personal as possible, and provide meaningful opportunities for the employee to provide substantive feedback to the organization through the distance education technology. Though more difficult, it is not impossible for distance education to contribute in a meaningful way to broader organization development goals.

Underestimating bandwidth needs and overestimating bandwidth resources – The term "bandwidth" has become an everyday term since the Internet has become a part of life and it helps clarify yet another major challenge facing distance education. Bandwidth refers to the capability of a site to receive and transmit information. Instructional planners usually begin by taking into account the bandwidth required for delivering information from their site. However, they often underestimate the amount of bandwidth needed because they don't consider the amount of traffic that will be created to manage on-line help, to support chat room activities related to the design of the curriculum, or to encourage direct communication among the learners.

Similarly, planners often overestimate the bandwidth available to individual users. They may assume that most people have the same sort of high-speed Internet connections as the planners have. Or, the learners are able to easily upload complex diagrams or drawings in response to problem sets. They may assume that the various remote workplace sites have the same available bandwidth as the organization headquarters where employing a streaming video presentation would be a simple task. It is essential for the distance education designer/instructor to spend the time necessary to develop a clear picture of how bandwidth affects both the organization's ability to deliver and the learner's ability to receive.

Keeping the kids off the lap while Mom or Dad are "going to school" – One advantage of classroom learning is that the learner goes to a place that is designated for learning activities. This may sound rather foolish, but it can be really helpful to learn in a place specially reserved for learning. You don't have to explain what you're doing – you're going to do some learning. You can leave the distractions of home behind.

A popular aspect of distance education is that it often encourages the learner to work from home. However, there is often little if any assistance provided to help the learner understand the necessity for a special place for learning and then to assist in establishing such a location. Learning is attempted in the midst of all of the distractions that normal, active families can provide.

Managing to complete the learning tasks without alienating family relationships can sometimes be difficult to accomplish. Spouses have needs. The ball game is on the TV. The neighbors just dropped by. Young children just don't understand why Mom is not available since they she is just on the other side of the closed door. After all, Mom has been at work all day and now she is home and should be available.

Instructors can often be motivational forces and establish the relevance of the learning – The need to establish motivational links between the audience and the material to be learned is well established. Morgan, Ponticell, and Gordon (1998) discuss a broad range of approaches to adult education and

training. Many of these approaches involve engaging learners with that which is to be learned. There are many instances where the relevance of a learning activity is not immediately apparent to the learner. This is often the case with learning activities that are required by the employer. In such cases the instructor can provide an essential service to the face-to-face learner by helping to clarify relevance, link to application and generally provide a motivational setting in which learning can occur.

To create a similar sense of response in a distance education environment is often very difficult. It demands that learners be listened to as individuals and not so much as a large faceless grouping of people – usually from varied locations. Personalizing distance education to allow the establishment of a relevance framework is extremely important. More than just asking the learners for feedback, the designer of distance education activities must find ways to challenge the learners to initiate comments, respond to situations and interact around substantive ideas. Using cooperative learning strategies, on-line mentors and enhanced opportunities for interaction among learners can work to motivate learners and help underscore the relevance of the learning.

Distance education is often presented as a one-size-fits-all solution to a host of undifferentiated organizational problems and target audiences – A major company in the distance education arena reports that they have over 20,000 learning objects that can provide 5,000 hours of training to their 3,000 customer organizations. Plus, they suggest that their learning programs can help their customer organizations gain a competitive advantage, improve customer loyalty, increase productivity, reduce costs, increase job satisfaction, and train globally.

That's a rather impressive listing, and it's only a part of the total list! And, of course, there are numerous other providers with similar sorts of promises made regarding the power of their distance education instructional materials.

The reality, though, may be far from that which is promised. And the reason is that the assumption is made that the distance education product is fully responsible for guaranteeing the learning. The reality, of course, is that only the learner can guarantee learning! And without significantly involving the learner in the creation of the distance education situation there may be very haphazard results. If only life could be so simple to guarantee human outcomes in response to nonhuman interventions!

Distance education solutions lack a translator to overcome language problems – The issue of language problems occurs in a number of different ways in training. There are problems of colloquial language or jargon when the training is developed for financial institutions but used in the factory setting. There are problems of value-laden terminology when the training is developed for social workers but used to train law enforcement officers. There are problems of vocabulary when the training is developed for an audience with college level education but is used for an audience made up of people who have not completed high school. Such language problems can have very detrimental affects on learning at a distance.

Taking time to tryout distance education materials on each unique audience is an absolutely essential activity. To distribute distance education materials widely without a tryout can create some enormous problems – especially with language. Using an advisory committee made up of learners representative of your end users can help avoid problems that are sure to crop up later.

Strategies for Responding to the Challenges

Before describing some strategies for dealing with the challenges, a general word of warning is in order. *Although distance education is a powerful tool, there are a number of learning tasks for which*

distance education is simply the wrong approach. It would be appropriate to use distance education to teach **rules of conflict** management but developing the ability to actually **manage conflict** needs to be accomplished in a live classroom where learners can go "nose to nose" and feel the heat of the conflict with real people. Similarly, distance education can be used to teach the provisions of the National Labor Relations Act but developing the skills to negotiate a labor agreement is definitely best done in the classroom where mock negotiating sessions can be held. Generally learning that is at the higher cognitive levels and includes a strong affective component is best accomplished in a setting that is very similar to where the learning will be applied. Such learning does not work well in the more academic setting of distance education.

With the above warning clearly in mind, the power of distance education is so enormous that the desire to deal with the challenges is very strong. To successfully deal with the challenges means implementing strategies that are not only creative but also draw on the involvement of the learner as a meaningful "partner" in the learning environment. The following are some specific strategies for placing the learner more centrally in the instructional process so that the many challenges to distance education in business and industry might be more effectively dealt with.

Incorporate cooperative learning wherever possible so that learners can support one another in understanding the learning content and in figuring out how to apply the content to their lives. There are essentially two categories of cooperative learning opportunity associated with distance education.

> Off-line learning groups – If learners are in the same geographic area they can get together for cooperative support. Those responsible for the learning endeavor can encourage cooperative learning by arranging for meeting space and other resources. Another method of encouraging cooperative learning is to build cooperative exercises into the learning materials.

> On-line learning groups – When learners are in different geographical areas, cooperative learning opportunities are more limited but can still be accomplished through chat room technology. These chat room activities can be managed on an *ad hoc* basis where the learners structure the interaction or specific cooperative learning activities can be incorporated into the learning materials.

Make mentors, or at least monitors, available on-line to help learners use the software and to act as advocates for the learners when system weaknesses are revealed. There are a number of different kinds of support personnel that can be made available to learners in distance education applications.

> Process mentors – These are support personnel who are informed about the learning processes. They may not be experts in the subject matter but they can provide guidance regarding what is expected from the standpoint of instructional design.

> Content mentors – These are the subject matter experts who can answer questions about the content of the instruction. They can also direct learners to resources so that self-managed learning can occur.

> Applications mentors – These support personnel can provide learners with help in managing the software applications that are required to make the distance education possible.

Analyze the intended group of learners carefully and consider making several versions of training materials available to sub-cultures within the learner population based on experience, values systems, educational level, and so on. Of course this approach is expensive because it involves a number of activities.

Identify relevant sub-cultures – The first step is to examine the intended audience to identify all of the relevant sub-cultures. For large, heterogeneous organizations that are geographically dispersed this can be a difficult undertaking but the consequences of not doing it are harmful to the organization.

Conduct differential formative evaluation – Formative evaluation involves testing learning materials on samples from the intended audience before the content is in its final form. This process can assist in demonstrating the validity of the content. A target audience that is very heterogeneous suggests the need for multiple formative evaluation activities in order to ensure that the content is valid for the various sub-cultures within the audience.

Develop parallel forms of the instructional materials – Of course, differential formative evaluation is without value unless the findings are translated into differential content. All parallel forms of instructional materials should accomplish the learning objectives but don't necessarily have to use the same instructional strategies to do so.

Provide users with tips on how to manage the problems associated with working at home. There are materials on the web and in books that discuss this issue. For example, Sandy Anderson's book "*The Work at Home Balancing Act: The Professional Resource Guide for Managing Yourself, Your Work, and Your Family at Home*" provides many useful ideas. Examples of these tips include:

The need for interaction with other learners – Find out who else is participating in the learning activity and set up *ad hoc* learning groups.

Managing boundary issues with family members – Negotiate with family members to clarify your needs and their needs and how both sets of needs can be met during "learning time."

Personal time management issues – Schedule the learning session in your calendar the same way you would any other activity and then stick to the schedule

Absence of learning through class discussion – Some of us learn very effectively through listening to and participating in class discussion. This absence can be partially compensated through the use of chat rooms, emails discussions or phone conversations with other learners. If that is not possible, talking about the issues with co-workers or spouse might help. (Anderson, 1998)

Incorporate motivational content into the distance education material. This should help the learner understand how she or he can benefit from the content. Taking this step will not replace the motivational instructor but it can help. The following are some examples of motivational content:

Stories about how the ideas presented in the learning materials are being used in other organizations.

Ideas about how the material can improve the success of the learners' organization.

Suggestions about how the information can make the learner's job safer, easier, or more satisfying.

Be careful about purchasing a bushel basket of courseware to replace residential training offerings. Each distance education product should be individually examined for appropriateness in terms of the following:

The learners – The material must be appropriate for the learners including sub-cultures within the intended audience.

The content – The content must be complete and accurate and must support application to the actual jobs being performed.

Life cycle support costs – The cost of life cycle support for one course may be entirely appropriate whereas the cost for the next course on the list might be unreasonable.

The longevity of the material – If the content of the training is perishable, distance education is probably not a viable solution.

Is the subject matter something that requires a classroom approach rather than distance education – We've returned to the idea that started this section. If the learning objective requires real-time, face-to-face interaction between learners and classroom facilitators, distance education approaches should be rejected.

Be realistic in estimating bandwidth requirements and availability. These estimates should take the future into account as well as the present. Although we exist in a graphics-rich environment, resist the temptation to load up on graphics that create large files that are slow to load.

Be careful about assuming that "blended training solutions" are really blending. Like oil and water, dissimilar approaches may simply not mix without a lot of attention to emulsifying strategies. Monitor outcomes carefully and continually. Some of the monitoring issues include:

Specify what outcomes are expected from each of the blended solutions. It is difficult to determine whether all learning objectives have been covered unless one specifies all of the objectives and maps learning content and strategies to each of the objectives.

Determine exactly what outcomes are to be monitored. This involves translating learning objectives into observable phenomena capable of being monitored.

Determine how selected outcomes are to be monitored. Establishing an appropriate metric to represent the desired outcome to be monitored is often a challenge in itself.

Learner-monitored outcomes. Consider the learners as a valuable source of data. They will be able to describe the extent to which the various blended solutions fit together to create the desired cognitive and affective gestalt.

When considering purchasing distance education content, envision the life-cycle support requirements, plan for the support, budget for the support, and, most importantly, provide the support. This will increase the apparent cost of distance education and make that cost closer to the actual cost. There are a number of cost factors that should be considered.

Content revisions– It is frequently necessary to revise training materials because of changes in technology, materials, processes, regulations, and so on.

Upgrading because of IT systems capability – It is often the case that training materials developed just five years ago do not run very well on today's equipment and operating systems. Despite this obvious limitation, development of distance education materials is frequently amortized over a much longer period.
Live support – The need for support from mentors, subject matter experts, computer applications personnel, and so on was discussed earlier. These support requirements will continue throughout the life of the distance education project and should be included in life cycle support budgeting.

Consider all learning initiatives, not just distance education, within the context of broader employee and organizational development interventions. This provides for broader, more systemic solutions with increased probability of success. The kinds of organizational development interventions that can and should be linked to learning initiatives include:

> Needs analysis – This should not be limited to training needs analysis but should include all of the organizational needs that might impact the desired end state for which the training is being considered.

> Training situation analysis – Training occurs within an organizational context. One can't predict the outcome of training without understanding that context. An environmental scan can be used to identify all of the forces that may support or impede the training so that supporting forces can be maximized and impeding forces can be minimized.

> Strategic planning – Wherever possible, training should be linked to the strategic plan of the organization. The link may not be immediately apparent because strategic planning is macro while much training is micro but, the link should still be present.

> Tactical planning – Relating training to organizational tactical plans makes it much easier to get funding for the training. It also reduces the perception that training interferes with mission-critical activities.

Root cause analysis – It is too often the case that training results from a "knee-jerk" response to a problem. Root cause analysis techniques that are used for quality management initiatives can be applied to training analysis with highly beneficial results.

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