Reducing the Cycle Time of Training and Development in Organizations

by

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Intellectual capital is becoming one of the most important assets of a company today. Speed at developing and deploying that capital is critical in today’s business environment. This article examines various methods to reduce the cycle time of the employee development process. Each step of the process is examined: analysis, design, development, implementation and evaluation. Technology applications and new ways of thinking provide numerous opportunities for cycle time reduction. These methods must be applied thoughtfully, however, if the rigor and quality of employee development is to be maintained.

It is often heard in business circles that the next decade will be the decade of the knowledge worker. With the rapid flow of information today, there are few long-lived competitive advantages for a corporation. New business processes and technologies are quickly analyzed and mimicked by the competition (Pfeffer, 1994, 1998). As business processes and systems continue to trend towards standardization, less organizational emphasis will be placed on in-house development of core systems. Some have posited that the only real competitive advantages left for an organization are in the realms of knowledge and intellectual capital (Stewart, 1997).

Knowledge management is gaining as a key competitive initiative within many firms. New methods to value and account for the intellectual capital of a company are now circulating (Edvinsson and Malone, 1997). These accounting methods complement, enhance, and in some instances, replace more traditional practices focused solely on financial measures, cash flow, and capital assets. Other firms have named “Chief Learning Officers” or “Chief Knowledge Officers.” Often reporting to the CEO, these officers are charged with managing the company’s knowledge assets, as well as emphasizing the importance of continuous learning and shared knowledge (Stuller, 1998). In short, the knowledge that a worker brings to the table in today’s business environment is becoming more and more valued.

Intellectual capital, like other types of capital, can be acquired by a firm in a few different ways, the most common two described by the old classification of make versus buy. Buying knowledge, through employee hiring, is becoming more difficult. The historically tight labor market and documented skills gap make hiring the right people with the necessary skills directly out of the labor market exceedingly difficult. This is especially true in technology-related industries and job families, like engineering and information technology.

Due to these conditions, companies are finding that more frequently they have to “make” intellectual capital through hiring individuals with the ability to learn, and then developing them into the job. This puts tremendous pressure on organizations to rapidly increase the new employees’ skill and knowledge base.

In order to develop and maintain a lasting competitive advantage based on employees’ skills, it is critical that competitors should not be able to
simply duplicate these skills. Thus, training, and training focusing on company-specific skills, will be more likely to result in an advantage that competitors cannot easily copy. Moreover, the process of building competitive advantage is self-reinforcing. Not only do employees become more valuable after training, but employees who see that their employers are willing to invest in training are less likely to leave the company, taking their knowledge with them (Schaaf, 1998).

Cycle Time and Employee Development

Employee development is a time intensive activity. Employee development does not only refer to training, although training, both formal and on-the-job, makes up the bulk of employee development. Employee development can span the gamut from job aids to computer based wizards to self-directed discussion groups. Each of these techniques requires a significant commitment of time and resources to produce a quality product that will improve knowledge and create behavioral change within the firm. Unfortunately, time is precisely what organizations have less and less of to devote to employee development activities, which can result in a lack of funding or poor effort.

The field of human resource development has long struggled with a dilemma when it comes to developing employee training. On one side of the dilemma, designing and delivering instruction requires a rigorous, systematic process to create a quality program that addresses the right needs for the right employees at the right time and with the right method. When a solid process is not followed, it is easy to do the wrong thing, like creating a training program to change undesirable behavior when motivational factors are the real cause of those behaviors.

On the other side of the dilemma, human resource development functions are often under tremendous pressure to produce quick results. Gaps in employee knowledge can easily bring business processes to their knees. Given the labor market today, employers are increasing their reliance on internal development functions to span any gap that might exist between a new hire’s knowledge, skills and abilities and what the organization requires for success. Indeed, one of the biggest limiting factors in the current business expansion within the United States is not capital. Investors around the world are vying to play in the best performing market around, and venture capital is easily found. Instead, the limiting factor is finding enough skilled employees in a national labor market with unemployment consistently under 5 percent.

Some human resource development professionals are caught between the organization’s need for speed and their professional obligation to do things right. In this article, we want to discuss some methods that can be used to decrease the cycle time of training, while maintaining rigor and validity. It is important to note that we recognize performance improvement to be broader than just training, but the focus in this article is the training process.

Instructional Systems Design

During World War II, many instructional psychologists faced an important national challenge: training thousands of citizens in a short period of time in a consistent and quality manner on the technology of war. Out of these pressures sprang the first attempts to rigorously systematize a training process. The results were a process which covered all aspects of instruction, from task analysis to evaluation, and came to be commonly referred to as the instructional systems design (ISD) model (Goldstein, 1991; Saettler, 1995).

The ISD model has undergone various interpretations and revisions over the years, but its core remains generally the same. The term ISD is not as common as it once was, and the generic instructional design process is more commonly referred to today as the ADDIE model, which stands
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for analyze, design, develop, implement and evaluate. The process steps can be seen in Figures 1 and 2. A brief description of each step follows.

**Analysis**: Perhaps the most important step in the training development process. It is at this point that an instructional designer determines whether or not the performance issue being explored really is a training problem, and if so, what an appropriate intervention would be to correct this problem.

**Design**: When building a house, one first draws blueprints before laying the foundation and erecting the walls. The same is true of building training programs. The instructional designer first lays out in some detail what the training program will look like. What are the behavioral objectives, what is the instructional method, who is the audience, what instructional media will be used, etc.

**Development**: After creating the design document, the instructional designer must then begin to build the materials. This involves creating any lesson plans, trainee materials, CBTs (computer based training), instructor materials, job aids, etc. It is at this phase that the “bricks and mortar” of the program are laid.

**Implementation**: Delivery of the training program. This step involves actually delivering the content of the program to the learner, through whatever delivery methodology has been chosen. This might involve putting a CBT out on the corporate network, or delivering a lecture in a classroom.

**Evaluation**: An often overlooked, yet essential step in the training process. Specifying and collecting appropriate measures to determine the effectiveness of a training program provide valuable data to improve the program, justify cost, or demonstrate change in behavior.

Each of these process steps is important in the creation of an effective training program that will improve individual as well as organizational performance. Unfortunately, this process can also be very time consuming, impacting the rate at which an organization can begin to benefit from results. What training departments need are sound methods for shortening the cycle time of the training development process, while not sacrificing validity and quality of the output. Here are several suggestions for each step of the process.

**Analysis**

Analysis is by far the trickiest step in the training development process. Two scenarios are common. In the first scenario, the analysis step is either skipped entirely or done poorly. This often occurs when training is demanded by a senior executive who has not thought through the root causes of a performance problem. Training is easily abused as the cure-all for organizational ailments.

For example, in a very large, fast growing computer services company in Minnesota, a new division executive fired his entire sales force to save money on compensation. He then immediately turned to human resources for a fast-paced training program for new-hire sales staff that would create the same level of “seasoned professional.” Obviously, there is much more to sales effectiveness than a training program is going to solve, no matter how well developed and implemented. There are product advantage and price, client networks, industry

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![Figure 1. The Training and Development Process](image-url)
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experience and personality to consider as well. Not surprisingly, the training program did not succeed, and the company lost its position in the marketplace.

The second scenario, which can be just as deadly, is when the analysis phase is taken seriously, but it takes too long, resulting in diminished momentum for the performance improvement effort before the design phase even begins.

The development of competency models, an activity being pursued in many organizations today (Parry, 1998; Zemke and Zemke, 1999), is becoming a classic example of this second scenario. An organization sets out to develop a competency model meant to serve as the foundation for employee development. Much time and money is spent on developing and validating the model. By the time the organization has a model that everyone can live with, the focus of the organization has shifted and the model sits on everyone’s shelf in a nice three-ring binder. This really shouldn’t be much of a surprise given that most competency models can be one to two years in the development and validation phase (this doesn’t include using the model for what it was intended for in the first place, like employee development).

Indeed, many predefined competency models exist for just about all job positions and job families including IT, training, sales, executives, supervisors, etc. By using the predefined inventory of competencies, the training department saved significant time and money in the development of the competency model, allowing them to move more quickly to the implementation phase.

Limiting the SME Pool

Often, much time is spent during the analysis phase with interviews of subject matter experts to uncover what the root cause of an organizational performance problem is and the necessary skills that need to be addressed through training. Anywhere from 5 to 15 interviews might be conducted, after which the data is transcribed and content analyzed for trends. Depending on the situation, however, much time can be squeezed out of this process step.

In some situations, it is important to involve many “end-users” in the analysis phase. For instance, if the development effort is one in which significant organizational change will be a primary focus and that change is somewhat voluntary, then it is critical to involve a large segment of the affected audience to create buy-in and support of the effort. Implementing sales force automation systems are a good example. Rarely are these systems simply thrust upon the sales force, or should they be. The sales force typically has some say as to whether they use at least some components of the system. Consequently, it is a good strategy to involve the sales force in the development of training, so there is a sense of ownership in the process.

Many other employee development efforts, however, do not require this level of organizational support. Most technical skill development efforts...
do not have to be energetically supported by the work force, but are simply a reality of the process work that they must do. And in many cases, employees actively desire this type of training (Schaaf, 1998). Consequently, one can analyze training requirements by referring to only one or two highly skilled subject matter experts, instead of relying on more time intensive processes like surveys or focus groups (Zemke, 1998). This way you get only the information you need in a timely and cost effective manner.

Training needs analysis is an important step in the overall training process. And, as discussed above, it can be completed in a rigorous manner while saving invaluable time as well.

**Design and Development**

The design and development of training is as much art as it is science. There are general guidelines which exist to aid the instructional designer in creating an educational situation which is most appropriate for the learning task at hand, but a lot of creative energy goes into creating a solid design which will ultimately be effective.

Instructional design can be compared to writing a computer program. The programmer specifies the course requirements or objectives, drafts an outline of a logical flow which will fulfill those objectives, begins to fill in the various details within that flow, and then tests for effectiveness. Object oriented technology has greatly improved the cycle time for creating effective computer applications. That same thinking can easily be applied to instructional design.

For example, there are activities in training which occur over and over again, somewhat like dialogue boxes in computer applications. Some instances of these instructional “objects” are exercises, ice breakers, group activities, review, learning evaluation, and so forth. In order to reduce the cycle time in the design and development phases of instructional design, progressive training departments keep libraries of instructional objects that they can pull from, instead of creating everything from scratch (Clark, 1998).

If an instructor needs a group activity designed to rehearse information to improve retention, then there are a number of such activities already developed within a “group activity library” which can be drawn from. This seems like an obvious way to improve cycle time in instructional design, but it has been our experience that most training functions either do not have “object libraries” or they are not organized in a way that facilitates ease of use.

Some software is currently on the market that automates the design process and accommodates object libraries. Designer’s Edge, marketed by Allen Communication in Salt Lake City, Utah, is one such program. This software takes the instructional designer through the design process, asking pertinent questions and making recommendations along the way. Incorporated into the program are standard objects like instructional methods, exercises and tests. Creating an instructional design using this type of system can decrease cycle time and ensure consistent quality standards.

**Implementation**

The implementation phase of instructional design is where the proverbial “rubber meets the road.” By far, the most common form of implementation today is the traditional instructor-led class. Training & Development, one of the leading publications in this area, conducts an annual survey of the methods and media that major corporations use today, and instructor led courses consistently appear at the top of the list, accounting for well over half, up to 80% of training activities in 1997. Confirming this
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Evidence is a 1998 survey conducted by Training, that found that 70% of training was delivered in instructor-led classes.

Unfortunately, instructor led courses also suffer from one major drawback; they are one of the most time consuming methodologies to use. It is not that instructor led courses are inherently lengthy. It takes the same amount of time to present information in a classroom as it does on videotape or CBT. Instead, it is the logistics involved with developing and delivering an instructor led class that increases the cycle time of the process. One example of a logistical problem associated with instructor led training that tends to increase cycle time is scheduling. Anyone who has tried to schedule a medium to a large group of mission critical employees for a half-day at the same time knows the futility of the exercise.

There are several things that a training department can do to decrease cycle time in the implementation phase of training. We would like to focus on three in particular.

Use Anytime, Anyplace Delivery Vehicles

Improvements in technology have greatly increased the options for the delivery of training. Advances in processing power, network bandwidth, graphics and multimedia have created a computing environment which can support high quality computer based training. Computer based training, like other self-paced delivery media, has an advantage over instructor led training in that students can access the material at any time, any place. This has the potential to decrease cycle time if harnessed properly.

Cargill, Incorporated, a large, mid-west agribusiness company, achieved significant time and cost reductions through the use of computer based training. In order to retool its entire IT function and move from a mainframe based to a client server, open systems based architecture, Cargill mandated 150 hours of education per IT employee, 100 hours of which consisted of computer based training. The estimated cost savings of using CBT instead of instructor led was $3,500 per person or about $4.2 M. Cycle time was greatly reduced as well as the impact on business processes because students could go through the CBTs on their own time. This program was implemented without a sacrifice in quality. All students were required to score 80% or higher on a knowledge based exam.

Streamline the Delivery Process

It seems that most training companies like to operate under the assumption that it takes some multiple of one-half day to deliver a class. The typical instructor led, off-the-shelf training program will take one-half day, one day, three days, etc. Frequently, close examination of these programs reveals that much of the time is spent on irrelevant material or exercises that turn out to be a waste of time.

One technique that we have found particularly useful for saving on the implementation phase of training and development is to focus on the core points and strip out unnecessary materials. For example, a colleague in our department was looking for a good negotiation course for information technology staff. Several vendors offered programs that lasted from one to three days. Examination of these programs revealed that the core points could effectively be taught in two hours, without sacrificing the quality of the content. Evaluations of the course indicated that the course was strong, and that the audience appreciated the flexibility provided through shorter course times.

Reject the Training Paradigm and Move Towards Performance Support

Even when using anytime, anyplace delivery media, training itself, as traditionally conceptualized, is a
time intensive activity. Sometimes, employees don’t need a comprehensive training program to address their performance problems. Perhaps they just need one piece of information to help them overcome a hurdle to operating a machine or solving a problem.

The idea of performance support is to provide only the information needed, when it is needed, at the place it is needed. Performance support contrasts with training in that it is more focused and directly applicable to the task at hand (Galagan, 1994). Perhaps one of the best examples of performance support is the Microsoft Office application environment. When you are working on a Word document, the application will monitor your performance and provide support when needed. Sometimes this support is transparent, like when Word automatically corrects a spelling mistake. Sometimes the support comes in the form of “wizards,” which take you step by step through certain procedures. Online help and tutorials are also types of support Word provides. Another example is the concept of “just-in-time mentoring,” where company experts and their fields of expertise are publicized on an intranet, making their expertise available for immediate access (Stuller, 1998).

The California State Automobile Association (CSAA) greatly benefited from implementing performance support instead of traditional training. After experiencing long delays for customer support representatives to resolve call-in inquiries, CSAA implemented an on-line support system which provides just-in-time information. After implementing the system, support reps committed far fewer errors, which resulted in less rework. The association estimates that the return on investment will be 300% over the life of the system (Lucadamo and Cheney, 1997). This paradigm contrasts sharply with the traditional training paradigm, in which you sit through a half-day course or spend a couple hours at your computer working through a CBT. Performance support environments can drastically reduce the cycle time it takes to make employees proficient.

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Figure 2. Training and Development Cycle Time Reduction Techniques

*Evaluation*

Evaluation is an often-skipped step in the training and development process. This is unfortunate, given that evaluation of training can provide valuable information regarding effectiveness and efficiency to guide the next training cycle. One of the reasons that evaluation is often neglected has to do with the
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Administrating and collecting participant reaction surveys at the end of a training program is relatively simple, but it is much more difficult and costly to determine if training is applied on the job and is making a significant organizational impact.

Once again, the technology inherent in computer based training provides some options for reducing the cycle time and cost of the evaluation phase. For example, imagine an employee who is taking a computer based training course on typing. During each lesson, the program monitors performance and keeps relevant statistics, such as number of errors, words per minute, accuracy of each hand, etc. The student studies the evaluation report and makes some decisions about what he should focus on next time. Additionally, an expert system within the CBT makes some suggestions based on its interpretation of the data.

Texas Instruments (TI) created an automated evaluation system to make it easier to collect data from its classes. The company’s experience with traditional evaluation methods was that they were costly and took a long time to conduct. TI’s evaluation system, which utilized e-mail and a database management system, automatically distributed, collected, analyzed and reported on class evaluations, thus saving significant time in the process (Overmyer-Day and Benson, 1996).

Some Warnings

We firmly believe that organizations can reduce the cycle time of the training and development process without sacrificing rigor and validity. In this article, we have provided many ways in which this can be achieved. However, it is important that the quest to develop employees quicker and quicker not be blindly applied at the expense of quality.

Soft skills training provides a good case in point. In the entire process of creating a training program on interpersonal skills, for example, there are places where the cycle time may be compressed and others where it can not. Interpersonal skills training is pretty standard fare, so one could probably save some time in the analysis and design phases. But compressing the time taken for delivery would be more difficult, given the nature of the content. Self-paced CBTs are notoriously ill suited for soft-skills training.

Conclusions

Employee development is becoming more important in today’s economy. How companies manage that development will affect their ability to compete successfully in the marketplace. In this article, we have presented numerous suggestions for decreasing the cycle time of the training and development process. By applying these and other techniques, you will be better positioned to keep your work force current, competent and competitive.

References


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