CHIEF'S FILE CABINET

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Training on the Desktop

Training used to be so simple. You had a person called an instructor, who taught subjects to a group of people called students. It didn't make much difference if it was on the drill tower where the training officer lectured, or whether it was in a firehouse where the company officer delivered the material. There were textbooks, techniques of instruction and then there were tests. You passed, or you didn't.

That was then. If you are now involved in the training and education of firefighting personnel today, not only is the toolbox is now much larger, it's much more technologically enhanced and there are a lot more requirements that must be met. The depth to which an officer or an entire department uses technology to expedite training may well determine both the short and long range of effectiveness of its personnel and its programs.   The use of that technology to achieve compliance with training requirements is also critical because we have less and less time to train for more and more topics.

If you are one of those persons who is responsible for developing a departments training program it might be time to look at some of the emerging concepts that are impacting your delivery system to see if they will help you justify an increase use of technology in overcoming the obstacles that exist of reduced time and increase requirements.

You will note, I didn't say these were necessary new concepts, they are merely emerging. Some of the information in this article is fairly mature in the field of professional training and education practitioners, but have only recently been identified as useful to the fire services.

The concepts we are going to review in this article are:

- continuing education
- distributed learning
- blended learning
- just –in-time training
- long distance learning

The concept of continuing education is not really that new of an idea. It is a simple concept. Once you have received training and education in a specific topic the idea is that you should have an on-going exposure to that subject for as long as you are practicing in that area. CEU's are common in other professional areas of expertise, such as medicine, law and aviation. So what? The fire service has been practicing the idea that one needs on-going reinforcement of acquired skills since the early

1920's. Otherwise how can we explain the fact that we have a requirement to conduct on-duty training exercises almost every shift that a crew is on duty? Rookies and veterans alike participate in a daily reinforcement of past knowledge and skills.

But the CEU concept is more than reinforcement. It is designed to re-train, and re-educate. The term has become specifically linked with specific bodies of knowledge in the fire service such as emergency medical services and hazardous materials. Most importantly it has become linked with programs that are classified as certificate programs.

And therein lies the first red flag that the fire service needs to be monitoring. If a program is created with a CEU component, it creates a long-term commitment for the individual who acquires it. If your organization requires it, there is a cost consequence to someone. In either case continuing education is a two edged sword. On the one hand it does promote an ever-increasing body of knowledge so that an individual's expertise does not become static. Conversely it places a lot of demands upon the delivery system to remain capable of meeting timelines, deadlines, and accountability issues.

The next concept we are looking at is called "distributed" learning. Again, this is not really all that new, but there are new implications. When I was giving instructor orientation, I was introduced to a concept called "the apperceptive" base. Simply stated, you develop new skills based upon previously acquired ones. Sounds simple, but again it isn't.

A good example of distributed learning from many of our careers is the concept of a recruit academy. Two or three decades ago there was an assumption that the entry level firefighter had a solid background in how basic tools worked. We assumed a lot. We didn't have to teach an entry-level person how to use the tools per se, but rather gave them training on how to use them to perform a fire ground task. To some degree that has changed with the current candidate pool. Not necessarily everywhere, but significant numbers of entry personnel today are not well versed in manipulative skills with tools. This is where distributed learning comes into view.

This concept is based upon the need to clearly identify, the exact sequence with which a training program exposes individuals to increasing complexity in skills and abilities. For example, one fire department in southern California has now modified its recruit academy curriculum to include classes on how to properly use some very basic tools; hammers, saws pry bars, chain saws, etc. This is to develop the ability of recruit fire fighters to use these tools in specific operations such as automobile extrication or ventilation classes.

Distributed learning is a conscious effort by delivery system designers to have complex operations supported by several more basic operations. The distribution of that training, therefore, is based

upon assuring that no candidate is expected to perform any function tell they are ready for it.

Blended learning is another concept entirely. The short version of blended learning is that these are many different ways of teaching a subject. Most instructors already recognize that individuals respond to different teaching techniques and media in different ways. Blended learning is a concept that attempts to match the media with the motivation, therefore, resulting in a student having the highest possible chance of successfully acquiring the desired knowledge or skill.

The blended learning concept anticipates that no one style of teaching reaches all audiences. This has also been recognized for years. However, blended learning goes even further by recognizing that learning is not always a function of formal instruction. Blending learning recognizes peer-to-peer training, mentoring, and other non-traditional systems. This includes a rapidly increasing appreciation for self-paced learning and long-distance delivery system.

In addition to broadening the methods of acceptable learning methods, blended learning also places an emphasis upon accountability and evaluation.

The last concept in this evolution chain of learning processes is called just-in-time training (JIT). As the name implies, it is training that is delivered just before it is needed.

This concept is based upon the need to provide appropriate but time-sensitive material. In the classical fire service sense: it is basically tactical or very new information and/or very specifically focused upon a requirement that can be addressed fairly quickly.

JIT is not an easy concept to apply at the micro level of fire service training and education. It requires a more broadly based delivery system than individual fire agencies can usually develop or sustain. Nonetheless, it is a concept with merit. Just take one example from current issues facing the fire service today of terrorism: disease control. There are very specific topics that all firefighters probably need to know more about such as inoculation, or dealing with specific threats, such as anthrax threats that are not found in normal curriculum. The topics are needed at this time, but may not be readily available at a local level.

Therefore these concepts, continuing education, distributed learning; blended learning and just-in-time training are all relevant to the current conditions faced by most fire fighting agencies. What is more of an issue is the degree to which fire agencies can or cannot adapt their delivery system to utilize these concepts. There is a major challenge for the fire service to achieve success in this area.

The reason is encapsulated in the following description of the fire service. There are reportedly 30,000 + fire agencies in the U.S. This number changes with the publication of each national

assessment. There are over 90,000 separate fire stations. Again, this is an estimate, because no one database identifies all types of fire delivery systems. There are three types of fire agencies; full-time, combination, volunteers. There are hundreds of different governance models ranging from privately held fire agencies to the federal governments investment in the department of defense and wild land fire agencies. There are towns, cities, counties and even state fire agencies

Our training and education system is equally complex. These agencies utilize a delivery system that uses everything from the company officer in a neighborhood fire station to do daily training to the universities and the National Fire Academy to delivering content and to provide a framework for professional development.

A big challenge for the fire service is to be able to design and implement a system that will meet the various needs of such a complex system of delivery. And, there is almost total acceptance of one reality. No one system can do it all. The corollary to that statement is that ALL systems can be used to meet some portion of the requirements. The more successful agencies are those that can identify and utilize: best practices" so that everyday elements of the learning concepts described previously are part of the system design.

The term "life-long" learning is truly a real goal for the fire service, for we are to remain competent in an ever-evolving societal structure. The fire service is truly an entity with an opportunity to evolve itself through the use of adult learning theories, but with two feet firmly planted on the ground.

The last concept to be explained in this article is only one of the tools that are needed in evolving that fire service response to a changing world. I have provided the previous concepts to establish a baseline for use as part of the planning factors to be addressed by any fire service agency that is attempting to remain current. Reflecting back on the complexity of the fire service and the use the four educational concepts it is easy to see that the design of any system is dependent upon access to a constant flow of is subject matter that meets the departments need for high priority and high impact information.

Moreover, the fire service has a need to remain competitive with other public safety and governmental entities in the future. More and more of the learning of the workforce is going to have to be based on a delivery system that engages the learner and is so relevant to their job that the material must be needed information. Training programs that are based on that criterion, rather than be merely a certain period of time spent on a topic are going to be much more important in the future. .

One solution is for a fire agency to employ long distance learning (LDL) techniques as a viable part of

the department career planning process.

Long distance learning is another simple concept with a complex framework. At its simplest LDL is two remote locations communicating with each other regarding information requiring a topic. One site is providing that information, they are the instructor; one site learning about the information. They are the user; the student. Time and distance are overcome by the speed of the electron. That's the simple version. In reality delivering long distance learning is a very complex system that requires a high level of knowledge in both subject matter expertise and the technology of delivery.

Very few local institutions possess both capabilities. Yet, most fire agencies have a many training needs that can be met through the use of long distance learning. Unfortunately, many do not recognize that the system can help them, nor do they realize that the need is unfulfilled.

Just for the sake of discussion I would like to raise one issue right now. Many individuals will respond to the use of LDL by raising an objection called cost. So, we should deal with that right now. Training and education does costs. But in today's environment not training has a cost also. In the first place, LDL can be a cost containment decision. When it is used for specific topics it can replace the costs of travel, per diem, overtime to cover positions that must be refilled on overtime and so forth. Lastly, the cost of not training is a potential liability that can be reflected in disciplinary problems and even poor organizational performance

If you reference back to the description of the previously described concepts of continuing education, distributed and blended learning, in the context of the demographics of the American fire service you probably recognize one of our greatest deficiencies; we are a diverse, geographically distributed, complex profession with a training and education system that has the same attributes.

Almost every fire department in the country has training needs. From the metropolitan areas to the smallest volunteer departments fire chiefs face an unwavering demand upon their ability to react to problems; respond to emergencies or cope with consequences.

So what, you might say. It's been that way for decades. The difference now is that LDL technology can provide one of the potential solutions. And, not unlike other technology that we have adopted from our overall role in society; it is already tried and tested by the private sector. In an article entitled "Blended Learning;" the processes, solutions and best practices of leading organizations, produced by the Music Center; a learning and technology e-lab and think tank (818)350-2200) case studies of how these concepts have been applied to the private sector provide some insight. The industries represented are a lot like us, geographically challenged, complex workforce, complex subject and the need for timely updates.

The private sector has already applied these concepts. It's time for the fire service to seize the initiative. And, we have. The latest issue of Government Technology e-learning newsletter (10/10/02) identifies a whole series of programs available on the internet.

The Texas Fire Chiefs Association (www.texasfirechiefs.org) has recognized the need for supplemental course delivered to fire agencies on-line. FETN operates Primenet on-line training system. Many community colleges have implemented on-line courses to reinforce the needs of their local fire service. Wooster Polytechnical College has announced a recent LDL offering

The fire service has no real excuse. The technology is readily available. What is often lacking is the imitative to use it. The first thing that must be overcome to use it effectively is to understand the basic tools for accessing long distance learning.

First, the system requires computer technology. Typically a user of LDL must have a minimum system and operate under specific settings. The following is one such set.

Operating system: Microsoft Windows 95, 98NT or 2000
Internet browser: Microsoft Internet Explorer version 4.0 or
Windows media player version 6.4 (forwin 9 or nt) or version 7.1 (for windows 98, 2000 or windows ME)
Internet connector of at least 33.6 KB
Processor: Pentium 166 or compatible (Pentium II 233 or higher recommended)
RAM 32 (128 MB or higher recommended)
Monitor VGA
Screen resolution 800 x 600 (1024 x 768 recommended)
Color settings 16 Bit high color (24 Bit true color recommended)

A few years ago that list would have been like reading a foreign language to me and perhaps it still does to some of you. But that is a description of a very basic computer capability that almost anyone anywhere can obtain. You can even rent it from some of the major office supply companies, such as Kinko's.

Among the greatest or the weaknesses is the issue of motivation and discipline. Let's admit it right now; e learning can easily be deferred when other events are pressing.

There are already many things competing for the time of the student. And, it is also true that many of the efforts to use LDL in the private sector have failed to inadequately plan for failure to follow-up on the accountability of students.

Another weakness that I believe needs to be recognized is that e learning cannot be utilized as a sole source; it must be part of a program of distributed and blended learning. And that requires planning and system design. Just throwing a requirement for a person to take an on-line course does not make it an effective contribution to the person's overall competency.

And lastly one inherent weakness of long distance learning is the fact that it does not work for everyone. Remember that learning styles vary almost as much as instructor or leadership styles. It may not be available option with everyone.

In summary, LDL is a tool. It is a tool that helps almost any fire agency; small to large, improve upon the knowledge and abilities of its employees. It can overcome the limitations of time and distance. It can overcome the limitations of limited access to instructor expertise.

It requires that there be leadership at the top of the organization to be successful. There has to be a "champion" that seizes the initiative, overcomes the inertia or the traditional approach to acquiring knowledge. In some agencies this is the primary role of the training officer. In others, it is the Fire Chief. In all cases LDL requires that someone take the responsibility to advocate, adopt and analyze how technology can keep their fire agency on the leading edge of the profession.

SIDEBAR RESOURCES

The Masie Center, Tech Learn 2002
http://www.masie.com

Advanced Distributed Learning
http://adlnet.org

Brandon-Hall Your guide to E-learning
http://www.brandon-hall.com

E-Learning magazine
http://httpwww.elearningmag.com/elearning/

Primenet
http://www.pwpl.com/primenet.asp