Using Basic Digital Media Tools for Training Employees

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**Abstract**—Contemporary workers, especially those in the younger “Millennial Generation”, are accustomed to learning through dynamic media such as video and audio. These media were formerly the exclusive tools of media professionals. However, because lower costs, wide availability, and user-friendly hardware and software, basic audio and video presentations can be produced by anyone with technology skills. They can also be easily distributed to employees on CD, DVD, company intranet, or the Web. With many companies operating on reduced budgets, training expenses can be saved by producing training materials in-house. This paper will discuss the benefits and problems associated with self-producing. Companies that are ready to move their training beyond printed materials and live instructors can benefit by learning how to produce and distribute video and audio effectively.

**Index Terms**—Training with digital media,

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**I. INTRODUCTION**

Digital media can be useful as part of a company’s employee training program. In the past, even as recently as the 1990s, using media files was cumbersome because of bulky equipment, inadequate storage space, slow computer processor speed, limited software capabilities, and slow network and Internet connections. These obstacles have been erased in many cases, particularly for those organizations that have been able to afford resources. Companies that are ready to move their training beyond printed materials and live instructors can benefit by learning how to produce and distribute video and audio effectively.

Universities were pioneers in using digital media for instructional purposes. Traditionally, these institutions had substantial funding to purchase the proper hardware and software. They were also equipped to develop high-speed networks to deliver the bandwidth-intensive media files. The Internet and World Wide Web were both embraced by academia’s instructors and students at a faster rate than the business world. The nature of a typical college is to research and explore the use of new technologies, so this was a natural occurrence.

In the workplace, larger companies generally adapted digital media technology before smaller companies because they could allocate more substantial budgets to this effort.

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**A. The Need for Digital Media Training**

There are numerous compelling reasons for utilizing digital media as a training strategy in today’s workforce. The employees can learn in a more flexible environment. Depending upon how the content is distributed, they can learn in different locations any time of day at their own pace. Overall, the workers can be trained effectively and efficiently with proper planning.

Companies who want to delve into digital media must have at least a core staff who possess the skills to produce digital media. Ideally, all employees would possess some level of digital media skills, but that goal might not be attainable. An instructional designer or a team of designers could be hired as company employees. This might be the best option because it would tie the designer(s) directly to the company. The designer(s) could work with other employees to develop digital media content. Eventually, some of the other employees could develop their own content, which would free the designers to work with those who need the help.

An alternative to in-house training is to outsource it. Consultants trained in teaching others how to produce digital media are prevalent. A Google search with the phrase, “training employees with digital media” yielded over 50 digital media training firms on just the first 4 pages. These companies use two strategies: training all employees or a core group of employees who will subsequently train others.

Each of those two training strategies has advantages and disadvantages. In the former, all employees hear directly from the source instead of second-hand. Professional trainers are likely to possess good communication and organizational skills, because they are schooled in this line of work. However, some employees might not grasp or embrace digital media. Training a core group that is willing and able to learn the skills would be a more judicious use of time and money. The ongoing costs associated with using outside help can be cost-prohibitive, which would dictate the deployment of the latter strategy.

To help meet the demand for digital media content, community organizations such as libraries are also offering digital media training classes. There are also conferences and workshops targeted toward non-media businesses to introduce them to the training possibilities of digital media.

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**II. DIGITAL MEDIA FRAMEWORK**

**A. Digital Media Categories**

The common categories of digital media are photographs, illustrations, animation, video, and audio. Each has distinct advantages and drawbacks, and can be used effectively for specific purposes.

Photographs are relatively quick and easy to take with a basic consumer-grade digital camera. The automatic settings help take the guesswork out for beginning shutterbugs. One mistake that amateurs make is they lower the quality by setting the camera to low resolution so they can get more photos on the camera’s memory card. The result can be highly pixilated photos, which look
jagged and unprofessional. Another problem is non-proportional resizing, which can make the subject of the photo look distorted. Digital photographs are excellent for capturing realism when compared to illustrations. They can be quickly edited, enhanced and uploaded to the Web or network.

Illustrations can be composed quickly in software programs, but the quality will depend heavily upon the talent of the creator. Although some basic shapes can be drawn with tools contained in the software, some artistic talent is necessary to attain a professional look. Illustrations serve multiple purposes. Drawings are effective for showing concepts that can’t be shown with a photograph. Maps are good for showing boundaries and labeling locations, and charts are used to illustrate numeric data. Two-dimensional illustration files can be relatively small, but three-dimensional illustration files can become large.

Video is the dynamic counterpart to photography. The contemporary work force grew up with television, so training with video is a natural extension of their lifestyle. The cameras and software are becoming cheaper and easier to use, but the learning curve can be steeper than with other media. The video process includes pre-production (the essential planning stage), production (shooting the video and recording the sound), and post-production (editing audio and video files, and enhancing with titles and special effects). Files can be large, even when compressed, and the compression process can be time-consuming. The key to good video is the talent. Actors and narrators should have good, natural speaking voices and be photogenic. They should also be able to execute their parts with minimum rehearsal. Using talent from the company is cheaper (often free), but professionals can add a touch of class to a video production.

Animation is the dynamic counterpart to illustration. Graphical images are played back in a rapid sequence to give the effect of motion. Sound can accompany animation. Files are relatively small. This medium is sometimes used to project humor in addition to showing a concept that is difficult to show as a photograph or video. Artistic skills and patience are worthwhile traits for producing animations.

Audio can be used with other types of media or as a stand-alone media. It is much easier to produce than video, requiring nothing more than a microphone and a recording device, some of which fit in the palm of the hand and contain a built-in condenser microphone. Audio podcasts are popular features in some educators’ courses and on many media websites. They can be produced almost anywhere, and the file sizes can be compressed enough for easy playback on the Web without compromising the quality. Music and sound effects can be inserted to create an image in the listeners’ minds. As with video, the voice talents need to have good speaking voices and be able to record their content in an efficient manner.

Combinations of media are frequently used in mixed presentations. A common example is a digital slide show that incorporates at least two of the aforementioned digital media types.

B. Digital Media Distribution Platforms

Digital media can be distributed through a variety of channels. These include the Internet/World Wide Web, company intranet, email, and disk (typically CD or DVD). Web and intranet delivery have become more popular than disks for a variety of reasons. Content can be updated on the fly on a network. Disks would have to be re-mastered, re-copied, and re-distributed. The storage space on disks is finite. Companies can provide enough storage space on their intranets to adequately store digital files. The cost of disks and the time needed to burn, copy, and distribute them make network delivery more attractive. Disks are also prone to scratches, cracks, and natural deterioration. Organizations that are conscious of the environment will not need to pollute the landfills with disks that are thrown out.

Network distribution of digital media training content is practical for companies with multiple locations, especially those with disparate national and international locations.

III. PLANNING THE DIGITAL MEDIA TRAINING STRATEGY

A. Decisions about Organization of Training Project

A solid, well-thought plan is key to a project’s success. The more time spent in planning translates to less time in production and post-production. This lowers the overall cost because expenses in the production and post-production stages are higher than they are in the planning stage. An acceptable rule of thumb is to spend 60-70% of a project’s total time in the planning stage.

Decisions must be made during the planning process in order to determine which types of digital media should be used, who will be responsible for training deployment, which employees will serve as trainers, and which software, hardware, and production tools should be purchased. Considerations should also include whether or not the company’s existing computers and networks need to be upgraded. Space for training and producing content might also need to be allocated, allocated or re-configured. Overspending should be avoided, but underestimating the resources necessary to successfully implement a digital media training plan is also undesirable.

Employees’ skills should be identified so they can be assigned to produce content that brings their skills to the forefront. If possible, pair employees with similar skill sets for the purpose of peer learning and collaboration until they become confident that they can work on their own.

B. Training Modules

A common mistake during the initial stages of this type of initiative is being too ambitious. This can manifest itself by causing confusion and burnout when employees do not have adequate training and cannot produce effective content.

The company should consider forming a committee or team to decide which training modules are of the highest priority and produce those first. Start with a small-scale deployment of just a few training modules to make sure they can be produced at a high rate of quality in a
reasonable amount of time. As the producers get used to developing content, they will feel more at ease with process. Before producing any more content, solicit feedback from the employees to determine which changes to make, if any. This will enable them to produce subsequent content quicker and at a higher quality than when they began. After an initial comfort level is reached, other modules can be rolled out to the trainees.

C. General Recommendations for Production Planning

The training modules’ content should be developed by collaborating with the content expert(s) in each particular subject area. The initial content development should start at least a few weeks before the project is deployed to allow for any unforeseen delays. This is especially important for time-sensitive or deadline-driven content. Deadlines for specific tasks should be in place to help lower the possibility of falling behind schedule. Mileposts for deadlines are determined by the nature and scope of each project.

There are some common deadlines that digital media producers establish during logical points of completion in a typical project. They include, but are not limited to, approval of the budget, assigning tasks to the production team (this might include hiring some outside contractors), assembling talent (if applicable), scheduling times and locations for content gathering, reviewing and editing content, testing with users, approval by management, and implementation of the module. An accepted practice is to estimate the shortest and longest possible period for completing the project, then estimate the halfway point plus a few days. For example, if the shortest possible period is 10 days, and the longest possible period is 20 days, the estimate should be 17 or 18 days.

IV. PRODUCTION TECHNIQUES

If the company’s goal is to deploy training modules quickly, content producers cannot spend a lot of time experimenting with too many different production techniques. It might come as surprise to novice producers, but many of the special effects that are included in media editing programs are perceived as gimmicks by production professionals, so they are not used. The most effective strategy is to focus on basic production techniques, such as simple cuts and dissolves in video. Special effects can be distracting to users, and they might diminish the impact of a training message.

Length is always a dilemma for digital media producers. There is no set length or size for media projects. The users will determine that. Testing modules with a few users before final distribution will indicate whether or not the project is too much or not enough. It is more efficient to produce multiple short segments rather than one long segment.

The two sequence strategies that a company can take are linear, that requires users to follow the module units in a set order, or non-linear, that lets the users pick their paths. In some cases, the company might require a linear model, but sometimes a modified approach can be used, where the users join a module at a certain unit and progress in a linear fashion from there. This would be appropriate for trainees who have already mastered lower levels of instruction, but need to learn the higher levels.

Producers might not realize the value of good planning until they get to the production stage. When a production team has a clear vision of what needs to be done, the production process proceeds smoother than one that is poorly planned. For instance, knowing which photographs to take ahead of time saves the hassle of going out into the field with no idea. Having a script written for narrators will reduce the number of times it needs to be read before an acceptable version is recorded.

In the interest of time, production tasks might need to be done in a different sequence than they appear in the project. In a video, for instance, the last interviewee who appears might be taped first because of availability. Multitasking is a very handy skill in digital media. Look to do other tasks while some of the tedious tasks are in progress. For example, while the video is being transferred from the camera to the editing software, the producer can edit the music tracks. Efficiency is another essential characteristic. If a producer has even just a few free minutes, it would be prudent to get some work accomplished, even if the entire task cannot be completed during the free time.

V. DISTRIBUTION

Posting content on a website or company intranet is relatively simple, at least as it relates to the transfer process. The producers need to decide where the files should be stored and in which application they should be distributed. Directories and subdirectories need to be assigned and plug-ins and players need to be available for trainees to use the content. If the information is intended only for company employees, usernames, passwords, and security levels need to be set up. An intranet is a relatively secure way to prevent potential intruders from accessing the training modules, but the trainees would be limited to being connected to the company network. The Web gives them more flexibility to train outside the office, but more robust security measures would be necessary.

If the decision is to use the Web for training, producers need to make sure that commonly available file formats are used. Some of these are MP3 for audio, MPEG4 for video, Flash SWF for animation, JPEG for photographs, and PDF for illustrations.

VI. CONCLUSION

Digital media is another tool that can be used by a company to efficiently train their employees. The task can seem daunting at first for both the trainers and trainees. However, after they reach a comfortable level of confidence, the training could pay off with long-term reduced training costs and a well-trained roster of employees.

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