

**IMPACT OF HYBRID INSTRUCTIONAL SYSTEMS ON PRESENT AND
FUTURE TRAINING**

by
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ABSTRACT

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The purpose of this research is to understand the impact that hybrid instructional systems have on present training and what will be their effect on future training. The study examines how hybrid training programs combine the best aspects of instructor-based training and web-based training, in order to satisfy the different learning styles of trainees, their training needs, and also, to achieve organizational goals. Therefore, this study focuses the literature review and qualitative analysis of interviews on identifying the advantages and disadvantages of traditional training as well as the advantages and disadvantages of e-learning. Also, explaining the advantages and weaknesses of hybrid training methods, and analyzing the opinions of specialists regard to hybrid training programs and their impact on current and future training needs.

The results of this research are that hybrid instructional systems are a very new approach with few times being used in training setting, and professionals related in

training field have a great deal to learn about. Even though, hybrid training programs are already positively impacting today's organization, improving human performance on the job, and there are big opportunities of developing hybrid courses in future training, because of their positive impact on return-on investment for large companies, saving time and cost invested in training. There seems to be emerging trends of hybrid instructional systems and wide possibilities for the future of hybrid-based training.

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Chapter 1 Introduction

Background of Research

The continuous changes of today's economy, focused on a process of globalization, demand competitive organizations with a skilled workforce in order to improve performance on the job and face a major technological production process, where employees must have adequate knowledge, skill, and abilities to perform the job successfully. For that reason, the Human Resource Development field has been increasing its importance and is focused on enhancing human development performance in organizations. As a result, the methods and techniques used in training processes have been improving in recent years. Today a variety of training methods exist that are used in traditional training and computer-based training. Recently, there is a high promotion of the use of innovative training systems using hybrid instructional methods. According to Parsons & Ross (2002), the "hybrid approach totally integrates on-line learning, typically off-campus, with campus-based learning to the point where one mode could not exist without the other". Classes, utilizing hybrid approach, do not have to meet face-to-face on a regular time.

Research Problem

The purpose of this research is to understand the impact of hybrid instructional systems on current and future training, its focus on improving human development performance in today's organizations, and the potential of hybrid instructional systems to improve future training processes within a changeable environment. The researcher will describe how hybrid training combines traditional instructional techniques with on-line

learning in order to provide and/or increase the knowledge, skills and abilities that employees need for improving performance on the job.

Importance of Research

Hybrid instructional systems have been used for a short time in training environments; therefore, trainers have limited experience using traditional instructional techniques combined with e-learning techniques. Professionals in the training and development field still have to learn a lot about how to combine e-learning tools effectively and efficiently with traditional instructional methods. The purpose in doing so is to design, develop, and deliver adequate training programs that respond to the requirements of today's organizations to reduce cost and time in training. Training is a solution to performance problems when these are due to a lack of knowledge, skill, and abilities that employees need in order to be successful on the job (Johnson, 2001). The purpose of this research is to provide a better understanding of the importance of hybrid instructional methods and how to use them appropriately for improving human performance in today's organizations in using training. Hybrid instructional systems are a way to improve training delivery and to increase the numbers of employees who can receive training, therefore, reducing time and cost of training for the organization. Training professionals must understand that the most important aspect of the learning process is how employees learn new knowledge, skills, and abilities that can be applied on the job for improving performance in the organization, using the technology and new instructional methods which are increasingly important in today's changing environment.

Methodology

This research is an exploratory-descriptive approach of hybrid instructional systems applied to training. These are very new learning approach for training, and an area that training specialists have a great deal to learn about. The researcher will interview training professionals concerning their opinion about the research topic. These specialists have a wide variety of experience in instructional methods applied both in training settings, and in academic settings. The qualitative analysis of the data gathered from the open-ended questions will provide relevant information for exploring the objectives of this research.

Research Question

Do hybrid instructional systems have a positive impact in improving performance and in improving future training processes in contemporary organizations?

Research Objectives

- a) To identify the advantages and disadvantages of traditional training
- b) To identify the advantages and disadvantages of online learning
- c) To explain the advantages and weaknesses of hybrid training methods
- d) To explain the impact of hybrid training systems in today's organizations
- e) To explain the different training methods incorporated in hybrid instructional systems.
- f) To analyze the opinion of specialists regarding hybrid training methods and their impact on current and future training needs.

Limitation of the Research

The researcher will describe the impact of new instructional approach applied to training how hybrid systems are. Also, this research will be mainly based on a bibliographic review of the topic and a qualitative analysis of the opinions and points of view of training specialists. Therefore, this research will be focused on literature review and interviews. The research will neither study the real impact of hybrid instructional systems in a specific organization nor provide quantitative data regarding to the use of these systems in a particular organization.

Definition of terms

- **Computer-based-training** - A general term used to describe any learning event that uses computers as the primary distribution method; typically used to refer primarily to text-based, computer-delivered training (Piskurich & Sanders, 1998, p. 93).
- **Distribution methods** - Are electronic technologies that deliver information to learners. Such methods include Cable TV, CD-ROM, Digital Videodisk DVD, Electronic mail (e-mail), Extranet, Internet, Intranet, Satellite TV, Tactile gear/simulator, Voice mail, and World Wide Web (Piskurich & Sanders, 1998, p. 120).
- **Human performance improvement** - To enhance individual performance in order to increase organizational effectiveness. Human performance improvement into any organization is linked to training and development of the employee's through educational activities in a long learning process focused on providing employees with the necessary skills to meet current and future job demands. "The

- goal is to develop interventions that have an impact on individual, process, and/or organizational performance” (Swanson, 1994).
- **Hybrid Courses** - Combine face-to-face classroom instruction with computer-based learning. Hybrid courses move a significant part of course learning online and, as a result, reduce the amount of classroom seat time (University Wisconsin-Milwaukee, 2000).
 - **Hybrid instructional systems** - Are instructional programs that combine a variety of training techniques and strategies into a training program. Hybrid instructional systems respond to the needs of today’s organization for continuous education and employee’s professional development in order to face the different learning styles of trainees and the globalization process marketplace (Miller, 2000).
 - **Instruction** - Means guiding a learner through this change. It is what an instructor does to facilitate learning; and may be planned or unplanned (ASTD, 1992, p. 326).
 - **Instructional methods** - How information is taught to learners. Such approaches include lectures, literature, games, demonstrations, expert panels, case studies, exercises, group discussion, simulations, and role-play (Piskurich & Sanders, 1998, p. 120).
 - **Learning** - Is a process to achieve new knowledge, skills, and attitudes through study or experience. “Learning is a change in knowledge, skill, or attitude” (ASTD, 1992, p.325).

- **New training prototypes** - Relate to implementation of new technology that will be used in training activities, and will change the actual generation for a “virtual generation” that will perceive the individual as a human information machine (Barbian, 2001).
- **Presentation methods** - Are electronic technologies used to facilitate the presentation of training programs, such as Computer-based-training (CBT), Electronic text, Electronic performance support system (EPSS), Interactive TV, Multimedia, Online help, Teleconference, 3D modeling/virtual reality, and Video (Piskurich & Sanders, 1998, p. 93).
- **Self-directed learning** - Is a training design in which trainees work at their own pace, without the aid of an instructor, to master predetermined material (Piskurich, 1993, p 22.2).
- **Technology applied to training** - Is the use of technologies for “...development of interactive instruction systems. Coincident to this are technologies advances in available hardware and software to support development of these instructional systems. The challenge for designing a course for communicating specific ideas or information is to understand how these new technologies can assist in that task and what changes to existing strategies and design must take place to capitalize on the benefits these technologies offer” (Piskurich, 1993, p. 8.2.).
- **Traditional training** - Is conventional classroom training, where the instructor teaches the class and answers questions from the trainees. “Instructor-led training is most cost-effective when there are relatively few students ...available to attend the training session(s)” (Carr, 1992, p. 161).

- **Training and Development** - Involves identifying, assuring, and helping develop, through planned learning, the key competencies that enable individuals to perform current or future jobs. Training and development's primary emphasis is on individuals in their work roles. The primary training and development intervention is planned individual learning, whether accomplished through training, on-the-job learning, coaching, or other means of fostering individual learning (William & Sredl, 1992, p. 477)

This section summarizes the essence and the purpose of this research study. The next chapter presents theoretical topics related to the different instructional methods that may be applied within a hybrid training system.

Chapter 2 Literature Review

Contemporary organizations are facing continuous changes in the way of providing products and services into a framework of new technology and high competition in the global marketplace. Those changes are demanding a work force better trained and synchronized with the strategic planning of the organization for expansion what need skilled employees wherever their branches are. Therefore, many organizations invest a large amount of money and time in education and training programs for development and motivation of their employees. This globalization process of the economy has increased the importance of the Human Resource field, especially in training and human resources development, which focuses on the performance improvement of the work force and on organizational effectiveness.

Human resource development programs must be related to the mission, goals and strategic plan of the organization. Training and human resource development in any organization, should design instructional programs that are linked to the mission and organizational goals. Training programs must also be responsive to the needs of employees in acquiring adequate knowledge, skills and abilities to performance their job successfully in order to be prepared for facing the continuous changes in the organization.

Learning Styles

Not all trainees learn in the same way; people have different learning styles, individual characteristics such as motivation, technique, skills, self-confidence, and self-efficacy in learning something new and in applying knowledge on the job. The trainees' learning styles can influence academic success. The four learning styles identified for AdvisorTeam.com (2001) are the following:

Artisans tend to be playful, optimistic, unconventional, impulsive, and adaptable. Artisans prefer hand-on active learning rather than sitting in a chair and listening to the teacher talk.

Guardians tend to be responsible, helpful, hard-working, sociable, loyal, stable, and traditional. Like Artisans, Guardians are likely to choose practical courses of study that will lead to secure careers.

Rationals tend to be self-directed learners, highly autonomous, analytical, and logical. Rationals often choose courses linked with science, mathematics, philosophy, or technology.

Idealists tend to be enthusiastic, motivated by ideas, intuitive, intense, authentic, and self-directed in learning. Idealists prefer that teachers act as mentors, and they often choose courses related to arts, literature, psychology, or the humanities.

According to the learning styles above, trainers must understand that some individuals feel comfortable reading a manual, others feel most comfortable with traditional classroom training, while other employees with busy schedules might prefer online instructional courses. Those individuals' differences then should be considered by the instructional designer or the human development professional when training programs are designed.

People's different learning styles have influenced the development of hybrid instructional systems that applied to training programs combine various training delivery methods, adjusted to different learning styles and skill levels of trainees, into a same training program. These hybrid instructional systems are more adjusted to the actual need and requirements of improving the efficiency and effectiveness of the whole

organization in today's challenging environment. The following literature review will provide a better understanding of training process, traditional training, Computer-based-training (CBT), e-learning or Web-based training (WBT), and Hybrid instructional programs.

Training Steps

A training process begins with a needs assessment or performance analyses in order to determine what kind of performance deficiencies are affecting the organization from the perspective of customer delight, profitability, and the working environment. Whether the performance problem is caused by a lack of knowledge, skills, and abilities to satisfactorily perform the assigned task, training employees could be a possible solution for improving human performance on the workplace. After identifying the causes of performance problems, it is necessary to conduct a task analysis in order to determine what kind of tasks and duties employees are required on the job, and what kind of tasks employees should do on the job. The process then continues, Carr's 1992 study, stated the following steps:

The trainer must *design* the training. In this stage, he or she identifies the performance objectives describe what employees have to do in order to improve performance problems in the organization and determine how it will produce the performance improvement that the organization needs. The trainer also decides how the training has to be delivered. The method used might be a classroom course, computer based training, or others methods. No method is intrinsically superior to another; each is effective when used properly and wasteful when used inappropriately. This step is summarized into a lesson plan.

The next step is *development*. Here the trainer creates the actual training including training-material development. This may be as short as outlining an hour's structured on-the-job training for a supervisor to deliver. Or it may be a lengthy project to create a flight simulator or complex management decision game.

When development is completed, the trainer *tests* the training and validates the instructional plan through a pilot test training program in order to predict if training will be successful and will be responsive to employees' needs. Will individuals be able to perform as intended when they finish the training? If they can, the training is ready to give. If not, the instructional plan must be revised and tested again.

The training is then *delivered* or implemented. During training sessions, the trainer must consider the principles of adult learning based on recognized or accepted learning theories. Those principles are the following:

1. Adults need to know *why they're learning* a particular topic.
2. Adults need to be *in control of their own learning*.
3. Adults have a *broad range of experience* that they are able to relate to the material they are learning.
- 4 Adults are willing (something even enthusiastic) to learn material they believe will make them *more effective and successful*.
- 5 Given the proper support, most adults *want* to learn. If the above principles are applied, and they see a direct benefit to them-they *will* learn.

Finally, the trainer will *evaluate* the effectiveness of the training in some way to make certain that it has achieved its goal. The trainer must also perform a self-evaluation

This is the complete process for developing successful training. (pp. 45-50)

The following literature review will focus on the design training stage, specifically on some methods used by trainers in order to deliver training such as traditional training, Computer-based-training (CBT), E-learning or Web-based training (WBT), and Hybrid instructional training. The advantages, disadvantages and the impact of these delivery methods on the learning process will be examined here.

Traditional Training

This is an instructor-classroom training method. The instructor uses a variety of training techniques such as lecture-material, team-discussion, audiovisuals, experiential or workstation, and computer-based-training. The use of these techniques will depend on the topic of training and trainees' needs. Training classroom is the most traditional, and a very effective, method of employee instruction. Vaas's 2001 study reported the following:

Human interaction wins out over Web-based instruction when it comes to how much learning goes on in class. In late 1999, research firm Gartner interviewed more than 150 training coordinators, students, and managers from Global 2000 organizations and discovered that live teachers edged out e-learning on several measures of quality. Match that with the cost-effectiveness of e-learning and you get companies turning to live e-learning, which combines the engaging quality of a live teacher with the cost savings of online delivery. (p. 7)

Gartner's research results were compiled in a chart that shows the relationship between E-learning and Instructor-Based Training (see appendix # 1). This chart lists advantages and disadvantages of traditional-based training vs. the advantages and disadvantages of e-learning. Traditional training is highly effective in regard to

customer satisfaction; trainees feel more comfortable with instructor-based training and they more effectively achieve the learning goals than in e-learning-based training. Instructor-based training has higher acceptance for the trainees because they prefer register in traditional training rather than e-learning training programs.

On the other hand, e-learning has two big advantages in the cost-effectiveness of training and in the time spent per trainee to learn effectively. These two elements are very important for any company to consider at the moment of decision as to what kind of training methods will be used for delivering training (Gartner, 1999).

Traditional training delivery systems have been changing. New delivery techniques such as interactive multimedia programs are increasingly utilized for instructional presentations, the impact of the new learning technologies on human performance development is growing. Piskurich's 1998 study showed that today, this is possible to use this technology in order to:

Create a highly interactive, responsive instructional system with all the related characteristics never before possible at any price- and to make it available at an affordable price...the interactive educational or learning systems have been shown to be particularly effective with adult learners. (p. 8.6)

Today traditional classroom training is more focused on computer-based-training as the most effective training delivery method for providing instructional material and for doing presentations.

Computer-Based-Training (CBT)

Computer-based-training is self-paced training. Trainees can take self-paced training at their convenience and progress at their own speed. Self-paced training adapts

the training to the demands of the job. CBT may be the best alternative if training requirements involve considerable interaction and initiative from the learner. If the subject matter is complex material that requires the student to pay close attention and learn each point before moving to the next, CBT will be the best method, too (Carr, 1992).

Computer-based training may be used in classroom instruction. Computer is limited one person as trainer or trainee for demonstrating instructional material during training sessions. Computer-based-training uses interactive multimedia systems such as Power Point, storyboards, delivery software, and CD-ROMs for delivering presentations, and conducting training. Multimedia is an interactive computer system for presentations that synchronize text, sound, graphics, and animation of images. The advantages of CBT are the following:

- It is easy to use and excellent for large or small group.
- It is easy to integrate with classroom instruction.
- It is easy to update.

The disadvantages of CBT are the following:

- It requires computer equipment/facilities.
- It requires initial training to create the instructional module.
- It requires significant time to create.
- It requires basic graphics/composition knowledge.
- If CBT is used in a traditional classroom training, the computer is limited to one person the trainer or the learner.

In order to improve the traditional CBT, training in today competitive organization is being focused on the use of online learning tools, as the Internet. It is a popular and time-efficient alternative for many organizations to provide instruction to their employees. Even though, Piskurich's 1993 study found the following:

Increasingly powerful PCs, interactive media, multimedia, hypertext, hypermedia, laptops, pen-PCs, hand-held or notebook-size computers, digital video-interactive (DVI) compact disc read-only-memory (CD-ROM), compact disc-interactive (CD-I), digital paper, videodiscs, computer graphics, 'intelligent' electronic terminals, fax machines, cellular phones, fiber optics, lasers, communications satellites, low cost terminals, and expert systems are currently affecting every facet of our human condition. (p.22.2)

Training specialists must consider teaching, learning, and information delivery before applying multimedia computer-based training. Trainers need to consider the number of machines needed, the approximate number of hours required for a particular curriculum or course, and how access to machines and programs will be regulated. The prior computer experience and knowledge of trainees must also be considered. The boom of using new technology and interactive system to provide training has increased the importance of e-learning or web-based-training.

Web-Based-Training (WBT) or E-Learning

E-learning or distance learning is a form of online learning that is provided in a virtual classroom. The major delivery system used in WBT is the Internet. Trainees can access training materials using the internet from any office computer or with an interactive CD-ROM in a workstation. Other popular delivery systems that can be used

in E-learning are intranet, world-wide-web, and extranet. Web-based-training is easy to navigate by web-site, and allows sending emails. It is fast delivery of information, which allows sharing of ideas and opinions by a discussion board.

The advantages of Web-Based-Training are the following:

- Trainees can access the information anywhere and anytime.
- It has discussion-board capabilities and users can contribute their own ideas.
- It is more cost-effective than conventional training.
- It is easy for instructors to post assignments and grading students by WBT takes less time than traditional training.

The disadvantages of Web-Based-Training are the following:

- Technology can be fail during the navigation.
- Sometimes, this is possible find broken links and out of date information.
- Trainees do not have interaction face-to-face with the trainees.
- Developing the course for self directed e-learning may take too long (selecting texts/reading and preparing writing courses).

E-learning is a highly effective and efficient training process when employees are located in different regions and they have easy internet access. Also, this method has a positive impact on the learning process, when trainees are self-motivated to learn by themselves, and they have the computer and technological skill and knowledge needed to complete a web-based-course. Even though, the biggest problem of e-learning is the dehumanization of learning, which can directly affect customer satisfaction and meeting learning goals. However, elements such as social interaction and interpersonal collaboration, which are a very important part of the learning process, are limited

practically to zero. Therefore, online learning has to be humanized through teamwork that provides human interaction in e-learning instruction. This problem could be solved by providing opportunities for trainees' interaction. According to Scheer (2001), "communication tools like threaded discussion, chats and online virtual office hours are all possible avenues for successful interaction between learners and instructor."

Continuous improvement through training is very important for today's business, which needs a workforce ready to face rapid technological advances into the global economy. Even though, not everyone has the same learning style, or learns in the same way; employees' learning differences have produced new instructional approaches as are the hybrid learning systems, which combine a variety of training tools into an instructional program, in order to satisfy employees' training needs and organization's training requirements.

Hybrid Training Systems

Hybrid instructional systems utilize a variety of training methods such as instructor-based training, computer-based-training, and Web-based-training, or online learning into the same training program. According to Miller (2002), "Hybrid learning employee education programs utilize a variety of training tools, techniques and tactics. By combining various curriculums into one training program, companies can match the most appropriate training methods to different learning styles and skill levels" (p. 1). Also, Miller's 2002 study stated that the following training methods can be incorporated into a hybrid training program:

- Instructor-led training. Traditional classroom training. Employees have written materials and an instructor who leads the class and answers questions.
- Online learning. The Internet has made online learning a popular and time-efficient option for many companies. Employees can download training materials from the Internet onto a laptop or office computer or load an interactive CD-ROM onto a workstation.
- Distance learning. This form of online learning takes place in ‘virtual’ classrooms and works well when employees are scattered, gatherer in a secure ‘chat room,’ and are led by an instructor who answers questions and facilitates the discussion.
- Experiential learning. This method is often effective for mastering complex software programs. Employees learn by doing while an instructor leads a group through specific tasks performed on a computer or at a workstation.
- Training materials. Employees are assigned manuals to read or videos to watch and they learn at their own pace. Employees can continue to use these materials after training, empowering them to answer their own questions. (p. 2)

Hybrid courses involve an instructor in the classroom using a computer or in remote location. According to Lago (2001), hybrid ‘course is right in the middle -- some of it online, some of it on campus. It's supported by computer technology, but actual class time is reduced. It's the hybrid course.’ The learners can be in the same classroom

with the instructor, using a computer too, or they can be in a remote location (Leeson, 2000). Before implementing hybrid instructional systems for delivering training, the training specialist has to evaluate employees' knowledge, skills, and level of computer ability, and their learning style. Hybrid instructional systems also, requires of high-quality materials, and interactive learning activities. The trainer should develop individualized instructional plans when it is necessary; also, she or he has to provide continuous assessment to provide fast and efficient feedback, and the trainer should also provide adequate and varied human interaction when it is necessary, since classes do not meet face-to-face regularly (Leeson, 2000).

The biggest advantages of hybrid instructional systems are the combination of several training methods, which can satisfy the different learning style of trainees. Also, hybrid training can improve the learning process and trainees' satisfaction. In addition, hybrid training can enhance human performance in the organization; helping it to achieve its business objectives of being profitable, delight the customer, and provide an enhanced work environment for its workforce is well served by the possibilities inherent in hybrid instructional systems.

According to Miller (2000), "hybrid learning program...proves to be a more effective and more realistic way to train today's workforce. And it proves a more cost-efficient, strategic and promising way for companies to meet their business objectives in integrating new technologies and processes" (p. 2). Therefore, hybrid instructional systems applied to the training setting provide new technologies and processes that improve human performance in the workplace. Training specialists must be ready to face the new changes in learning technologies and also, they must understand how to apply

these technologies to provide training in today's organizations. Shank's 1997 study indicated that trainers have to be prepared to...

Acquire the right courses, make sure the right people take the right courses, and modify those courses to fit the designs of the organization. The ability to customize software will save organizations enormous amount of money. Instead of buying one new piece of software after another, trainers will modify a generic program for reuse. (p. 165)

Many companies are applying hybrid instruction in order to provide training to their employees, saving costs and increasing effectiveness. Hybrid training programs are transforming in the training solutions of the future. Hybrid instruction is also known as **blended learning**. Goodridge's 2001 research found the following:

The courses can be delivered in a variety of formats—instructor-led, real-time E-learning, or self-paced E-learning...many customers asked for **blended** options.

These customers want to take advantage of the cost saving and effectiveness of E-learning, but also value the personal aspect of classroom experiences. (p. 1)

However, this is important that training specialists, before providing training, consider the different learning's styles of trainees, their individual requirements and their preferences in how, when, where, and what they learn. According to Sloman (2001), "Effective personalization or customization may require everyone involved in the learning process to revisit our pedagogical base: We must assemble and reassess what we know about how people learn and work" (p. 61).

Many organizations are already implementing hybrid instructional systems to

improve human performance of their workforce, linked to organizational goals. Some of these organizations are the following:

- The Defense Acquisition University (DAU) is a consortium of Department of Defense that provides continuing education courses for military and civilian personnel. During 2001, DAU developed hybrid courses which involve “two parts”. Part A is delivered by “DAU Virtual Campus” and part B “is presented in the classroom (resident/on-side). Each student must successfully complete Part ‘A’, before attending Part ‘B’. Both parts must be successfully completed before the student will receive credit for completion of the course” <https://dau.fedworld.gov>. (For examples of DAU hybrid courses see appendix #2)
- University Wisconsin-Milwaukee. Learning Technology Center has developed hybrid courses that split teaching objectives within online sessions and classroom sessions, including different teaching/learning strategies such as concept demonstration, case study, problem solving, simulation labs, interactive lecture, team projects, and discussion forums. <http://www.uwm.edu/Dept/LTC/for-faculty.html>. (For examples of hybrid courses see appendix #3)
- Operation Training Directorate (OTD): this company provides training using different delivery systems in order to improve “human performance and process improvement” (Warner, 2001). Within its deliverer methods are Web-based training, Computer-based training, and other systems. According to Warner (2001), “The OTD delivers about 15 percent of training via technology, expected

to rise to 20 to 25 percent...the OTD uses a blended learning approach for technology-supported technical training”(p. 50, 8).

Hybrid instructional systems are very new approach and there are many questions about its advantages and disadvantages on current training, and also what its impact in performance improvement in future training processes will be. According to Sloman (2001), “we’re still in the age of learning technology not in the age of technology for learning” (p. 61). Therefore, the research method of this study is focused in finding information directly from specialists who are correctly using different instructional systems in order to deliver training. The researcher will gather information regarding the advantages, disadvantages, and the impact of hybrid instructional systems on current and future learning processes in a training environment, using open-end questions in an interview format. This research method will be explained in the next chapter.

Chapter 3 Methodology

This research was based on an exploratory-descriptive approach, focused in the analysis of theoretical explanations found about hybrid instructional systems. Also, this information was combined with relevant data gathered from the interview conducted with two specialists who have wide experience in providing training using several instructional methods in competitive organizations. Qualitative methodology was well appropriate for doing this research because it allows doing generalization from interpreting participant's perceptions or meanings. Bickman & Rog's 1998 study indicated the following:

Qualitative researchers often study only a single setting or a small number of individuals or sites, using theoretical or purposeful rather than probability sampling...The generalizability of qualitative studies is usually based not on explicit sampling of some defined population to which the results can be extended, but on the development of a theory that can be extended to other cases. (p. 95)

Interview was the method of data gathering used. The questions were designed in an open-ended format because of provides more opportunities to get relevant information from the interviewees' answers not only from the thought by the researcher (Bickman & Rog, 1998). All participants answered the same questions. The two participants were chosen for their experience providing training. They were contacted personally in order to determine dates and time for the interviews. The interviews were conducted face-to-face and recorded using a tape recorder. The information submitted by those professionals was analyzed respecting their point of view and personal opinions. The questions asked to selected specialists were the following:

1. Based on your experience in the training field, what do you think are the advantages and disadvantages of traditional training and of web-based-training?
2. What is your opinion of hybrid instructional system?
3. Do you think that a hybrid training system can enhance human performance in today' organizations?
4. Can you explain if there are any guidelines to use hybrid system effectively?
5. According to your experience in training, what do you think are the advantages and disadvantages of hybrid training system?
6. Can you explain the impact of hybrid instructional system on the learning process on present and future training in today' organizations?

The first interview was conducted with a specialist in the field of continuing education. The second interview was conducted with a Web-Based Instructional Designer, with wide experience in training setting. The interviews were transcribed from the tape recorder and printed. Then, the researcher analyzed the printed transcriptions, categorizing and combining the answers for significant themes in regarding to the research objectives. The information submitted for the participants was ranged into segments or phrases, forming "meaning units" of the phenomenon as it are experienced for the sample, respecting their point of view (Leedy & Ormrod, 2001). The research presented the data gathered results in form of narrative story, after the verbal transcriptions were categorized and analyzed and then, the researcher provided a copy to the participants in order to validate the information or data.

The researcher analyzed the data gathered using the various meanings identified for participants in order to develop a description and interpretation of the impact of

hybrid instructional systems on current and future training. According with Kvale's (1996) study:

Meaning condensation entails an abridgement of the meanings expressed by the interviewees into shorter formulations. Long statements are compressed into briefer statements in which the main sense of what is said is rephrased in a few words.

Meaning condensation thus involves a reduction of large interview texts into briefer, more succinct formulations. (p. 192)

Then, the researcher drew conclusions about the phenomenon studied, related to the findings and to the existing theories, in order to provide practical implications and recommendations about hybrid instructional systems within a training settings. Also, this analysis provided information about whether hybrid instructional systems really improve performance in organizations, whether this kind of training contributes to employees performing better on the job after receiving training, if the process productive will perform better after the training intervention, and if organizations will perform better after employees have received hybrid instructional training. These topics will be examined in the next chapter.

Chapter 4

Results of the Study

The first participant interviewed was a specialist in Continuing Education field. The second person interviewed was a Web-Based Instructional Designer with wide experience implementing hybrid systems in business and academic setting. The data gathered and summarized from the interview was organized and interpreted according to common themes related to the impact of hybrid instructional systems on present and future training processes by the participants and the researcher. Considering that hybrid training combines traditional instructional techniques with e-learning techniques in order to provide the knowledge, skills and abilities that employees need for improving performance on the job, the researcher sought verbatim evidence that hybrid instructional systems may be a significant option for organizations that provide continuous education to their employees in order to face the different learning styles of trainees and the globalization process of the economy.

Within this framework, the interview analysis was structured according to common themes related to the research topic.

Advantages of Traditional Training

The advantages of classroom training are that the instructor can use several training methods, which are very effective for providing employee instruction. Also, this kind of training provides more opportunities for human interaction, which is very important for the learning process. The participants agreed that traditional training provides several benefits such as a face-to-face training, learners feel more comfortable

with instructor-based training. The participant # one indicated the following advantages of traditional training:

One of the advantages of traditional training is that with the face to face training depending on the content and methods used are easier to figure out where the individuals ask and begin to explore what knowledge they have in an area before you trying to increase it. So, traditional training provide more opportunity to utilize different methods based upon to face individual learning has.

Participant # two explained the following advantages:

A major advantage of traditional face-to-face training is that instructors/trainers and students are used to this method. Instructors merely need to show up and do what they always do – it requires very little preparatory time as they become more practiced. However, this is also a disadvantage in my opinion.

Disadvantages of Traditional Training

On the other hand, traditional training presents some disadvantages regarding to the time spent for the student to learn effectively. Participant # one agreed that this “training takes more time”. Also, another disadvantage is the cost-effectiveness of a training program which requires that all trainees have the same level of comprehension in order to the learning to be effective as well as the training material needs of constantly being updated. Participant #1 indicated that:

Anytime you have a group situation where the whole group is at the same level when they come in with the knowledge. I don't think they are able to individualize quite that way with traditional training... Definitely, all this costs that will be even with traditional training how effective is it going to be once

they leave the training; how much are they really going to apply; is it spaced out over a period of time; ...are you really going to be determining whether they have achieved the outcome and that they're able to apply or demonstrate the knowledge? I think all of these are problems in training... when we look at training versus education, we see a very different form of learning and even though we tried to put them all together but they are not the same.

Participant # two indicated that:

Instructors often become so comfortable with teaching a course that they rarely revise or update the course. How many times have you heard, 'I've taught it this way for 20 years!' I'm not sure that's something to be proud of. One should always take the opportunity to gather feedback and revise a course for continuous improvement and to ensure that the content is up to date.

Advantages of Web-Based-Training

E-learning or distance learning is a form of online learning that has been increasing its popularity in training setting. Web-Based-Training combines several delivery systems such as intranet, Internet, extranet, which allow fast delivery of information and fast share of ideas and opinions by discussion board or by e-mail.

Web-Based-Training has multiple advantages such as accessibility of the information anywhere and anytime. E-learning provides more opportunities and time for the learners to understand the lessons and to provide their own ideas and opinions. Also, E-learning is more cost-effective than conventional training, because participants agreed that the main advantages of E-learning are the update of the content the more effective

time spent per student to learn, more flexibility in understanding the material. Participant # one explained that e-learning provides the following benefits:

Distance learning gives you the advantage of providing more content for the learner. Having content up, going into distance learning, probably one of the advantages is that the learner can go back, and continuously re-read until they get an understanding of it.

Participant # two stated that Web-based training benefits the learners providing them with a variety of contents, contemporary examples, and motivating foreign students to participate in discussion boards. Participant # two comments involve the following:

Web-based instruction often forces instructors to re-think the way they have been teaching the course, which has many benefits: the content gets updated, the organization is often improved, the activities become more varied and the instructor becomes excited about their course again. All of these changes also greatly benefit the students. How more interested and motivated is a student when the examples are modern, the course is well organized and easy to follow, the activities aren't all the same (read, write a paper, take a test, repeat), and the instructor is excited about teaching the course.

There are other more obvious benefits of web-based training: convenience, more time to reflect on comments, more participation from shy students or students with English as a second language, and reduction of typical biases (appearances, ethnicity, etc) that occur in classrooms.

Disadvantages of Web-Based-Training

Web-Based-Training is focused to teach cognitive knowledge. Anything that trainee needs to learn by touching or manipulating directly machineries, web-based training does

not compete with hand-on training. Also, Web-based training does not have interaction face-to-face with the trainees, and does not have social interactions, which are a very important part of learning process. Developing on-line courses is lot of time-consuming. In order to be highly effective and efficient in the training process, the trainees that are participating in an E-learning course must have easy access to the Internet. Trainees should be self-motivate to learn by themselves, and they must have the computer, the technological skills, and the knowledge needed to operate basic computer programs.

Those disadvantages were widely explained by Participant # one bellow:

- Unless, there is somebody that is working with the learner, if they have an individual has questions and when they don't understand concepts, it is more independent. It is a disadvantage.
- Distance learning is probably more time consuming than the traditional training, quite often people tell us how long it takes; and it does.
- People like to have paper in their hand and they have to print out everything, so they can read it.
- Trainees have to be self-motivated in order to complete the lessons by themselves. And that really is the entire problem—with any type of the technology.
- We could even try new forms of technology, but when the learner doesn't even have the skills to use the computer, and there isn't going to be a good way to do it, usually not...A lot of people who just dread it and want nothing to do with them. Some people don't get it at all.
- There are a lot of people, and we have organizations that love it and utilize lots of computer based learning, and that is wonderful. We have other organizations that

won't use it at all, because they don't even want to try it. So I think that some people feel scared to learn something new.

- I think that probably one of the big areas when you look at distance learning even with the technology, when it changes, it doesn't always become easier, it become harder. So, I think for those people that were work afraid of it before, when it continues to change, they become more afraid versus less afraid...and that's a problem.

Participant # two indicated, "A disadvantage of WBI is that some domains are extremely difficult to teach via the web. For instance many psychomotor skills would be difficult to teach online. Would you want people to learn to drive on the Web?"

Therefore, Web-based-training is focused to teach specific learning domains as the cognitive.

Hybrid Instructional Systems

Importance

Hybrid instructional systems combine the advantages of instructor-based-training and web-based-training in the same instructional program, which corresponds to the different learning styles of trainees. The effectively and efficiency of hybrid instructional programs depend of some factors to provide adequate and varied human interaction, such factors are learners' computer skills, learners' style, quality of the material and interactive learning activities. Participants agreed that hybrid instructional systems are growing in importance because they provide the trainer and trainees with more delivery methods and training options.

From participant # one's point of view, hybrid instructional systems are important because:

We are becoming more sophisticated, in what we are able to provide as experiences to the learner...if we look at traditional, as well as web-based, I think we have put a lot of time into looking at why we're providing training; How they are engaging with material; and what they're getting up out of it. And hybrid instructional system has given us many more options to use, many more different methods to use in training, and that's been good. I think that whenever we have more, or different techniques, that is better for the learner. But, I also think that sometimes they're not well-used. It's based on the topic. It's based on the learner. It's based on whatever your outcome is.

In addition, the importance of hybrid instructional systems is that they satisfy the different learning styles of the trainees. Regarding with this topic, the participant # one indicated:

Sometimes our learners learn differently, and we don't necessary, probably, look at that...how they learn...giving them the technology. On the other hand, I think that is wonderful to have all those options...we need all those options... if you are going to be developing so much learning capacity.

Participant two considers that "They are a fantastic option and are the most rapid growth area for training delivery styles."

Guidelines

Hybrid instructional systems are very new in the training area, and there is not a known guideline that indicates rules or instructions about how to use them effectively.

From the point of view of participant # one, this guideline would be fitting with:

The general learning principles, adult learning, and effective use of e-learning.

We need that more than anything else. It (H.I.S) is fairly new and people have to learn about it today, if it is possible. But I don't know if we are quite there yet.

We create technologies first, and now, we are trying to figure out how effectively utilize it in the best way.

Participant # two indicated that has applied the following guidelines, during the development of hybrid instructional courses:

Use the in-class time in the most efficient manner as possible. Most cognitive domain type objectives should go on the Web part of the course while anything in the affective or psychomotor domain should be covered in the face-to-face classes. Let students do pre-work online and make sure they come class ready for small group work or one to one faculty work time on their projects.

Advantages of Hybrid Instructional Systems

Participants agreed that hybrid instructional systems applied to training have several benefits. Such benefits involve the combination of different delivery methods applied to training setting, the process of improving trainees learning, and satisfying their particular learning styles.

The participant one summarized the advantages of hybrid instructional systems applied to training in the following:

We have many more options to use for designing training for people. I think that to have all those options is good, I think as trainers we need to be able to utilize as many as we can because people learn in different ways, and that is going to be able to help the individual learning process and people will be able to retain learning better...adjust leaning in different forms. Hybrid system will be able to realize this... I think that will probably improve the training, increase the effectiveness of it.

Participant two indicated as advantages “more effective use of costly face-to-face class time, less expenses for the company for travel for participants, more thoughtful reflection for asynchronous communications, extend the course into the field for on-the-job mentoring.”

Disadvantages of Hybrid Instructional Systems

There are some disadvantages related to delivery training using hybrid instructional systems, which come from how much time is applied to the academic and training setting. However, there is very few information available about these new systems and how to rule the development of hybrid training courses. Participants agreed to indicate that the design and development of hybrid instructional courses are more time and cost consuming than traditional training. Trainers and trainees have to adapt to continuous learning technology changes, and also to the lack of technology skills that some trainers and learners have when using new technologies into the learning and instructional process.

According to participant one, the hybrid instructional systems applied to training have the following disadvantages:

- It needs the understanding of technology and correct method...how to use it.
What outcomes, can you really measure those outcomes, how to start, and what'll be the outcome.
- Trainers have to have a good understanding of adult learning and are going to be incorporating that with the technology...But, I think that there will be lots, and there probably are, lots of programs to utilize hybrid learning system, and use it wrong, don't know to utilize it well.
- How the learners feel about it, is important too. I think when we do that, we turn learners off. And, I think that's probably one of the things that happen, even with distance learning. You know, we all jump on bandwagons and started using it, but it was a heavy task. You know, it was probably hours of reading, and I don't think that were necessarily, probably using it, and we still have to, even for us, we have to careful because there's lots of ... it is difficult still for us; you know we have to be careful with our customers.
- Technology is continuously changing, continuously improving, and then, we have to learn about it, and then for us more comfortable into use it as a trainer, even if you have to feel comfortable with the methods that you use. It takes more time, more money. I mean look that world is changing continuously.

Participant # two considered some disadvantages such as:

- Students should be motivated adult learners.
- Companies need to respect the time it takes to be involved in the web portion of the class as well as the face-to-face portion.

- Often it (the course) takes more up-front design and production time (in part because people are not used to designing hybrid courses and need to acquire technology skills).

Hybrid Instructional Systems & Human Performance

Hybrid instructional systems applied to training provide learning tools and skills in the cognitive, affective, and psychomotor domain, that employees need in order to perform an effective and efficient job. Research participants agreed in affirming that hybrid instructional systems really enhance human performance in today's organizations. Participant # one explained how hybrid training courses improve human performance bellow:

Hybrid training system has improved human performance in today's organizations. If you look at enhancing people's learning. I think that it's given us many more options to use, and ...that's been good. So, as trainer, I think that if you only utilize, probably even that ten years ago some technology ...we were so limited and, you know, you look how much we did with reading, how much we did with lecture and, we really didn't involve the individual, and I think in the computer end.... It is very useful.

Participant # two indicated "I have worked in business and academic settings to implement hybrid systems for the last 5 years and I don't *think* hybrid training systems can enhance human performance, I *know* hybrid training systems can enhance human performance."

Impact of Hybrid Instructional Systems on Current and Future Training

Hybrid training courses combine the best of instructor-classroom training and web-based training. In addition, they involve new learning technologies that applied to training setting have enhanced methods and techniques used to teach people according with their particular learning styles, and training needs. Therefore, hybrid instructional systems have improved current training and they will be frequently used on future training. Hybrid instructional systems can improve human performance on the job and contribute to achieve organizational goals. Participant # one explained that:

Having many options for designing a program does improve the quality of training for a learning participant. The training can be designed based on the topic and outcomes desired. With many options does come drawbacks. Sometimes we utilize inappropriate techniques when training, as we don't understand how to apply a technique in order to obtain a specific outcome. In the future, I think the hybrids are an excellent way to improve training. To continually have new options available provides the trainer an array of methods to use with different types of content, only improves the quality of what training is provided.

Participant # two stated that:

Students will need to learn and practice more time management skills, students are more responsible for learning in hybrid systems, I think students will have higher and higher expectation of the technology, interaction between student/faculty and student to students will increase, there will be more workload for instructors, instructors will be able to present ideas in using a variety of media

(which should increase understanding of concept being presented), and some of the study can be done at client sites or at the learner's home or office. Once the course is over, the learner can also use the web materials for a Just-In-Time refresher. In this consumer driven world, eventually only the well designed, highly interactive (with lots of feedback to the learners) courses will remain. I think the students will push the instructors/trainers to design better courses that are convenient and relevant to them.

The data summarized in this chapter provided relevant information to the researcher for developing the summary, conclusions, and recommendations that are being explained in the next chapter.

Chapter 5

Summary, Conclusion and Recommendations

Summary

This research explained the positive impact of hybrid instructional systems in improving performance and in improving current and future training process in contemporary organizations. Hybrid instructional systems combine traditional instructional techniques with e-learning techniques in order to respond at the different learning styles of trainees and the needs of today's organization for continuous improvements of its workforce. The literature review and interviews showed that hybrid instructional systems have few time of being applied in academic and training environments. Also, these instructional systems combine the best techniques of instructor-based training and web-based-training satisfying the different learning styles of trainees, enhancing content, and quality of instructional-learning process, and delivery methods. The learning technologies and strategies being applied to the development of hybrid instructional courses are still emerging and their use is growing into training setting.

Hybrid instructional courses involve more time and cost consuming in the design stage. Even though, hybrid training programs are having positive impact on current training, improving human performance on the job, and they will be used widely on future training. Hybrid training programs are being seen as ones of the most complete instructional system, which correspond to the exigencies of cotemporaneous organizations and the globalization process of the economy. Therefore, in this century more organizations will be adapting the continuous changes of learning technologies into

more effective and efficient training programs, like hybrid courses, which will contribute to achievement of organizational goals.

Conclusions

Hybrid instructional systems combine the advantages of Instructor-based-training making more effective use of face-to-face training, focusing the psychomotor skills in the hand-on training, and Web-based-training is centered in teaching the cognitive or theoretical part of the training program, in a same instructional program, which corresponds to the different learning styles of trainees. The effectiveness and efficiency of hybrid instructional programs depend of some factors such as learners' computer skills, and their learning style, and the quality of the material and interactive learning activities that provide adequate and varied human interaction. Hybrid instructional systems are growing their importance into training setting because of provide to the trainer and trainees more delivery methods and training options.

Hybrid instructional systems have few times being applied on training setting, even though; they are already having a positive impact on current training. Such impacts are: in improving human performance on the job and enhancing the three business musts of any organization: profitability, delight customer, and enhance a productive work environment. There is a high potential for the future of hybrid training programs, that response to the globalization of today economy and continuous changes in the productive process, which are demanding a more knowledgeable, competitive and skilled workforce in order to improve performance on the job and face a major technological production process.

Hybrid instructional systems are more time and cost consuming than traditional training and e-learning, because of the combination of different learning techniques and delivery methods. Training specialists still have to learn a lot about how to design and to implement hybrid instructional courses within a training environment, even though, the return on investment (R.O.I) of hybrid training programs could be significant for large companies regarding to their three business musts. Hybrid training programs provide and refresh knowledge, skills, and abilities that employees need in order to improve their human performance on the job. There will be many opportunities for training specialists for learning and for getting experience in developing hybrid-training programs. Also, trainees will be more responsible for their learning process in hybrid training; they will have more expectations of learning new technology skills, and will be much more motivated to participate in a training program that answers to their learning needs and learning styles.

Recommendations

In order to get the technology skills required to design this kind of training, the researcher recommends to any professional related to a training field to learn how to use effectively the new learning technologies available to provide training which can be combined within a same program that involve traditional and Web-based training. Before implementing hybrid-training programs, training specialists should know if trainees feel comfortable about these new instructional programs, if trainees have the technology skills needed to complete the Web-based part of hybrid training course, and what will be the outcomes for the company and for the employees whom participate in hybrid training programs, regarding to organizational goals and its three business musts.

Hybrid instructional systems applied to training implicate high cost and time consuming to develop them, therefore, the return-on investment for the company must be clearly explained in the hybrid training proposal. Also, trainers would apply some of the guidelines proposed by the training specialists interviewed for this research study. Those guidelines are related to adult learning theory, E- learning principles, use effectively in-class sessions, and they include cognitive domain performance objectives into web part of the program, affective or psychomotor domain type performance objectives must be covered in instructor-based training part. Finally, as a trainer, the researcher recommends to the professionals of training and development field contribute to raise training from the basement in today's organizations: being alert and ready for facing the continuous changes of technologies, techniques, and methods utilized in training and development area. For instance, the researcher provides relevant information about new training methods as hybrid instructional programs, which are improving human performance in contemporary organizations, satisfying different learning styles of trainees, and having a positive impact on current and future training needs. For that reason, the researcher recommends to training and development specialists to use hybrid instructional systems to provide training according to the trainees' needs and organizational goals.

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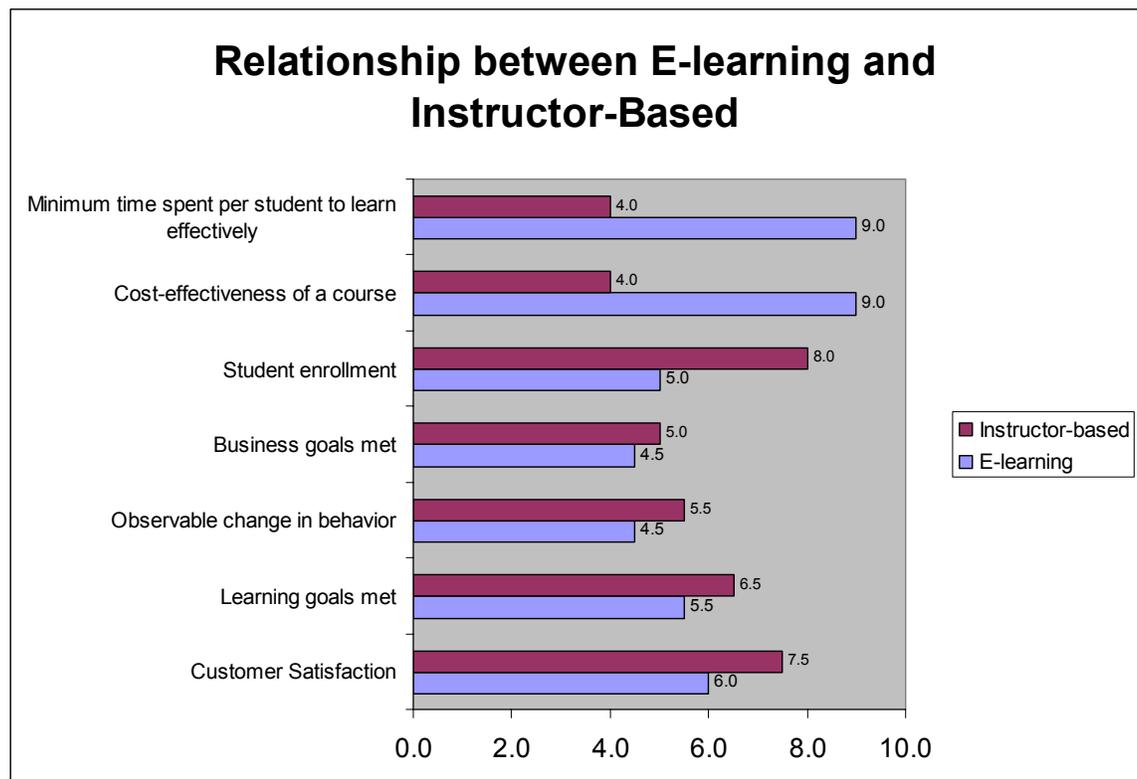
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Appendix #1



All scores are based on a scale of 1 to 10, where 1 is not effective and 10 is highly effective.

Source: Gartner,1999.

Appendix #2
DAU Hybrid Courses

As of Oct. 1 the DAU hybrid courses on the FY02 schedule are:

ACQ 201, Intermediate Systems Acquisition

BCF 211, Acquisition Business Management

LOG 201, Intermediate Acquisition Logistics

PMT 352, Program Management Office

PQM 201, Intermediate Production, Quality & Manufacturing

SYS 201, Intermediate Systems Planning, Research, Development and
Engineering

In addition to the hybrid courses identified above, the following DAU
courses are scheduled to convert in the second quarter from classroom to
hybrid:

CON 101, Basics of Contracting

CON 104, Principles of Contract Pricing.

Source: Took from, <https://dau.fedworld.gov>.

Appendix #3

UW-Milwaukee Hybrid Courses

Examples of online courses that can help to develop online modules of hybrid courses, are categorized by:

Teaching/Learning strategy (Pedagogy)	Type of Technology used	Academic Discipline: URL
Case Study	Text	<u>Medical Education</u> Post-test
Problem-based Case study	Text, Images	<u>Geography</u> : Click through the site for virtual field study
Concept demonstration	Text, Images, Animated graphics Streamed powerpoint, audio	<u>Physics</u>
Problem Solving	Still images, text, HTML Web sites	<u>World Literature</u>
Simulations/Labs	Applets, images	<u>Calculus</u>
Interactive lectures/tutorials	<u>Virtual Fly lab</u> Applets, scripts HTML, still images, Text Shockwave, macromedia	<u>Economics</u> - Stock tutorials <u>Mendelian Genetics</u> <u>Evolution</u>
Team Projects	Text, still Images Text	<u>Architecture</u>
Asynchronous Discussion Forums	Text Text Forums	<u>Literary Criticism</u> <u>American Literature</u>
Student Work/ On-line Projects	Text, still images, Videos	<u>Visual Culture</u>

Source: Took from, <http://www.uwm.edu/Dept/LTC/for-faculty.html>.

Date: June 11, 2002

To: Elena Angarita

cc: Dr. Steve Schlough
102 Communication Technology Bldg.

From: Sue Foxwell, Research Administrator and Human
Protections Administrator, UW-Stout Institutional
Review Board for the Protection of Human
Subjects in Research (IRB)

Subject: **Protection of Human Subjects--Expedited Review**

Your project, "The Impact of Hybrid Instructional System in Present and Future Training Programs," has been approved by the IRB through the expedited review process. The measures you have taken to protect human subjects are adequate to protect everyone involved, including subjects and researchers.

Research not completed within one year of the IRB approval date must be submitted again outlining changes, expansions, etc. to the research. Annual review and approval by the IRB is required.

Thank you for your cooperation with the IRB and good luck with your project.

SF:lk