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SPECIAL REPORT:
HYBRID EMS EDUCATION

Are You Ready to Go Hybrid?



Hybrid education can offer the perfect blend of online and classroom-based learning

The word “hybrid” is rapidly becoming part of the American vocabulary and is synonymous with a number of benefits, including lower transportation costs and increased fuel efficiency. These benefits are accomplished by blending electric motors and gasoline engines to power an automobile. Hybrid education is also a blending process that combines classroom-based education with technologically distributed teaching methods. Just like the automotive application of the term, hybrid education can lower the costs and increase the efficiency of the educational programs we offer.

Using technology to distribute education includes a number of methods, such as CD-ROM, videotape, satellite and the Internet. These methods are collectively referred to as “distributed” or “distributive” methods. Regardless of the technology involved, the common denominator of distributed methods is that teaching and learning can occur without an instructor and student being together at the same time and place, which is what makes these methods so attractive to EMS administrators, educators and field providers.

BENEFITS OF HYBRID EDUCATION

Three factors are driving the growth of hybrid EMS education: pressure to lower training costs; difficulty scheduling training, particularly for classroom-dependent programs like EMT-Basic and refresher training; and growing availability of technology as a solution for delivering effective education.

The cost of conducting required and optional training in an EMS organization is a significant part of the annual budget. Face-to-face education in a classroom or skills lab involves not only the cost of educator salaries, equipment and facilities, but also includes the salary expense of the students in attendance, as well as overtime costs paid to those employees who cover each student’s duty shift while he is in the classroom.

Scheduling training can be a nightmare for EMS administrators. In 2001, prior to implementing an online education system, the City of Orlando Fire Department reviewed the overhead associated with providing training to 350+ field personnel. Delivering a one- to three-hour training program to all personnel required offering the class twice a day for 18 days.²



Photo by Dan Limmer

Because rotating people through classrooms or training centers for all training is logistically impossible or cost-prohibitive for many fire-rescue organizations, many departments decentralize instruction by distributing a monthly teaching syllabus to company-level officers who conduct training at the station during duty shifts. Unfortunately, distributing curricula to be taught by personnel who may lack teaching expertise raises quality concerns regarding the consistency of education delivery.

Hybrid education offers a solution to cost and scheduling problems. In short, the majority of the EMS workforce now has access to the Internet either at home or work, which allows it to capitalize on the benefits of Internet-based distributed learning.

Perhaps the strongest attraction to hybrid education for EMS is that it caters to people who can benefit

Of all the technology available to us to distribute education, the Internet is clearly poised to be the dominant platform for delivering distributed education. Internet use for teaching and learning has been endorsed by the National Association of EMS Educators.¹

from an alternative delivery format because of their busy schedules, but who also need the face-to-face support offered in a classroom. EMS education often involves learning psychomotor skills, which are best accomplished in a hands-on environment, but there is plenty of information regarding associated signs, symptoms and scenarios surrounding the use of clinical treatment skills that can be effectively taught in an online environment. In a hybrid course, seat time in the classroom is reduced and a variety of course activities like lectures, multimedia demonstrations, simulations, discussion groups, and testing and written assignments can all be accomplished online.

The online portion of a hybrid course is usually accomplished through a learning management system (LMS), such as WebCT or Blackboard. These particular learning management systems typically support hybrid courses offered at local colleges and universities; however, EMS organizations can also set up their own learning management systems. There are companies that provide the LMS and technical support services necessary to set up an online learning program that can include hybrid courses. Off-the-shelf LMS software products are also available, such as Moodle (www.moodle.org), that provide a "do-it-yourself" solution for any EMS instructor who wants to offer a hybrid course.

DEVELOPING A HYBRID COURSE

The decision to offer a hybrid class is often driven by the difficulties associated with getting people into the classroom. While a hybrid course may solve a scheduling problem, the technology involved can create new problems. Careful planning is necessary if a hybrid course is going to be successful. Research on barriers to introducing hybrid education programs in higher education provides insight into the challenges an EMS organization can expect.³ They include:

- Limitations of instructor and student technical expertise
- Resistance to organizational change
- Feeling threatened by technology
- Access to worksite computers
- Instructor time needed for online components of course development.

Tips for Going Hybrid

If you are thinking about offering a hybrid course in your organization, the following tips will help you organize a more effective offering:

Begin with the end learning objectives in mind

Ask yourself what you want your students to be able to do at the end of the course. Then, line up the list of online and classroom sessions to achieve a step-by-step curriculum.

Don't underutilize the online environment

The online portion of your hybrid course should offer more than reading assignments. Many educators make the mistake of using the Internet as a text-only environment. In most cases, this is due to a lack of time to prepare or a lack of technical expertise on how to build multimedia and interactive online learning materials. The online environment can include lectures, video demonstrations of clinical skills, learning games, website links, reference library materials, written or audio slideshow clinical case studies, group discussions, and self-assessment quizzes and opinion surveys. I highly recommend that you investigate software products like Articulate Presenter and Quizmaker, Macromedia Breeze or Camtasia.

Emphasize interactivity rather than delivery

Classroom time is precious: Use it to provide your students an opportunity to interact with you and each other. Limit use of classroom time to deliver lectures that cannot be delivered effectively online. Online materials can present the didactic material related to specific illnesses and injuries and other aspects of EMS. Follow or intersperse online lectures with quizzes and learning

games. Follow a lecture with a focused online group discussion. Quizzes and discussion groups allow students to interact with the educational material and each other, and can help students and instructors determine if the didactic material is being mastered. An online video can demonstrate associated clinical skills and technique in preparation for maximizing interactive time between instructors and students in a classroom-based skills lab. Carry over or summarize online discussions, quiz results and lecture highlights as an introduction to the classroom session. This is an excellent way to segue from the online to the classroom environment.

Be aggressive in managing online participation expectations

Students who are new to online education and have spent years developing work habits that support classroom-based learning will need to be carefully monitored to make sure they adapt to the online portion of a hybrid course. Waiting until the last minute to view an online lecture, take a self test or engage in a focused group discussion assignment will limit the effectiveness of these activities. You may need to set specific due dates for online activity prior to classroom sessions. Inform students that they are responsible for integrating the online portions of the course into their personal and professional schedules in a way that will allow them and other students in the class to be successful. Dropout rates for online courses are typically higher than for classroom-based courses because students often underestimate the time they will need to spend online, or they fail to establish a realistic schedule to participate in the online portions of a course.

Hybrid Education Across the Nation

The **Emergency Health Services Federation (EHSF)**, a state-funded regional EMS agency that provides education and system coordination support in south-central Pennsylvania, has developed a hybrid first responder course that includes 33 online training lessons with online voice lecture slideshows created with Articulate software. Each online lesson lasts between 20 and 40 minutes and is followed by a 20-question online quiz. The program's LMS is used to track student performance throughout the course and serves as a communications platform for students and student-teacher communications outside the classroom. The online program is interwoven with four classroom-based skills training sessions, each lasting four hours. The Federation is also in the process of designing a hybrid first responder-to-Basic EMT transition course that will build on the initial first responder hybrid course. In addition, EMS managers across the region recently met to outline the curriculum for a hybrid management succession education program for local paramedics and EMTs who would like to pursue management positions in the region's EMS organizations. The online curriculum and face-to-face sessions will deal with leadership, financial reimbursement and operations.

The **Milwaukee County (WI) EMS Education Center**, based out of the Milwaukee County Health and Human Services Department, provides educational support services for more than 300 paramedics. Over the last two years, it has offered a hybrid paramedic refresher education program that consists of monthly online lectures and quizzes and two days of classroom-based lectures and clinical skills refresher labs. The skills refresher training day is repeated several times each semester in order to better accommodate paramedics who come from eight different municipalities. Each paramedic must attend one classroom day each semester over a two-year period, which gives them the opportunity to train in a highly interactive team environment and to refresh their clinical skills for low-frequency and/or high-risk procedures like intraosseous infusion, esophageal intubation recognition, intubation

skills in difficult environments, and management of stopcocks and central lines. The classroom sessions are also used to emphasize skills that may be required for any research studies being conducted by the Medical College of Wisconsin's Department of Emergency Medicine that involve prehospital care delivered by paramedics. The online portion consists of 22 monthly online course modules consistent with the National Registry refresher course and recertification guidelines for mandatory and flexible topics and limitations on the use of distributed learning for recertification training. The program's LMS is used to build and deliver online lectures and quizzes, facilitate communication between instructors and students, track student progress, and automate the awarding of CE credit and distribution of CE certificates of completion. The LMS also allows local administrators to track student progress for members of their respective municipal agencies.

The **National Association of EMS Educators (NAEMSE)** currently offers an EMS instructor course in various cities across the country. This hybrid course provides an introduction to basic concepts of the education process. A portion of the course is conducted online prior to attending the classroom segment. The online portion consists of participant self-introductions and replies, reading assignments, listening to online lectures and focused group discussion assignments. NAEMSE instructor course coordinators report that a major benefit of the hybrid design is that course participants arrive at the classroom session already acquainted and have developed a working relationship with other members of their discussion group. Some of the online discussion group work is carried over for presentation by the groups during the face-to-face portion of the course. Discussion groups then remain intact for other exercises held during the classroom phase of the course. NAEMSE is currently working to move additional lectures and exercises to the online environment in an effort to reduce the number of days that future participants must spend away from home to attend the classroom portion.

Since many of these problems are interconnected within an organization, it is essential to have the organization's leadership on board as advocates of the hybrid education process. NAEMSE and, in particular, the NAEMSE Distributed Learning Committee, are excellent resources to network with other EMS educators who have interest and experience to share in this area.

When planning a hybrid course offering, the online component is unfamiliar to most instructors and will require more time and attention than the classroom component. It may take six months or more to get the online components ready to go before the initial offering. The ideal hybrid course effectively integrates the online and classroom portions to work in concert. Work that is done in the online environment should be aligned with a classroom session and be seen by students as clearly integrated to achieving the learning objectives of the course. Without this dynamic, students may see either the online or classroom portion of the course as a waste of time.

CONCLUSION

Hybrid education is an effective strategy for dealing with high training costs and scheduling constraints that affect many EMS organizations. Careful planning, assembly of appropriate technical resources and allowing instructors adequate time to prepare the online course content are basic requirements to ensure the hybrid course will be an effective education tool. The support of senior management in providing the time, training and resources instructors and students will need is a critical ingredient for success. Instructors should learn how to use online content-authoring software to expand their online component offerings beyond print-based materials. Learning management systems should be used to deliver the online portions of the programs. Affordable LMS solutions and technical support are available. ■

To learn more, contact
Jim Eastham at 877-435-9309
or e-mail eastham@emsed.com



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James N. Eastham, Jr., ScD, CEO of CentreLearn, LLC, Shrewsbury, PA, has been promoting online EMS education for over a decade. He was the founding chair of the National Association of EMS Educators Distributed Learning Committee.