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How to Choose the Best E-Learning Vendor for the Energy Workforce

By Peter Schmidt and Carolyn Pyrek, [ESI International](#)

Within the energy sector, the greatest change driving the need for improved approaches to learning and employee development is the demographic reality of an aging workforce within every professional discipline. Referred to in many energy industry studies as the "big crew change", the retirement pattern of skilled senior personnel over the next five to 10 years will require significant transfer of responsibility to new employees. One of the critical actions being taken in response to the rapidly approaching tipping point is education – transferring knowledge to the next generation of engineers and technicians.

Education is making a critical contribution to addressing the exiting expertise problem within the energy sector. Industry is enhancing in-house education and training capabilities often by working with educational organizations to develop new approaches to career-long learning.

While professional development remains an essential part of organizational health, it can be costly, too. Per capita training budgets in companies across the sector ranged from \$4,000 to \$8,000 in a recent survey conducted by *EnergyWorkforce*, with this cost expected to increase in coming years. The use of technology to deliver learning content has increased proportionally and companies are spending more on external services like content design, development and technical infrastructure for training delivery.

For five consecutive years, we have seen a significant upswing in online classroom enrollment as companies shift from in-person to online instruction to save on travel costs, reach geographically dispersed workforces and ensure consistent content delivery. According to current research, virtual learning, whether in real time or at the learner's own pace, differs little from live classroom training. Given the range of e-learning vendors available, it can be confusing at best to select the right online learning program. What should a training manager look for when evaluating Web-based training? How can he or she be sure that the program will be effective?

According to Work-Learning Research, there are eight principles to which an effective virtual learning program should adhere. When evaluating various vendors, CLOs would do well to consider the following points: learning contexts, practice and testing, level of feedback, repetition, learning over time, diversified material presentation, exclusively relevant information, and focus. Following are questions to ask when undergoing the selection process.

1. Aligning Learning and Performance Contexts

- Does the program contain integrated, energy-specific case studies that bring elements of the job into the online classroom?
- Does it contain realistic scenarios that provide context for each lesson?
- Do the lessons evaluate understanding by posing problems or challenges similar to the ones the learner may encounter on the job?
- Is there an opportunity to discuss, with an instructor/subject matter expert (SME) and with other students, how concepts apply to actual situations on the job?

2. Providing Retrieval Practice and Testing

- Does the program offer a pre-course assessment to establish the learner's knowledge baseline?
- Does each lesson contain a problem that tests the learner's understanding and ability to apply the lesson concepts?
- Are assignments, with feedback, a requirement?
- Is there a final exam at the end of the course? Note: Research shows that the very act of taking a test increases retention, even if the learner didn't study at all!

3. Providing Feedback on Practice and Testing

- Is there a feedback system in place in the event the student answers a lesson problem or final exam question incorrectly?
- Do all practice exercises within the online courses also provide the correct answer and a complete explanation?
- Do the students receive personalized feedback from an expert instructor/SME within 24 hours after submitting an assignment?
- Do the instructors participate actively, on a daily basis, in online discussions, providing personalized feedback to the users' postings?

4. Providing Repetition of Learning and Practice

- Does every lesson reinforce the challenges the learner would experience on the job?
- Are the assignments hands-on? For instance, do they just learn about the work breakdown structure (WBS), estimating methods, network diagrams, and project earned value—or do they actually build a WBS, estimate a project, construct a network diagram and calculate earned value?
- Do the exercises and instructional games, as well as the final exam, provide additional practice?

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5. Spacing Learning and Practice over Time

- Are the students given a timeframe within which they must complete the course?
- Is the content “chunked” into a series of lessons, making it easy for the learner to complete one lesson at a time?
- Is it a self-paced program that provides a guideline schedule to help learners plan and budget their time?

6. Presenting Learning Material in a Variety of Ways

- Is the course material diversified in terms of its delivery format, avoiding the dreaded “next, next, next” sequence of a slide show?
- Is the presentation of the content interactive and student-centered, allowing students to access content at will and to control at least some of the sequencing?
- Is the interactive content supported with additional online text in printable, PDF format?
- Does the course offer engaging and often interactive graphics to help learners visualize processes and relationships?
- Do the courses also offer practice exercises, problems, assignments, and online discussions—all with feedback—to reinforce the content?

7. Utilizing Relevant Information Only

- Is all content relevant to the course content—or are there gratuitous animations and gimmicky flash?
- When there are comics and games, are they clearly instructional and tied to specific learning objectives?

8. Helping Learners Focus on the Most Important Information

- Does the course supply a syllabus that summarizes the major topics covered in each unit and identifies the specific learning objectives for each unit?
- Do scenarios and problems emphasize the key focus of the lesson?
- Are there opportunities to complete exercises that strengthen the emphasis?
- Do the individual content resources incorporate sound design principles in order to clarify and emphasize important points, including screen layout, font size and type, and graphic design?
- Are all the questions on the final exam tied to a specific learning objective, ensuring that the test itself continues the focus on core content?

If you answer ‘yes’ to every question, you can have confidence that the program you are reviewing is instructionally sound and that users will retain and be able to apply their newly acquired knowledge and skills. But, if you see gaps in the program’s offering, move on until you find the most appropriate online course to match your needs. The selection process will be less arduous if you know what you are looking for. The importance of establishing top-quality, versatile e-learning programs for your most important resources—the people you employ—cannot be overstated. Evaluating the available courses beforehand will improve your chances of success, strengthen your return on investment and ensure a vibrant learning organization in the long term.

The exodus of technical expertise in the energy sector will continue to accelerate. It is necessary to view this exodus not as a short-term problem, but as a long-term opportunity to train and develop a more versatile, skilled and technically savvy generation of engineers and technicians. Decisions on investments in people are just as important as the decisions on investments for infrastructure and capital equipment. E-learning helps to create an organizational capability for self-renewal through knowledge retention and transfer. These new and innovative learning models incorporate the best of people and technology to optimize the effectiveness of scarce human and financial resources.

Peter Schmidt, Director, Engagement Management, ESI International, has almost 20 years experience as a project management professional and has spent more than a decade focused on the energy industries in North America, Europe and the Middle East.

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