

## **Training: Designing for Lasting Change**

*Bobbi Tannenbaum, KEMA Inc.  
Robert Wirtshafter, Wirtshafter Associates, Inc.  
Deborah Laurel, Laurel and Associates*

### **ABSTRACT**

Energy program implementers offer education and training to overcome information as a barrier to the adoption of energy efficient products and practices. This paper is based upon two research efforts and supplemental activities to identify Best Practices (and the barriers to implementing them) in adult (energy) education. In 2004, we conducted case studies of six California energy workshops that were not meeting their objectives. In a related effort we conducted telephone interviews to identify Best Practices in adult Education and Training. In April 2006, as part of the 2005 CPUC approved ETS evaluation, we offered a “train the trainers” workshop. The dual purpose of the workshop was to identify additional barriers to the implementation of Best Practices, while communicating Best Practices in design and instruction to energy education professionals

Through these efforts and secondary research, we identified various Best Practices in adult education and training in three main areas: marketing, design and implementation, and evaluation. In this paper, we discuss these Best Practices as they apply to energy education and identify the barriers to their implementation, particularly at utility sponsored Energy Centers. The Best Practices and the identified barriers, however, apply to much of the energy education efforts throughout the US.

The adoption of Best Practices in the energy industry could result in substantial changes in the outcomes of energy education efforts – outcomes that lead to behavioral changes and the increased adoption of energy efficiency measures. Wholesale adoption of Best Practices is unlikely to occur unless the goals of education funders or regulators is refocused from achieving attendance targets to demonstrating changes in participant behavior.

### **Introduction**

Energy program implementers offer education and training to overcome information as a barrier to the adoption of energy efficient products and practices. We often teach energy professionals and end-users the “Best Practices” of equipment operation or maintenance. We research and report on Best Practices for Program Planning, Design and Implementation. And yet, often we do not employ Best Practices for energy adult education and training. In a 2004 ACEEE paper Marge Anderson, an education and training professional, reported that “The state of training in the energy efficiency industry is a mixed bag – excellent programs exist, and so do ineffective programs.”<sup>11</sup> In this paper we, as evaluators and a training professional, explore why it is a mixed bag by identifying the barriers to implementing of Best Practices.

---

<sup>11</sup> Education by Design: Creating Lasting Market Behavior Change through Education & Training *Marge Anderson, Energy Center of Wisconsin*

The paper will provide an overview of E&T Best Practices and discuss the barriers to implementing E&T Best Practices in the energy industry, as identified through evaluation research on the California Energy Centers. We discuss the Best Practices and the barriers in three areas – marketing, training, and evaluation.

## **Methodology**

This paper is based upon two research efforts. In 2004, we conducted case studies of five energy workshops<sup>2</sup> held in 2003 that were not meeting one or more of their objectives. The workshops were offered through the California Statewide Education and Training Services (ETS) program through the utility Energy Centers. The ETS program is funded through the California Public Goods Charge and the evaluations were overseen by the California Public Utilities Commission. The Best Practice and evaluation findings, however, apply to Center courses funded from other sources, as well as to other energy education courses offered throughout the US.

The Centers provide training to energy trades people and professionals, as well as to commercial and industrial end- users. The Energy Center directors independently identified the courses for case study analysis. In all cases, the primary issue identified by the Center Directors was either low attendance at individual classes, insufficient attendance to justify offering additional classes for a particular course (despite the expectation that there would be high demand), or a desire to broaden the base of attendees at a course.

We designed the research for each case study around the issues identified by the Energy Center staff. Research approaches included surveys with workshop participants and non-participants, in-depth interviews with participants, trade association representatives, other professionals offering training on similar topics, and subject matter experts. We also conducted background research, where needed, to more completely identify the issues and potential solutions.

In a related effort we conducted telephone interviews to identify Best Practices in adult Education and Training (E&T). We conducted in-depth interviews with five organizations responsible for adult education and training. We selected the five interview respondents from two types of educational organizations: those focused on energy or technical training, and organizations that specialize in training, regardless of topic. We selected organizations generally regarded as, or identified by industry experts, as leaders in the field of providing either adult education or energy training.

The results of the case studies and the Best Practices interviews activities pointed to similar findings. The case studies were independently conducted by three evaluators, yet the problems identified and the recommendations to address them bore common themes. The recommendations to address the workshops' unmet objectives were often Best Practices identified by education and training professionals. We identified additional Best Practices based on secondary research.

In April 2006 we provided an E&T Best Practices workshop (the Technical Trainers Toolbox) to 12 utility professionals involved in providing training at the California utility Energy Centers. The workshop focused on the training itself, not marketing or evaluation. As part of the training, we collected information directly from the participants (by asking them), and indirectly

---

<sup>2</sup> We conducted a sixth case study, PG&E's Tool Lending Library, but do not include it in this discussion because it is not a workshop.

(through observation and with workshop activities) on the barriers to implementing Best Practices learned.

## **The Case Studies**

The five cases studies were for courses offered in 2003 by four investor owned utilities in California. Each Center independently identified the courses to include in the case study analysis and the associated issues. The selected case study courses addressed a range of targeted audiences, from small business owners or managers, to energy trades and professionals such as architects and engineers. All focused on increasing attendance. For some of the courses, the Centers found that they were not filling the seats available for the course. Other Centers thought that demand for the course would be higher and were hoping to offer more workshops on the topic. One Center wanted more market segments represented in the workshops. The overall concern expressed by the Centers, however, was increasing the “butts in chairs (BIC),” and not on results from the courses.

In April 2006, we provided a Technical Trainers Toolbox training to 12 staff from the California utility Energy Centers. At the beginning of the two day class, we asked the participants to write down one thing that they hoped to get from the class to consider it a success. Three of the participants put “increasing attendance” or “butts in chairs” as the single most important item. In discussions with these and other staff at California energy centers, we learned that the Centers’ goals, as approved by the California Public Utilities Commission, are based upon the number of attendees at the various centers. Regulators use attendance as a performance measure because it is objective, and easy to track.

In late 2005, we interviewed the Center Directors again, discussing their funding levels goals, and overall objectives. During the interviews in 2003, one Center Director had discussed the wish to demonstrate energy savings from his Center’s offerings. In 2005, two additional Directors said that they felt an increasing need to demonstrate energy savings. They saw this need not as one to meet the requirements of the CPUC for the statewide ETS program, but instead, in anticipation of greater competition for other sources of funding for their Centers. Most of the Centers obtain funding from multiple sources, of which the Public Goods Charge for ETS funding is only one. They perceive increased competition for the other funding sources and believe that if they are able to demonstrate energy savings from some of their courses, they will be better able to continue obtaining these alternative funds.

The Centers have been able to meet their goals for attendance levels. Some of the Centers, however, are increasingly interested in changing attendee behavior in ways that produce demonstrable energy savings. This objective is consistent with a need to implement Best Practices in adult education. The centers are well positioned to achieve the goal of demonstrating savings from some of their course offerings.

## **Identified Best Practices**

A key focus of Best Practices is identifying approaches that lead to high learner retention and change in attitudes and behavior. This approach is “learner focused” and identifies teaching techniques that engage the learner so that action is more likely to result from the learning. “A frequent complaint about training programs is ‘poor retention.’ And this will always be the case if we do not allow time for a [practice or integration phase.]” (Meier 2000, 92). . .”learner-

centered and performance-based efforts result in training and transformation.” Stolovitch and Keeps 2002, 14).

This is an essential construct for the energy efficiency educators to embrace in moving forward. Courses will be more attractive to potential attendees if they are explicitly designed to motivate changes in behavior. Behavioral changes can be as simple as exploring energy efficiency opportunities or as sophisticated as changing HVAC installation practices.

We discuss the Best Practices in adult education in three main areas. The first is characterized as marketing. This involves knowing who the desired audience is and attracting them to the course. The second is design and implementation. Once you have identified the course composition and the desired changes, the instructional design can focus on best meeting these objectives through learner activities that allow for practice of the desired outcome. Finally, Best Practice involves evaluating the course on multiple levels (Kirkpatrick 1994) over time to both test for results (behavioral change) and identify necessary changes to achieve these results.

We found that the courses offered through the various Energy Centers rarely had clearly stated learner objectives – that is a desired course outcome that was included in the course description or marketing materials. Through interviews with Center staff we determined, however, that the courses offered do have underlying objectives beyond obtaining attendance. These objectives are described in Table 1 below, with behavioral changes identified by the paper’s authors.

**Table 1. Course Objectives**

<b>Center Identified Objectives</b>	<b>Target Audience</b>	<b>Behavioral Change</b>
To increase awareness of energy efficiency program’s and services offered by the utility	contractors, architects and engineers	Participate in utility energy efficiency programs and services.
To provide attendees the knowledge or skills to sell energy efficiency products or services to their customers.	all	Promote energy efficiency options to customers.
To provide attendees the knowledge or skills to increase the energy efficiency of the products and services they deliver	contractors, architects and engineers	Change specific design or installation practices to increase energy efficiency.
To increase attendee’s awareness of energy efficiency opportunities in their business.	end-user	Include energy efficiency options, when appropriate.

So, what are the Best Practices to achieve the Center objectives? We discuss these below under three areas; marketing, instructional design and evaluation.

**Marketing.** Energy centers are clearly reaching a market that is interested enough to attend the classes. Evaluations have shown that many of the classes are attended by people who have attended other classes at the Center and that marketing efforts are not designed to draw substantial numbers of new attendees. It is not clear, however, that the attendees at the courses have similar learning objectives as the Centers. The Centers need to expand their reach to draw more attendance from persons and firms that have not previously partaken in center activities and that include more learners interested in achieving goals consistent with the Center’s goals. (The actual goal may not be same, but the behavioral change may be. For example, an end-user may want to lower business operating costs and the Center may want to increase the adoption of higher SEER air conditioning.) Applying Best Practices in marketing would increase attendance

at the Centers, and perhaps more importantly, attract attendees who are more likely to take action as a result of what they have learned.

We identified the following Best Practices in marketing that would help achieve these objectives.

*Provide marketing messages that emphasize to potential attendees direct benefits to them from attending courses.* Effective marketing must convey the specific value of the course to the target market. The message should emphasize the specific benefits that attendees will come away with. While the goal of energy efficiency programs may be to generate energy savings, it must be recognized that that message is not always of greatest value to potential attendees. Centers will need to tailor different messages depending upon the course content and the audience. For example, a course that certifies contractors to participate in an energy-efficiency program could lead with “Stay ahead of the competition . . .,” mention “business profit and growth”, and talk about helping customers solve energy-related problems and increasing comfort and safety.

*Include in the course description the specific outcomes from the course.* Course descriptions should include the “learner objectives,” a list of the skills or tools that the learner will obtain by attending this course. Malcolm Knowles, the father of adult learning theory, identified as one of his adult learning principles “Adults have a need to know why they should learn something before investing time in a learning event. Trainers must ensure that the learners know the purpose for training as early as possible.” (Biech 2005, 26) For example, a description of a lighting course for designers might include the following statement. “Attendees will be able to specify energy efficient lighting for a variety of commercial settings, with particular emphasis on retail clothing and office space.”

*Increase the reach of course-specific marketing efforts by partnering with leading trade groups.* There are excellent examples of centers using local and regional trade associations for more effective target marketing; however, we found other examples where the centers did not take enough responsibility for maintaining the relationship and addressing the trade associations’ needs. Courses can also be marketed at professional conferences and trade shows. To be successful with trade groups and professional organizations, the Centers must work regularly with these groups and demonstrate to the organization the value energy education brings to the organization and its members.

*Identify and obtain certification to offer additional educational credits.* Adult learners have limited time in which to attend courses during the work week. Some are required to obtain, and are therefore motivated to attend courses that offer, continuing education. This gets “butts in chairs” and the instructor must then provide the motivation for learning and behavioral change.

*Target e-mail marketing to only those parties likely to be interested in the course.* The California Energy Centers have made great use of email lists (of former attendees) to market courses. Refining these lists so that recipients receive only course offerings that are targeted toward their interests or profession will increase the likelihood that the emails are read.

*Make course content specific to one (or possibly two) professions (or target audiences).* The Best Practice principles suggest that successful marketing starts with development of courses geared to the needs of a specific audience and marketed directly to them. “Adults are willing to devote energy to learning those things that they believe help them perform a task or solve a problem. Trainers who determine needs and interests and develop content in response to these needs are most helpful to adult learners.” (Biech 2006, 27) One case study of poorly attended lighting courses illustrated this principle. The courses were designed and marketed for a broad range of clients, ranging from lighting designers to architects and engineers. The

educational needs of these professions are different enough that a single course targeted to the three groups proved unattractive to all, as they perceived the courses as covering material not relevant to their specific needs.

*Bring some courses physically closer to the customers.* Some of the Centers offer courses through mobile units, at trade shows or conferences, or at remote locations. This is essential for reaching some customers who are located too far from Energy Centers to make the trip for a half or single day workshop.

*Charge for courses to demonstrate that they have value.* Courses offered for free are perceived as having less value than those for which there is a charge. Several Centers had courses for which registration was high, but attendance low. Participants (and their employers) will have higher expectations for courses with fees and will be more selective regarding those classes that they attend.

**Course design and implementation.** The Best Practice examination demonstrated a series of principles in adult learning that should be a part of every energy efficiency course. These principles begin with a need to ensure that the focus of the classes moves beyond one that is only a transfer of information from knowledgeable instructor to attendees, to one that empowers attendees to take specific actions. The lecture type of instruction is not very effective in communicating information that will be retained by attendees. More importantly, this approach is less likely to lead to the desired actions being taken. One of the trainers pointed out the “Cone of Experience and Learning” by Edgar Dale, shown below, which correlates remembering with level of activity. As shown in Figure 1, passive activities result in low levels of retention.

Best Practices in design an implementation incorporate learning activities that are likely to increase learning, retention and results. The activities are targeted to the specific objectives of the course and provide opportunities for learners to practice the desired behavior. We discuss key components of course design and implementation below. Best Practices garnered through the case studies, expert interviews and secondary research, include:

*Focus courses on obtaining actions not just transmitting knowledge.* This means identifying the desired actions before developing the course content and materials. Describe the outcomes in the marketing materials.

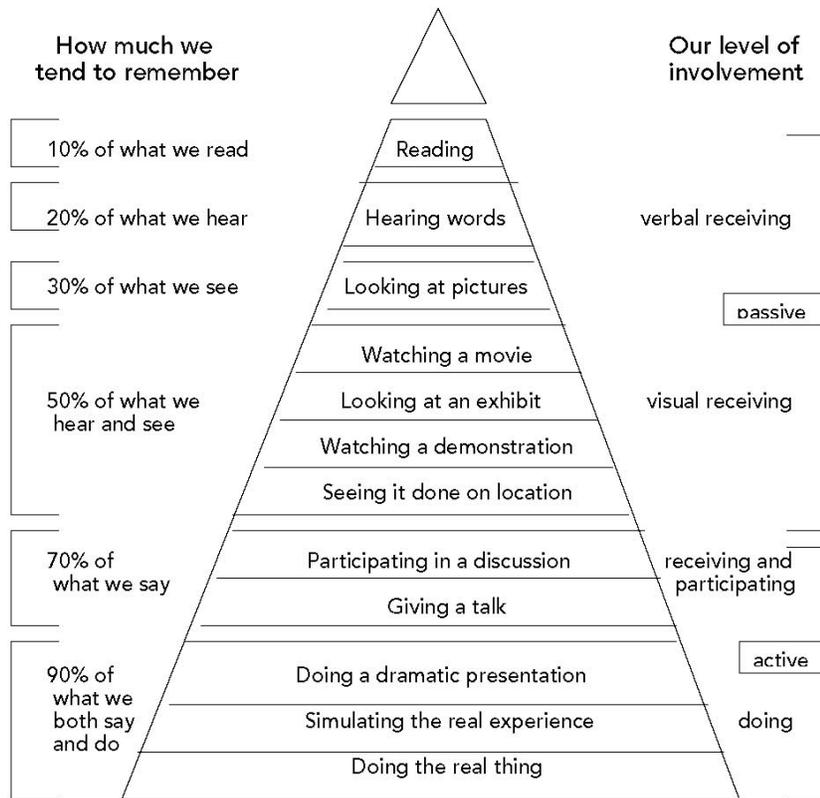
*Design the course materials to meet the objectives outlined in the course description.* The course materials and activities should be designed specifically to meet the learner objectives. All content and class activities should be focused on providing (or reinforcing) the knowledge and skills to the learners to result in the desired behavioral change outcomes.

*Structure course content so that it is practical and applicable to the participants in their jobs.* Adult learners are less interested in obtaining pure knowledge than in obtaining skills and tools that they can use in their job. “Adults have a strong readiness to learn those things that help them cope with daily life effectively. Training that relates directly to situations adults face is viewed as relevant.” (Biech 2006, 26) Employers are more likely to send staff to trainings that result in positive changes in how employees do their jobs.

*Limit course (or section) content to teaching of three major objectives.* Do not overwhelm attendees with too much information at once. Adults can only process so much before all the material, including the objectives is lost. This caution also speaks to the need for frequent changes in approach. If lectures are needed, they should be short and followed by an active activity that reinforces the message of the lecture portion. Many courses include a lot of content, but an increase in course content does not translate into an increase in the amount of

information that is learned. Classes can result in more behavioral change if the content is limited, but the material is learned and retained.

**Figure 1. Edgar Dale’s Cone of Learning<sup>3</sup>**



*Provide opportunities for attendees to participate and exchange ideas.* Adult learners bring experience and knowledge to the classroom. Learning is increased if participants recognize their own expertise, build upon it, and share it with others in the classroom.

*Structure courses so that they engage the attendees in active participation in order to retain information conveyed.* Several of the experts pointed out the need to move from passive learning to actively engaging the students in the learning. As one respondent pointed out, “Lecturing is easy, but the instructor needs to engage the student in the learning.” “(The practice or integration ) phase of the learning cycle can account for 70% o(or more) of a total learning experience. It’s in this phase that the learning actually takes place.” (Meier 2000, 91) Engineers may prefer problem-solving activities that require a calculator. Other student groups may be more extroverted and prefer interactive activities. Courses should provide attendees with opportunities to actively engage in the learning, not only by sharing what they already know, but by practicing what is being taught.

*Build in opportunities for post-training reinforcement.* Learning is achieved when lessons are reinforced over time. “...”even though something may be well-learned, if it is not used it can be forgotten. Consequently, once something has been learned, we need to increase the

<sup>3</sup> Adapted from Dale, E. *Audio-visual Methods in Teaching*. New York, The Dryden Press. 1946.

probability of its retention by changing the practice schedule from ‘massed’ to ‘distributed’ practice. Distributed practice means that material is periodically reviewed but with longer and longer time intervals between reviews. Distributed practice makes for very durable learning that is ‘forgetting resistant.’” (Hunter 1994, 102) The classroom is the massed practice, reviewing or using class lessons in the workplace is distributed. Some instructors incorporate student action plans (as discussed above) as one method to increase the likelihood of practice. Follow-up emails, and telephone calls can also facilitate this learning.

*Structure each workshop so that each attendee leaves with an action plan developed by that attendee.* Learners are more likely to change their behavior if they have a plan for how to implement what they have learned. Developing an action plan allows the learner to apply what they learned in the class to their job and determine what they need to do to make it happen. An additional benefit is follow-up evaluations can address the learners action plan to determine what changes resulted from the class and identify the barriers to implementing the plan.

**Evaluation.** Best Practice includes a heavy reliance on evaluation as an integral part of any course. Evaluation should be used to determine if actions are being taken as a result of course attendance. Kirkpatrick identifies four levels of evaluation that progress from participant reaction to results. (Kirkpatrick 1994) The first level addresses how the participant liked the experience. A more positive experience is likely to result in more learning and the evaluation demonstrates to the learner that the instructor cares about their reactions. It can be used to modify courses for improvement.

Level 2 evaluation focuses on the learning. This is often incorporated into the classroom activities, in which the learner exhibits their new knowledge by demonstrating new skills or answering questions.

Level 3 addresses behavior change when the learner returns to the work-site. It is used to determine if the course skills are being transferred to the workplace. There are challenges associated with when and how to determine this and it is rarely performed.

Level 4 evaluation focuses on results. In the energy industry we would call this an impact evaluation to measure energy savings, or an evaluation to identify difference in how an organization makes decisions, purchases or sells equipment. Again, this is rarely done.

Information from each prior level serves as a base for the next level's evaluation. Thus, each successive level represents a more precise measure of the effectiveness of the training program, but at the same time requires a more rigorous and time-consuming analysis. The Best Practices for evaluation include:

*Design evaluations to collect more than just satisfaction information.* Evaluations should include marketing source, instruction quality, issues with course content, issue with setting, and helpfulness in moving to actions.

*Conduct evaluations early and often, especially for courses that span several days.* Waiting until the end of a course does not help current attendees. Conduct follow-up evaluations for key courses several months after the workshop to determine changes in behavior.

*Design evaluations to address the specific objectives of the course.* The evaluation should be designed to assess the desired changes in behavior the course was designed to address. Check to see how well the learner felt the courses specific objectives were met and what could be improved to better meet these objectives.

*Act on evaluation findings.* Evaluations can reveal weaknesses in course content and delivery. They are only useful, however, if the findings are communicated to those who can

make changes, and if the recipients of the information are motivated to make changes. Course instructors, even those from outside the provider's staff, should be informed of both the positive and negative evaluation results, and assisted in refining course materials to better meet objectives. Best Practices include comparing evaluation results both over time (for the same class and instructor) and across classes.

### **Barriers to Implementation of Adult Education Best Practices at Centers**

We identified a list of barriers to providing Best Practices in energy education through the case study analysis, interviews with staff at the various California Energy Centers, interviews with other energy education professionals, and by asking the attendees at the Technical Trainers Toolbox training.

**Barriers to best practices in marketing.** Centers have little motivation to change their marketing approaches. They are able to meet their current goals, which are focused on course attendance and attendee satisfaction, through existing marketing channels. There are no milestones that measure training effectiveness or rewards for affecting behavior changes and actions taken as a result of the training

Many of the Best Practices in marketing would require additional staff and financial resources. If budgets remain stable, these resources would be taken from other activities associated with offering the courses.

Most Centers have institutional barriers to charging for courses. First, the costs to administer charges may not compensate for the additional revenue generated. Second, the courses are seen as a customer service, and Center staff are concerned that the customers will resent being charged for what was formerly provided for free. They are also concerned that this will result in lower attendance and present additional challenges to meeting attendance goals.

Marketing messages for some courses cannot be improved until the courses are improved, in terms of better defined objectives and more targeted audiences.

**Barriers to best practices in design and instruction.** Centers have little reason to change the way the courses are taught. Courses are well attended and evaluations filled out at end of course consistently give courses excellent ratings. The Centers are unlikely to change their practices unless they find a need to do so. The interviews with Center Directors indicate that they are starting to feel this need. They do, however, face barriers to implementing the Best Practices in Design and Instruction.

Instructors are reluctant to change an existing course that has proven successful (based on satisfaction surveys). Changing a course represents a significant investment in time that many instructors are unwilling or unable to undertake. They may have little motivation or time to spend on course preparation and may not be compensated for course preparation time.

Course instructors are "subject matter experts" and are rarely trained in adult education. They are valued for the knowledge they possess, not for their teaching expertise. They are likely to be unfamiliar with the Best Practices discussed above, especially active learning approaches.

Course instructors are comfortable providing information in the lecture style. Many of the instructors have only been exposed to lecture style instruction and were successful learners in that teaching environment.

Instructors may not appreciate that many adults learn differently than they did. The material they are covering is so ingrained in their experience that they may not realize how much of what they know was learned through doing (not listening). They may not effectively convey all of the steps needed to students facing their first exposure to the material.

Instructors may feel it important to establish their credibility by being an expert, rather than a facilitator of information. These folks perceive that letting students participate in the discussion of information undermines their position as expert.

Centers lack total control of course curriculum and teaching approach. Centers rely on subject matter experts from outside their organizations to conduct the trainings. These experts are much in demand and reluctant to change what is already established.

Instructors who are consultants in the industry may be less motivated to transfer knowledge to attendees. Providing instruction may be viewed as a marketing opportunity in which they want to remain the expert.

**Barriers to best practices in evaluation.** Centers have little motivation to change their course evaluations. Current evaluation approaches result in positive results, are low cost, and easy to administer. Most courses receive very high satisfaction ratings on the components for which they are rated. Employing Best Practices in marketing, course design and implementation, and evaluation is likely to result in lower overall satisfaction ratings. This is partly because the ratings are so high that the best that could occur is to remain at current levels. They are likely to decrease as attendee expectations are raised and evaluation questions become more directed to specific aspects. Centers that are motivated to demonstrate behavioral changes or direct energy savings, however, will be motivated to implement Best Practices.

Best Practices in evaluation are likely to increase the costs associated with conducting the evaluations. More course specific evaluations require more effort for design, implementation and analysis. Communicating and acting on the evaluation results also increases staff and trainer time. Comparing evaluations across courses and over time represents another additional cost. Center staff would need to acquire the tools (software) and skills to effectively design, analyze and act on the evaluations.

### **Overcoming Barriers to Best Practices in Evaluation.**

The greatest barrier to implementing Best Practices at the Energy Center is lack of motivation. We do not mean to imply that the Centers do not strive to do good work and motivate learners to change attitudes and behavior. There is, however, little or no pain experienced from conducting classes in their current format. The sense of pressure to achieve change, however, does provide this motivation.

Implementing Best Practices in adult education at the Energy Centers involves an additional investment of staff and financial resources. To address limited financial resources the Centers may want to focus their efforts. First, they could identify courses that are likely to achieve energy savings or behavioral change, and can more easily be modified, to employ Best Practices. For example, courses that are taught by Center staff and address specific skills to change behavior. Use these courses as starters for implementing Best Practices. Second, the Centers may want devote limited resources to offering fewer, but better courses. If the more limited course offerings are better marketed, delivered and evaluated to produce behavioral change, the overall outcomes from the courses may be improved.

While the Centers have limited control over subject matter experts, they do have some leverage. Centers can incorporate into their contracts with instructors specific requirements for clear learner objectives and activities. Many of the subject matter experts provide similar courses across multiple Energy Centers. By coordinating in their contract requirements, the Centers will obtain more leverage with which to change the practices of these instructors.

## Summary

This research identified many Best Practices that are inconsistently applied to energy education efforts at California Energy Centers. The Centers are currently meeting their goals and providing valuable and useful classes to their customers and the businesses that provide services to them. The Centers are well positioned to improve on a solid foundation that includes good marketing channels, substantial and quality infrastructure, and talented (and knowledgeable) instructors both within and outside their organizations.

The motivation to make changes to the Centers' courses is growing. As funding for education and training gets tighter and the need to achieve energy efficiency goals throughout the utility grows, motivation to offer classes that result in specific behavioral changes may increase. Some Centers are already making changes (based on statewide evaluation recommendations) to their classes to employ Best Practices. These Centers want to be able to demonstrate energy savings as a result of specific course offerings to either maintain current funding levels, or to obtain funding from additional sources to increase their course offerings.

The barriers to implementing Best Practices are many. As long as goals are tied only to attendance and satisfaction levels, dramatic changes at most Centers are unlikely to occur. Incremental changes, and redesign of key courses, can and will occur as information on Best Practices in adult learning is communicated to Center staff and the instructors. The need to compete for funding (other than statewide ETS Public Goods Funds) is also providing an impetus for change.

## References

- Anderson, Marge. 2004 "Education by Design: Creating Lasting Market Behavior Change through Education & Training" In *Proceedings for ACEEE 2004 Summer Study on Energy Efficiency in Buildings*
- Biech, Elaine 2005 *Training for Dummies*. Indianapolis, IN.:Wiley Publishing.
- Bowman, Sharon, 2005 *The Ten Minute Trainer* San Francisco, CA.: Wiley and Sons, Inc.
- Bob Pike Group. In-depth interview, 2005
- Dale, Edgar. 1946 *Audio-visual Methods in Teaching*. New York, NY.:The Dryden Press.
- Energy Center of Wisconsin –In-depth interview, 2005

- Hunter, Madeline. 1994. *Mastery Teaching: Increasing Instructional Effectiveness in Elementary and Secondary Schools, Colleges and Universities*, Thousand Oaks, CA.:Corwin Press.
- Hunter, Madeline. 1994 *Enhancing Teaching*, New York, NY.:McMillan College Publishing.
- KEMA-XENERGY. 2003 *Evaluation of the 2002 Statewide Education, Training and Services Program, Final Report* December 16, 2003; prepared for Southern California Edison, Pacific Gas & Electric Company, San Diego Gas and Electric and Southern California Gas Company.
- Kirkpatrick, D.L. and James Kirkpatrick. 2005 *Transferring Learning to Behavior: Using the Four Levels to Improve Performance* San Francisco, CA.: Berrett-Koehler.
- Kirkpatrick, D.L. 1994. *Evaluating Training Programs: The Four Levels*. San Francisco, CA.: Berrett-Koehler.
- Laurel and Associates, In-depth interview, 2005
- Meier, Dave, 2000 *Accelerated Learning*. New York, NY.:McGraw-Hill.
- Northwest Energy Efficiency Council. In-depth interview, 2005
- OCM BOCES, New York In-depth interview, 2005
- Stolovitch, Harold. 2002 *Telling Ain't Training*. Alexandria, VA.:American Society for Training and Development.
- Wirtshafter Associates, Inc. 2005. *Evaluation of the 2003 Statewide Education and Training Services, Final Report* June 3, 2005; prepared for Southern California Edison, Pacific Gas & Electric Company, San Diego Gas and Electric and Southern California Gas Company