

# California's Surface Water Ambient Monitoring Program Training and Learning for Citizen Monitors National Water Quality Monitoring Conference May 2006



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## WHY DO WE NEED TO TRAIN?



- To ensure that our programs will produce confident, assured, usable information that government agencies, waste generators, and the public need to make environmentally sound decisions.
- To improve communication and facilitate education about surface water and non-point source pollution.

**Do you think that these are the same reasons  
people seek training?**

**Are there other reasons why we might train people?**



## When we conduct training are the people learning?

The most common type of training is “On-the-Job Training”: Someone showed another person how to do something and then asks the trainee to sign off. Never was the trainees skills tested. No one asked the trainee to demonstrate proficiency. One simply observed another person doing what they were supposed to learn, and they said they were "trained."

✓ The problem? That's not training.

We must remember that the ability to stand up and talk does not make a trainer. In the same way, just because someone was shown how to do something doesn't mean they've learned.



There is no magical trick to good training, it takes time and energy.



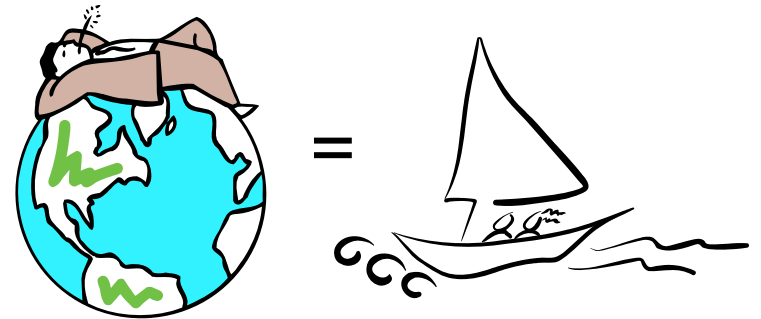
If you think about the time and money lost from people not performing tasks correctly, then the investment of training was lost. Time spent up front is small by comparison of time lost acquiring unusable data.

BOUND FOR SUCCESS?



VS

MIGHT FIND SUCCESS?



# Training Specialists:

One of the many options is to obtain a trainer to answer your training needs. Whether you stay “in-house” or “out-source” there is basic questions and understandings that you should know.

**Key questions you might ask  
your trainer or yourself :**



How will you make sure people get the right training?

How will you get and hold their attention?

How can you ensure that your training sticks?  
can they be trained?



# Training Program

Since most Citizen Monitoring organizations have limited funds the most frequent choice is “in-house” training. Unfortunately not all groups have a member that can or is willing to provide the type of training experiences needed.

Options:

- Obtain free training from a qualified trainer/instructor.
- Combine training of citizen monitors from several different organizations.
- Have a trainer trained by another organization
- Become or develop your own trainer.



# “TRAINING IS TEACHING & TRAINED IS LEARNED”



As a trainer we can benefit by knowing how people learn.

Higher Education seems to turn a blind eye to the quality of educational processes and results. Do not fall into that trap.

"... involving students in discussion fosters retention of information, application of knowledge to new situations, and development of higher-order thinking skills -- and discussions do this much better than lectures do. ...

... Yet 70 to 90 percent of professors use the traditional lecture as their primary instructional strategy."



## Becoming a Trainer

Many people, or you yourself, already have the skills that are desired for conducting Citizen Monitoring activities.

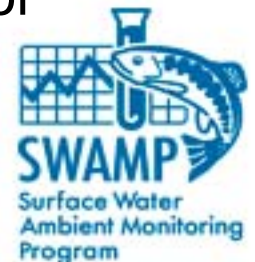
Through the following slide the Clean Water Team would like to present additional information that you find especially useful in developing and implementing your training program.





# Common Assumptions about Learning

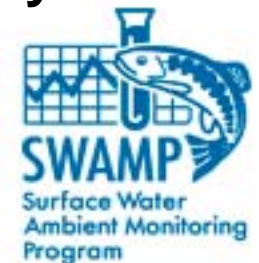
1. **Age may or may not affect a person's speed of learning, and individuals vary in way they like to learn.**
2. **Learning is more comfortable and effective when the environmental conditions support open exchange, sharing of opinions, and problem-solving strategies.**
3. **The depth of learning increases when new concepts and skills are useful in meeting current needs or problems.** This allows for immediate application of the theory to a practical situation.
4. **Availability and access to resources, such as exercise or practice facilities, may *enable* a person to carry out new plans of actions.** Other environmental conditions and family characteristics help to *reinforce* or hinder behavior changes.



# Ten Principles of Learning



1. We learn to do **by doing**.
2. We learn to do **what we do** and **not something else**.
3. Without **readiness**, learning is inefficient and maybe harmful.
4. Without **motivation** there can be no learning at all.
5. For effective learning, **responses must be immediately reinforced**.

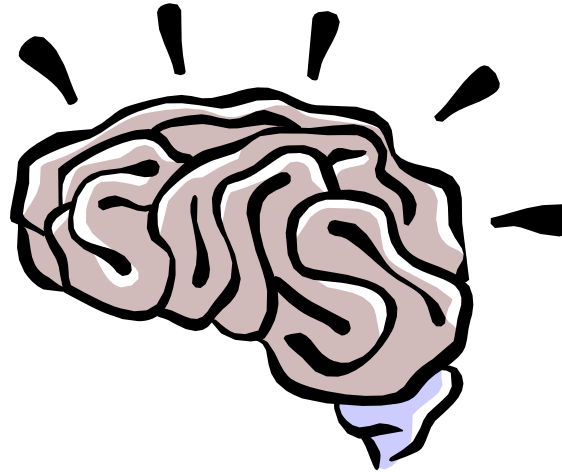


## Ten Principles of Learning Continued

- 6 **Meaningful** content is better learned and longer retained than less meaningful content.
- 7 For the greatest amount of transfer learning, responses should be learned in **the way they are going to be used**.
- 8 One's **response will vary** according to **how one perceives** the situation.
- 9 An **individuals responses will vary** according to **the learning atmosphere**.
- 10 **One does the only thing one can do given** the physical inheritance, background, and present acting forces



## The Adult Learner?



**How adults learn is not a preprogrammed brain file, nor is it installed in us when we're born or when we become a trainer.**

We must “learn” how to learn.



# Adults have special needs and requirements as learners.

Adults are *autonomous* and *self-directed*. They need to be free to direct themselves.

Adults have accumulated a foundation of *life experiences* and *knowledge* that may include work-related activities, family responsibilities, and previous education. They must relate theories and concepts to the participants and recognize the value of experience in learning.



Adults are *goal-oriented*.

Adults are *relevancy-oriented*. They must see a reason for learning something.

Adults are *practical*, focusing on the aspects of a lesson most useful to them.

Adults need to be shown *respect*.



# Motivating the Adult Learner

**At least six factors serve as sources of motivation for adult learning:**

**Social relationships:** to make new friends, to meet a need for associations and friendships.

**External expectations:** to comply with instructions from someone else; to fulfill the expectations or recommendations of someone with formal authority.

**Social welfare:** to improve ability to serve mankind, prepare for service to the community, and improve ability to participate in community work.

**Personal advancement:** to achieve higher status in a job, secure professional advancement, and stay abreast of competitors.

**Escape/Stimulation:** to relieve boredom, provide a break in the routine of home or work, and provide a contrast to other exacting details of life.

**Cognitive interest:** to learn for the sake of



## Barriers to Adult Learning

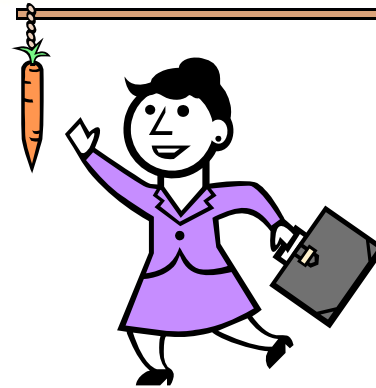
**Adults have many responsibilities** that they must balance against the demands of learning. Because of these responsibilities, adults have *barriers against participating in learning.*



**Not understanding motivation factors can also be a barrier.**



## Get “Motivation”



**The best way to motivate adult learners is simply to *enhance* their reasons for enrolling and *decrease* the barriers.**

Instructors must learn why their students are enrolled (the motivators); they have to discover what is keeping them from learning. Then the instructors must plan their motivating strategies. A successful strategy includes showing adult learners the relationship between training and an expected promotion.





# Additional Motivation to Learn

- Adults who are motivated to seek out a learning experience do so primarily because they have a use for the knowledge or skill being sought. Learning is a means to an end, not an end in itself.

**Hands on**  
**Motivational**  
**Goal Orientation**  
**Mentoring**  
**Test and Retest**  
**Certification**  
**Teaching Others**



- Increasing or maintaining one's sense of self-esteem and pleasure are strong secondary motivators for engaging in learning experiences.



## Tips for the Ages

The first step to making the ***generational diversity*** work is to understand what motivates members of different generations and to institute teaching techniques that are flexible enough to meet their needs.

It is important to focus not only on what needs to get done but on accommodating the work and learning styles of the various generations.

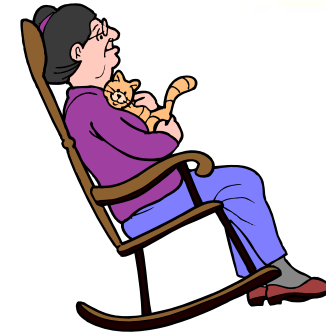
- Traditionalists
- Boomers
- X-ers
- Next-ers



# Tips for the Ages Continued

## ■ Traditionalists

- Traditionalists are the private, silent generation.
- A formal communication style is preferred.
- Don't waste their time.



## ■ Boomers

- Boomers value peer competition.
- Committed to climbing the ladder of success.
- This generation will accept people on an equal basis as long as they can perform to their standards.



## ■ X-ers

Believe in investing in their own development.

Prefer managing their own time and solving their own problems.



## ■ Next-ers

- Value positive reinforcement at accelerated rates.
- Wants more input into how they are learning.

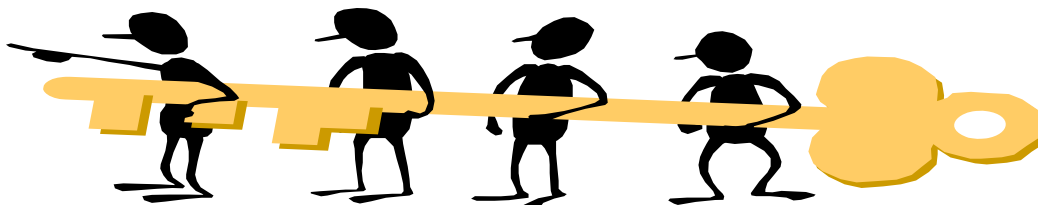


## Learning Tips for Trainers

There are four critical elements of learning that must be addressed to ensure that participants learn.

These elements are :

1. Motivation
2. Reinforcement
3. Retention
4. Transference



# Motivation:

## **Recognize the needs for the information.**

Tell your trainees why are you conducting the project for which they are being trained for?

## **Set an appropriate level of concern.**

The level of tension/stress must be adjusted to meet the level of importance of the objective.

**Set an appropriate level of difficulty.** The degree of difficulty should be set high enough to challenge participants but not so high that they become frustrated by information overload. The instruction should predict and reward participation, culminating in success.



# Reinforcement

Through reinforcement instructors encourage correct modes of behavior and performance.

## Positive reinforcement

As the name implies, positive reinforcement is "good" and reinforces "good" (or positive) behavior.

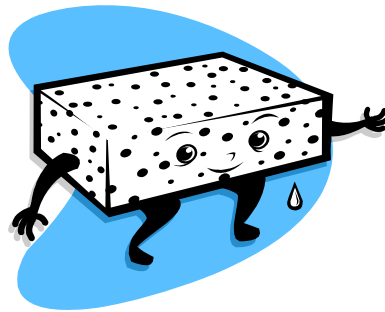
## Negative reinforcement

It is useful in trying to change modes of behavior. The result of negative reinforcement is *extinction* -- that is, the instructor uses negative reinforcement until the "bad" behavior disappears.



# Retention

Trainees must retain information in order to benefit from the learning. This understanding includes their ability to assign the correct degree of importance to the material.



- Simply stated, if the trainees did not learn the material well, they will not retain it well either.
- After a trainee demonstrate correct or desired performance, they should be allowed to use or urged to practice so the desired performance is maintained.



# Transference

Transfer of learning is the result of training -- it is the ability to use the information taught in the course but in a new setting. As with reinforcement, there are two types of transfer: *positive* and *negative*.

## **Positive transference**

Occurs when the participants uses the behavior taught in the course.

### **Positive transference is more easily gained when:**

Participants can associate the new information with something that they already know or if is similar to something that they already know

If the degree of original learning was high.

When the information learned contains elements that are extremely beneficial (critical) on the job.



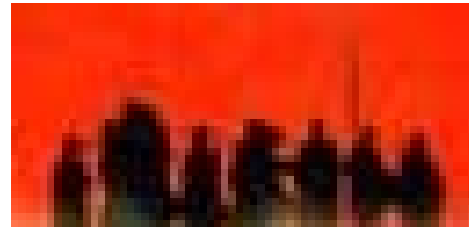


# Requirements of Good Training

- Good training is as much about passion as it is about reason.
- Good training is about substance and treating students as consumers of knowledge.
- Good training is about listening, questioning, being responsive, and remembering that each student and class is different.



# Seven Principles For Good Training



1. Frequent contact between trainer and trainees.
2. Develops reciprocity and cooperation among trainees.
3. Encourage active learning.
4. Provide prompt feedback.
5. Emphasizes time on each monitoring task being taught.
6. Communicates your expectations.
7. Respect diverse talents and ways of learning.



# More Requirements of Good Training

- Good training is about not always having a fixed agenda and being rigid, but being flexible, fluid, experimenting, and having the confidence to react and adjust to changing circumstances.



- Good training is also about style. Should good teaching be entertaining? You bet!.

- This is very important  
-- good training is about humor.

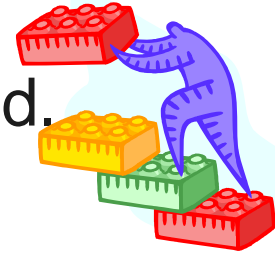


- Good training is about caring, nurturing, and developing minds and talents.



# Additional Requirements of Good Training

- Good training is continually reinforced.



- Good training is about mentoring.

- Good training is about having fun.



# Successful training should follow A four-step process:

1. Establish the mindset for being trained
  - Seldom is this mentioned in trainings
2. Add knowledge of principles
  - This is often ignored in workshops
3. Practice skills and techniques
  - This element is never ignored.
4. Get feedback on progress to reinforce desired behavior or to correct deviations.
  - Unfortunately this is usually not done.



# Successful training should answer four key questions:

1. **Why?** Tell the trainees about the organizations they are volunteering with and about the program's goals; and how the trainees support them.



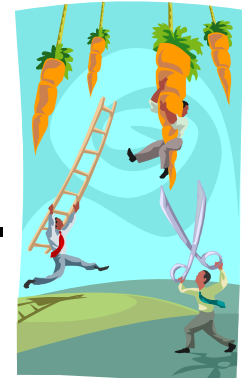
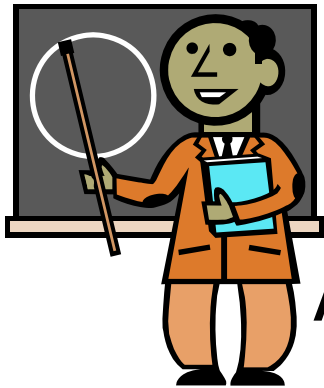
2. **What?** Simply communicate what the trainees will be doing after they are trained.

3. **How?** Explain the tasks that will need to be performed and under which circumstances.

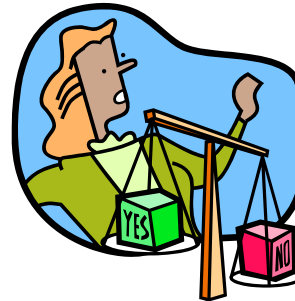
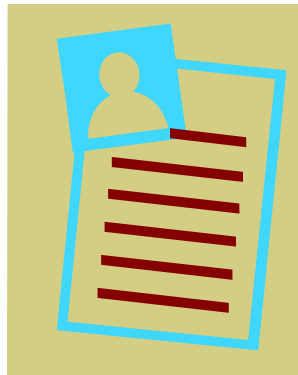
4. **How are we doing?** Evaluations as part of the training workshop and after training must be conducted. Trainees need to show competence.



# What should be included in my Training Workshop: Content VS Motivation?



Answer: You need a mix of both.



# Training Methods



Learning improves when the learner is an active participant in the educational process.

When selecting among several teaching methods, it is best to choose the method that allows the learning to become most involved.

Using varied methods of teaching helps the learner maintain interest and may help to reinforce concepts without being repetitious

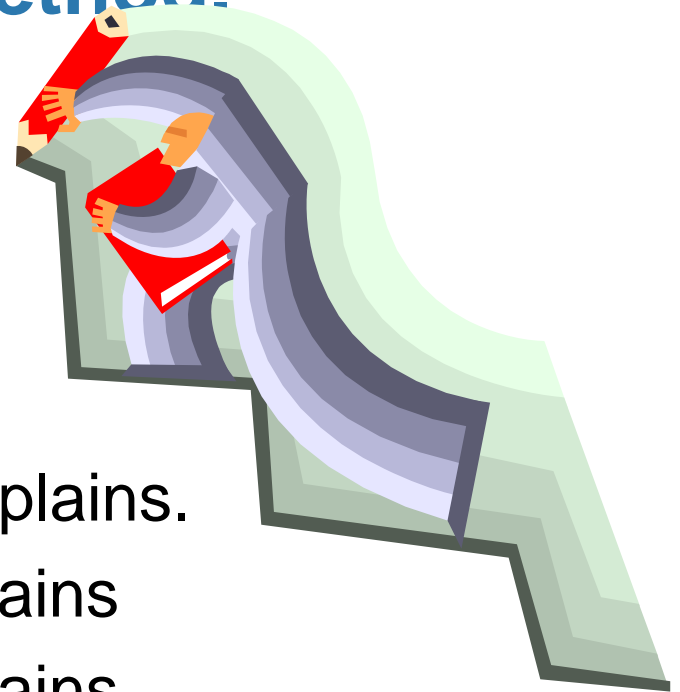




# Four Step Skill-Transfer Method.

This method combines cognitive and muscular learning.

1. Instructor Does, Instructor Explains.
2. Instructor Does, Trainee Explains
3. Trainee Does, Instructor Explains.
4. Trainee Does, Trainee Explains, Instructor Evaluates.



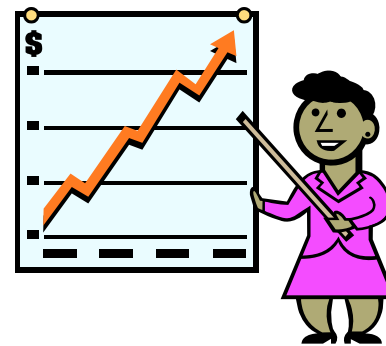
# Benefits and Costs of the Four Step Method

## BENEFITS:

- When teaching certain skills, it ensures solid learning.
- Avoids demonstrating once and then have to demonstrate again and again and correcting monitors mistakes later.
  - Saves time and resources.

## COSTS:

- It takes time and patience



## Fill the Role of a Trainer

Being a Trainer is a rewarding experience and is a vital role in all Citizen Monitoring programs.



Host or Attend a Clean Water Team  
“Train the Trainer  
Workshop”



THANK YOU



“Our mission is to preserve and enhance the quality of California’s water resources and ensure their proper allocation and efficient use for present and future generations”

S W R C B

