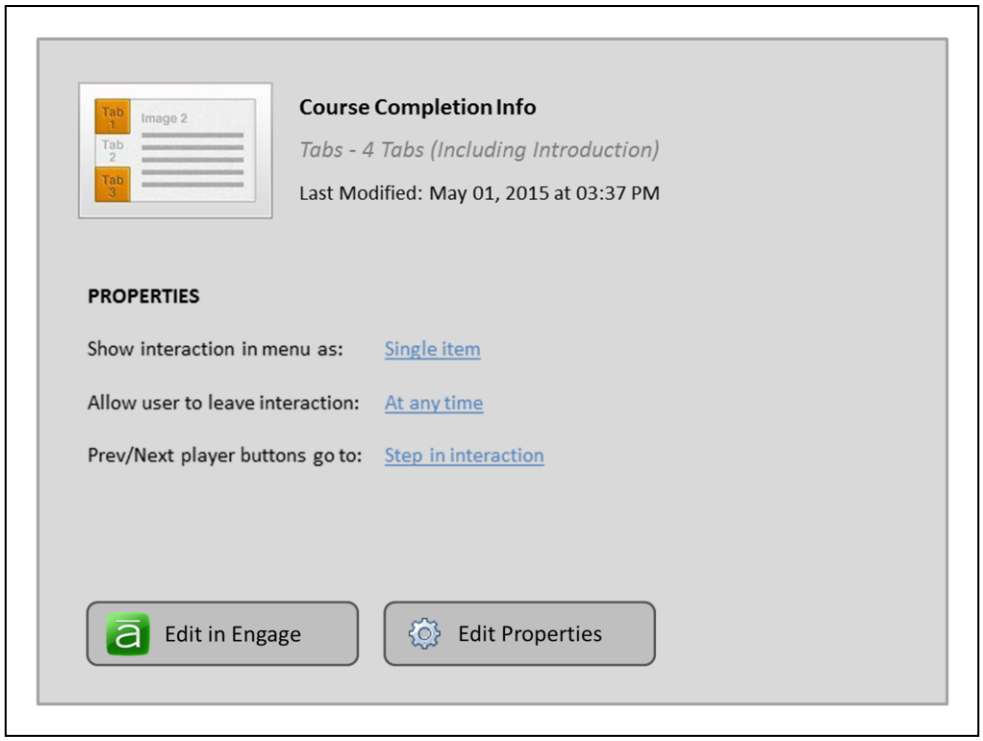
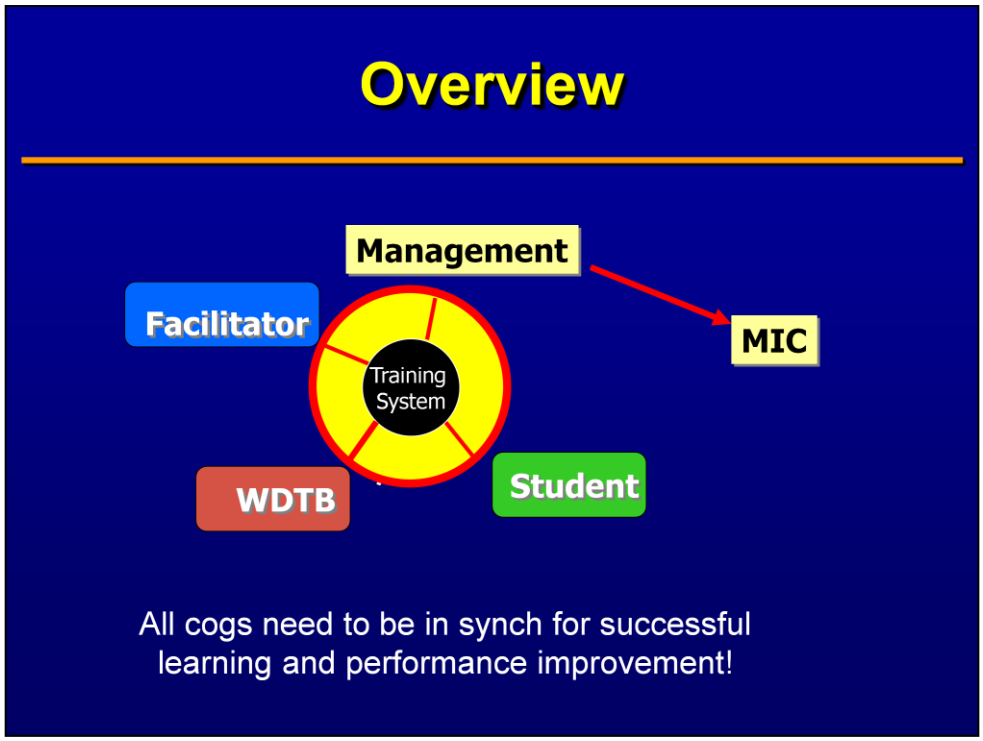
Hello, my name is Brad Grant of WDTB. This Instructional Component is designed to teach you how to maximize the learning process in AWOC. The lesson is the first lesson in the Core Track but the learning principles contained within can be applied to your participation in AWOC Severe Track as well.


Tab 1
Image 2
Tab 2
Tab 3
Course Completion Info
Tabs - 4 Tabs (Including Introduction)
Last Modified: May 01, 2015 at 03:37 PM
PROPERTIES
Show interaction in menu as:
Single item
Allow user to leave interaction:
At any time
Prev/Next player buttons go to:
Step in interaction
Edit in Engage
Edit Properties

Learning Objectives

1. Identify the key factors to maximize learning and transfer of learning in AWOC.
2. Identify the ways learning in AWOC is facilitated.
3. Identify how your learning in AWOC will be evaluated.

The learning objectives for AWOC Core 1 Lesson 1 are displayed on this slide. The goal of the lesson is to provide learners with a description of the ways learning are most successful and in particular, the various ways learning and transfer in AWOC are made easiest through facilitation and evaluation.



This lesson will take about 18 minutes and will discuss factors for effective transfer of learning into performance. For effective transfer of learning in AWOC, it is essential that certain factors be in place. A successful learning venture is optimized through a process of partnerships, with a primary focus on the learner and how that learning is to be transferred to job performance. Otherwise, the knowledge and skills will not transfer. In this lesson, I will describe the various factors and specific roles of each party shown here connected to the training system. All cogs need to be in synch for successful learning and performance improvement!

Since we use a blended approach in the AWOC , it is important to see how actions can be used to maximize learning in an operational shift-like environment. For example, web based modules can be taken self-paced, but instructor-led modules are to be taken live with your WDTB instructors, and simulations conducted with your SOO (or DOH). Thus, each mode affords different actions to maximize the knowledge and skills to be gained from each respective activity. We'll discuss how simulations are to be used the most effectively in the course.

What are the Factors for Effective Transfer of Learning to Performance?

Factors	Instructors	Students	Managers
Clear performance specifications	I	S	M
Necessary support	I	S	M
Clear consequences	I	S	M
Prompt feedback	I	S	M
Individual capability	I	S	M
Necessary skills and knowledge	I	S	M

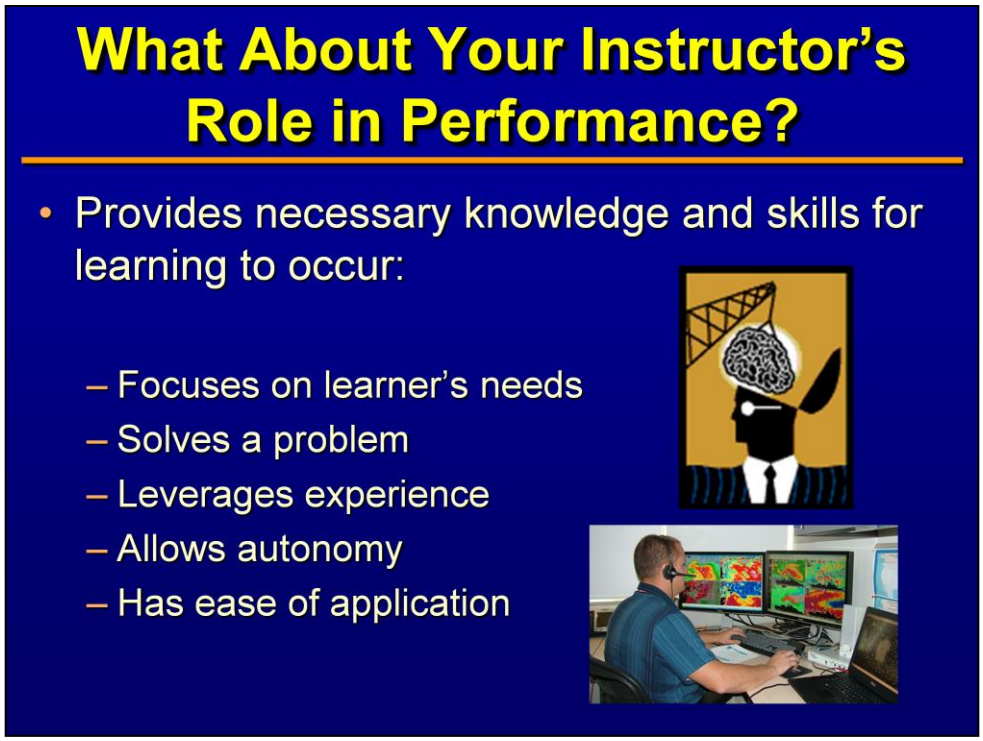
These factors have been determined from research by Broad and Newstrom (1992) and Broad (2005). For effective performance, it requires much more than knowledge and skills. All six of the factors in the table shown here are necessary to support full performance. For a specific performance requirement such as *NWS forecasters making accurate and timely warning decisions*, there are three main stakeholder groups:

1. Instructors (which are the WDTB training designers and facilitators)

2. Students (these are the learners/performers), and

3. Managers (which entail local supervisors all the up the management chain to senior executives).

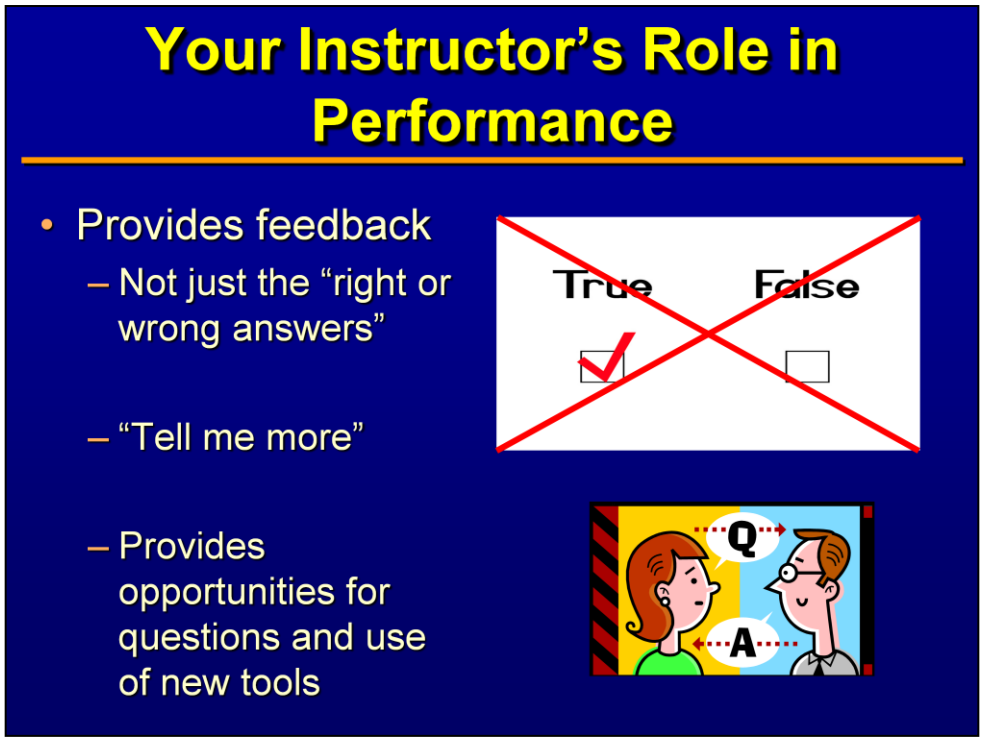
The red circle shows which stakeholder group is responsible for making sure each factor is in place. Note that Managers are primarily responsible for 4 out of the 6 factors. We are going to elaborate on each of the factors and look at roles and responsibilities of each group. Let's start with Instructors and their roles first.



The instructor's role in performance is multifaceted but the essential goal is to provide the necessary knowledge and skills in order for learning to occur. The focus must be on the learner's needs not on the facilitator's or the organization's needs. If learning solves a problem or avoids one, the mind will be more ready to receive the knowledge. Also, if the learning holds potential advancement and/or external expectations, or accomplishes a personal goal, then it can motivate a person to learn. Experience is also a critical part of learning as when it is considered, it makes learning outcomes much more effective (this is also one of the reasons simulations are so valuable).

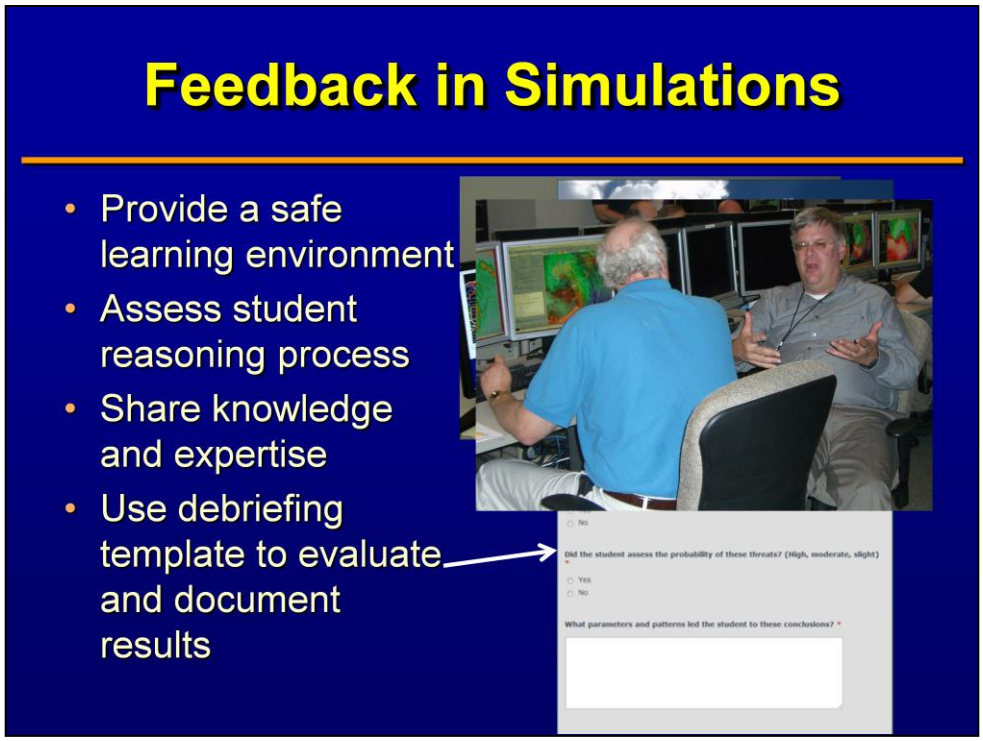
Also, adults learn best when the training is designed with built-in autonomy, that is, they take charge of their learning. They need opportunities to participate and contribute to the learning activity (not just be lectured to). Most examples of good training courses include many elements of learner autonomy. Group or individual work in which they decide on structure, format, and application is usually effective. For example, it can be a good idea to complete a simulation with a cohort. Finally, if there is credibility of the new skills and we have designed practicality with ease of application into the instruction, it accommodates the best transfer of learning into operational warning job tasks.

So, WDTB provides the knowledge and skills that you, the learner, can best use. We focus on the job tasks of the warning forecaster and all the skills required to make effective warning decisions. A successful learning transfer factor is when the training must provide a benefit. Since no forecasters are perfect, there is a real need for job improvement for this training. But you must want to learn. More on the role of the learner in a minute. There are more factors to discuss that optimize learning originating from the instructor's side.

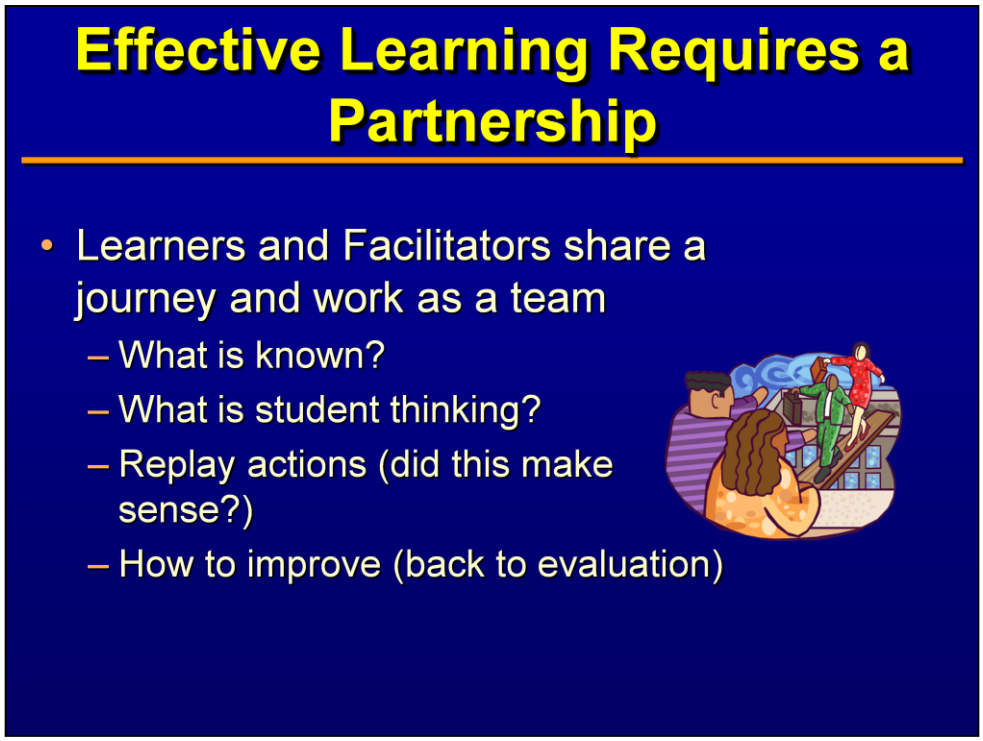


Feedback is most effective when it's prompt and immediately provided after a student has taken a module in the course. While there are assessments and quizzes which serve as learning interactions in each module, it is important to supply explanation for why the answers are the ones shown and especially, *how* the concepts can be applied. Since we can only hold a limited amount of information in our working memory, for the training concepts in AWOC to be transferred to long-term memory, it is critical to take the opportunity to have discussions with the instructor and especially the local facilitator on what has been learned. This is a type of feedback that typically has stronger and deeper retention. Seeing the application of the learning objectives through the viewpoint of an other forecasters will shed light and broaden your understanding of how the concept may be manifested with other examples.

Motivation, not cheerleading, is the goal of these actions. Motivation should be used to demonstrate to the learner why they should put forward the effort. So, good motivation leads students to achieve an expectation of the learning effort needed. The effort should pay off with a better understanding of the job tasks, which can lead to better decision making and performance results. As learning occurs, instructors and local facilitators need to be observing behavior changes. This evaluation process can occur on many levels. We'll talk a bit about some of the factors that go into simulations as they are a critical part of the AWOC training.



One of the most important responsibilities for the instructor is to provide feedback. Simulations in AWOC are intended to be accomplished with a local facilitator. Here are some specific actions for the facilitator in conducting simulations. Provide a safe learning environment. What does that mean? Well, in any learning environment it is very important for the learner to know everything is fair game. Think of the best learning you've been able to experience in your life. It has more than likely been in a situation in which it was okay to ask questions and make mistakes. In those environments, students feel free to ask long standing questions about stuff you were “suppose to have learned' but never really grasped. Next, make sure you assess the student's reasoning process – ask them ***why*** they made a certain decision. Use the opportunity to share knowledge and expertise. There is a prepared debriefing template which should be used to record and evaluate student performance during the simulation.

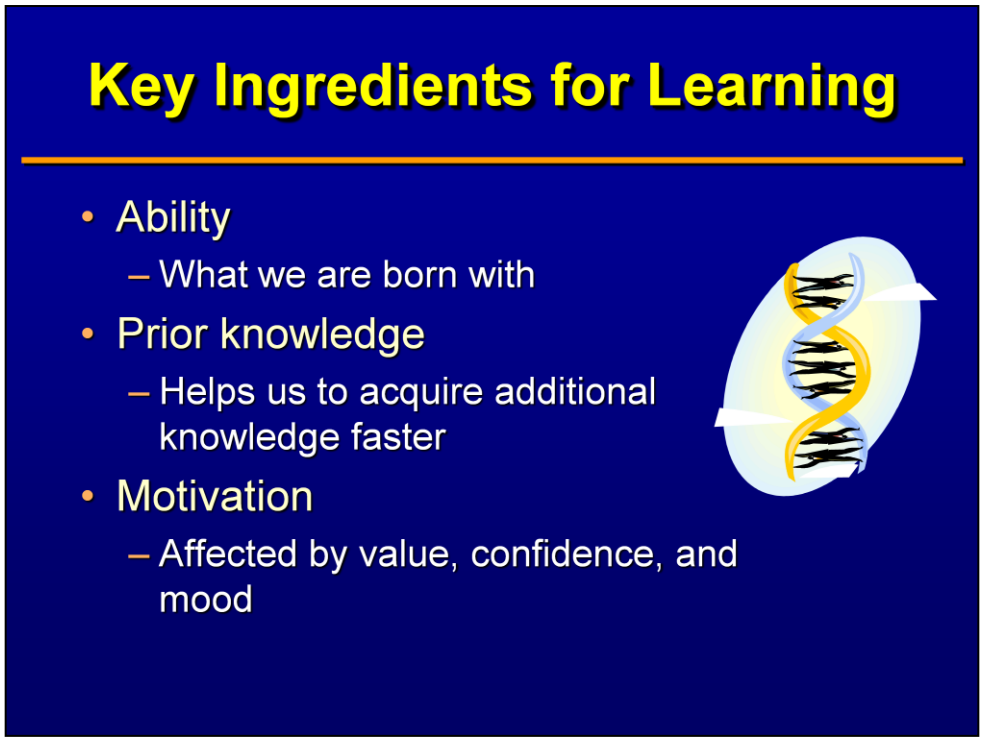


Research has shown that some of the most effective learning is accomplished with one-on-one training where the trainer and trainee work together as a team. The trainer's job is to guide and interject when appropriate. The instructor should be checking to make sure that the trainee is all set with logistical and technical requirements and is fully aware of what is required before the training begins. The instructors should also make some assessment as to what the trainee is "thinking" during decision making points in the simulation. This is not easy to do but can be helped by discussion or by using post-event evaluation tools. Finally the trainer should look at the actions and see if they make sense based on what the trainee has shared so far. Does the trainee know what he/she lacks from the use of science, technology, and /or policies ? What improvements can be made based on the actions? Working as a team can help establish an action plan for improvement.

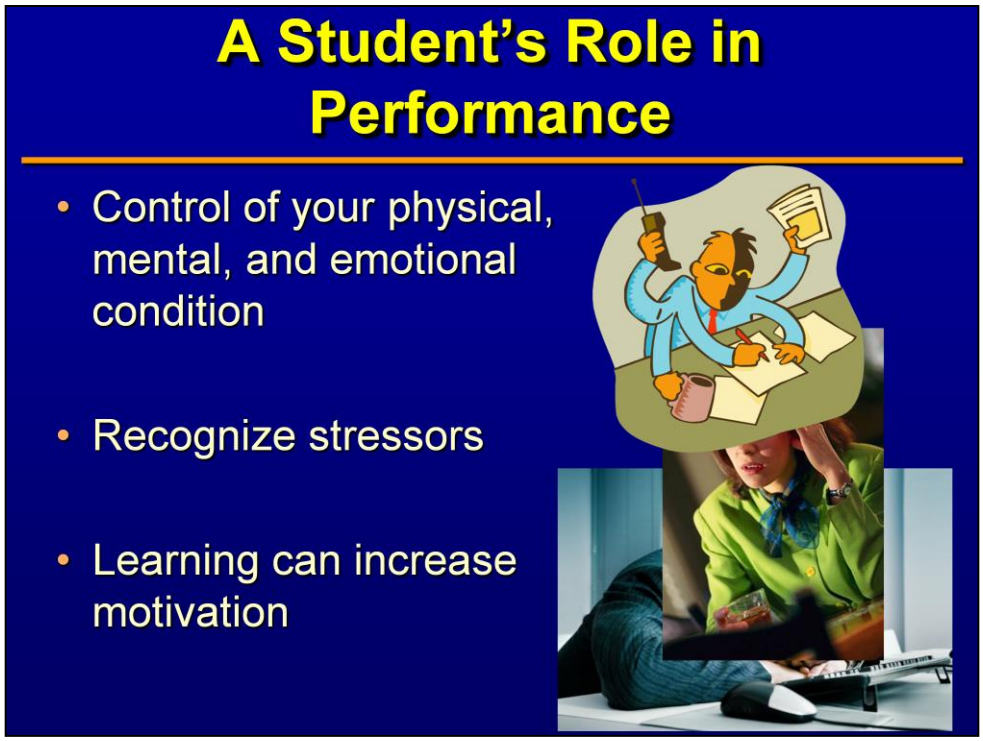
What are the Factors for Effective Transfer of Learning to Performance?

Factors	Instructors	Students	Managers
Clear performance specifications	I	S	M
Necessary support	I	S	M
Clear consequences	I	S	M
Prompt feedback	I	S	M
Individual capability	I	S	M
Necessary skills and knowledge	I	S	M

We next will look at the role of students, which are the primary learners and performers in the training process. Students are responsible for the two factors circled in red: **individual capability,** and a role doubly shared by the Instructor stakeholder group, **necessary knowledge and skills.** In terms of this factor, the student's role is the actual learning required to perform. The role of you as a student is of a professional , since you are getting paid for your job. This is contrasted against some of your previous roles as a student, say for example, as a college student.



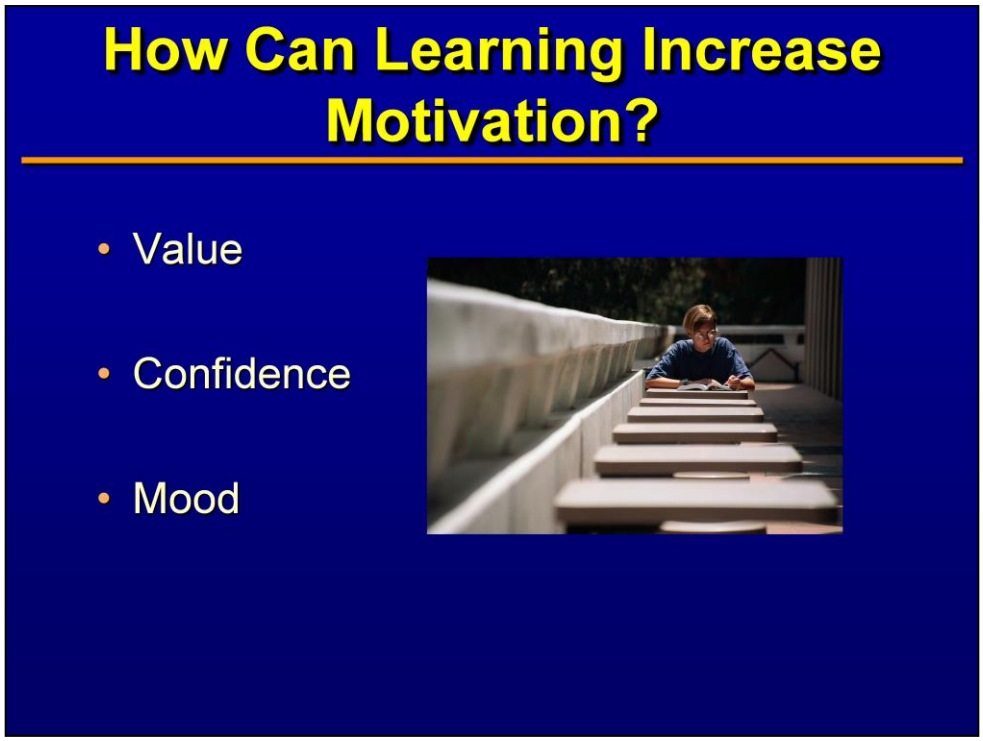
Cognitive psychology research suggests that three major factors influence how much and how well we learn: ability, prior knowledge, and motivation. General ability to learn varies depending on our genes, but it can be built up, like muscles. Prior knowledge is important as we build upon what we already know and have used. Motivation is also important. Training activities can be developed as a compensation for what the learner lacks. The greater the abilities, prior knowledge, and motivation the learner possess, the less required from the other groups, especially facilitators. We need to recognize these ingredients and seek support accordingly. We can adapt for differences or deficiencies in each of these ingredients.



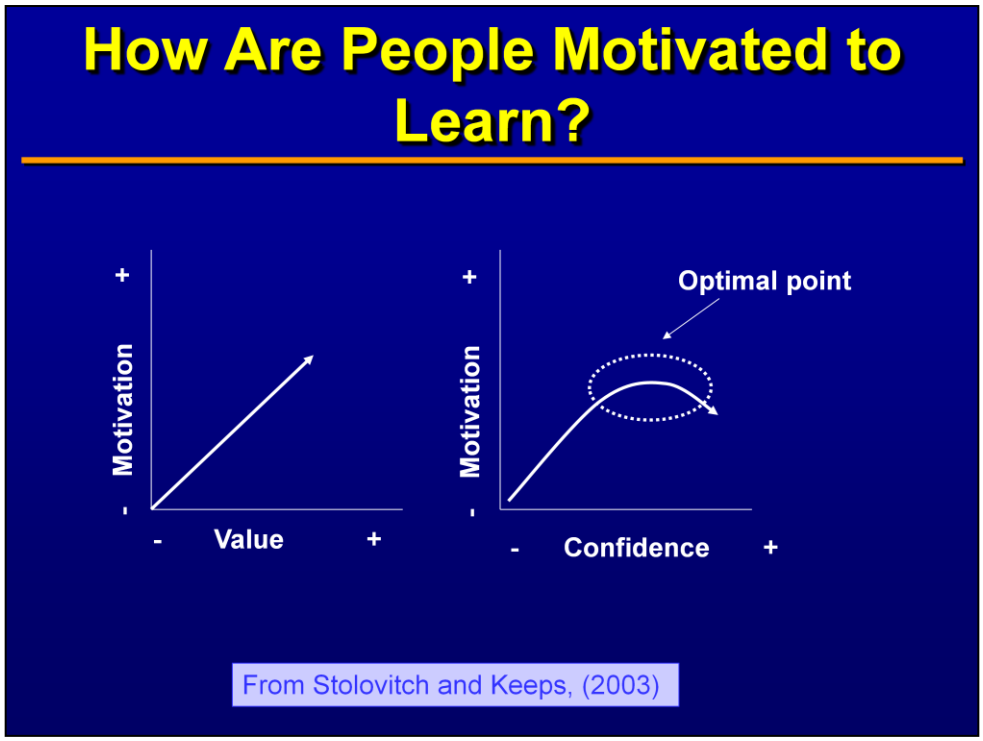
Since most adults come in with a pre-disposition to learning in general, instructors are aiming to design the course in a way so that the learners can succeed. And since we know that learning is a partnership, it cannot succeed without the student's accomplishing their share of the responsibilities that go into the partnership. As a student, your individual capacity for learning and performance begins with your physical, mental, and emotional capacity. Some of these things are out of our control, but some aren't. We all have the capacity to learn but often we get bogged down with lots of issues. For example, we might be dealing with poor health, or dealing with the common problem of multiple demands on our time. Fatigue at work might be due to a lack of a particular vitamin or a mineral deficiency, or just lack of sleep. Wellness affects our job performance so we must do our best to try to stay healthy.

Frustrations, conflicts, and pressures all are big stressors in the workplace. By recognizing stress, we can better adapt to it and try to deal with it. Increased stress can lead to lack of performance and overall motivation at work which will certainly impact our ability to learn, because we eventually don't care and have no drive. So, one thing that can have a positive influence on our

individual capacity in performance is learning and we know that it is tied to motivation. So, let's look at three factors which affect motivation in learning.

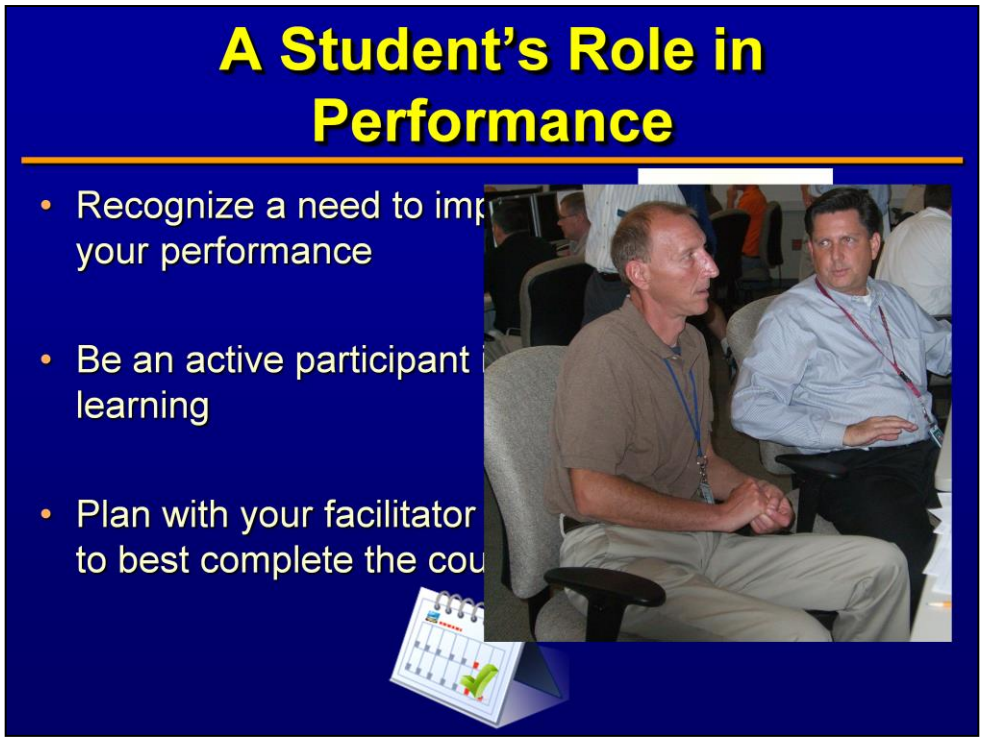


We all have seen the power of high motivation – the desire to achieve something. We also have seen the reverse: those who don't care, have no drive, are stressed out, those who seem to lack interest in learning rarely achieved proficiency in new knowledge or skills. We know motivation is important but what are the factors that affect it? Research suggests that there are three general factors that motivate people to learn: Value, confidence and mood.



The graph illustrates how value is directly related to motivation. The right-hand graph shows that that if the learner feels “this is so easy, I don’t even need to try”, then motivation plummets. The optimal point of motivation is where the learner has enough confidence to feel he/she can succeed, but not so much that the incentive to learn declines. Most of us are motivated by challenges (the high point on the curve) and security (“if I work at it I know I can succeed”).

Motivation is also directly related to mood (graph not shown). A positive learning/work environment tends to improve a person’s mood and hence, his or her motivation. But, a frivolous or manic mood might have unpredictable effects on motivation.

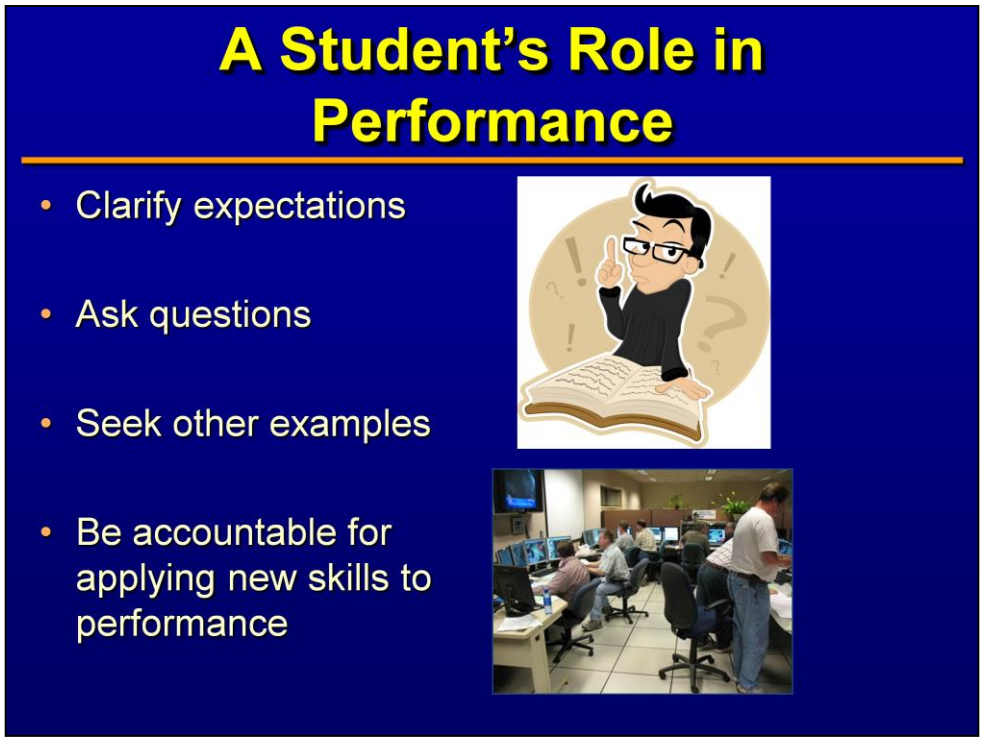


So, individual capacity for learning and performance begins with the physical, mental, and emotional capacity. This is tied to motivation which is a powerful attitude attained by personal growth and our working environment. Let's not forget experience is a factor too which can be remediated by good facilitation. For example, one might see severe weather examples in the training from places that are totally different from their local CWA, such as a high-end QLCS. They might think, "we don't ever get those type of events here" ; "How can I possibly learn something relevant here?" Well, that is a good question, but by working with the local facilitator, one can find learning potential and the application to job performance for any activity.

So, there are some other specific factors in a student's role for learning. For example, how about a recognized need to improve your own performance? This is symbolized as a hand extended asking for help.

Once this mindset is established, the student must become an active participant in the training process, not a passive receiver of information but a stakeholder in his/her own progress. Instructions are provided in the Orientation Session which describe the role of a participant. Before learning occurs, the focus is on how to complete the course. During training, the student should work with co-workers and local management on scheduling and attendance commitments. Plan with

your facilitator on how to best complete the course. It's important to complete training requirements on time including all online modules, instructor-led sessions, simulations, and evaluations.



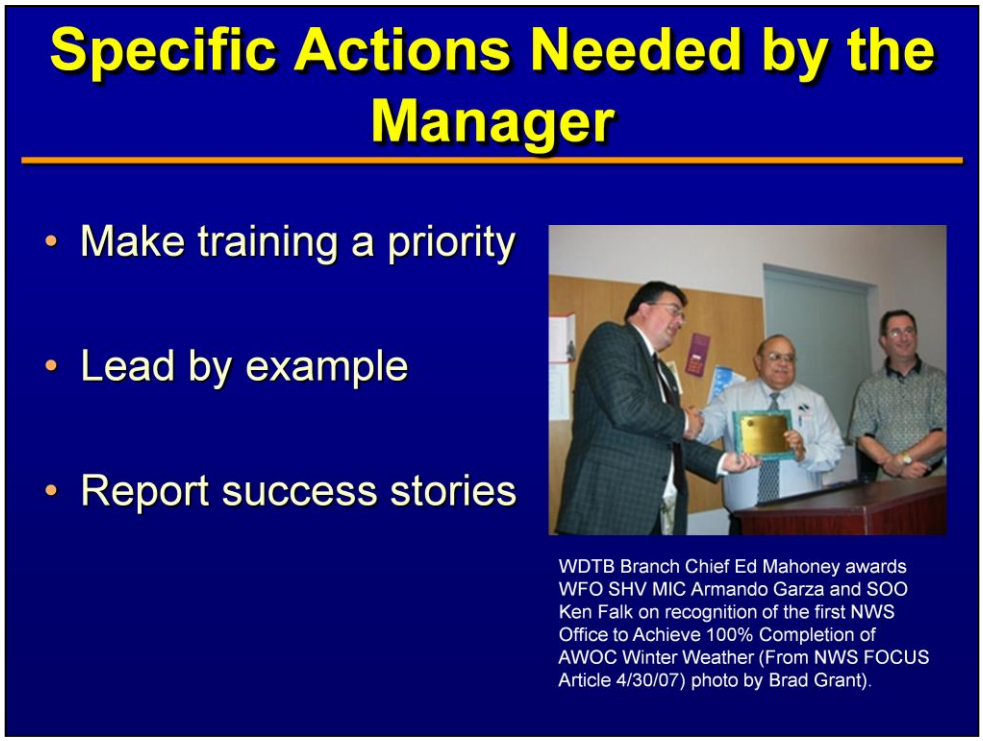
Students should clarify expectations (i.e., make sure to know the goals for the training sessions) and what should the focus should be during the simulations. They should ask questions and seek help when needed. Have the SOO help explain AWOC concepts because it will be easy to lose track of the big picture. Seek other examples to gain a better picture of the concepts. And finally, be accountable for applying new skills and even develop a personal action plan to correct weak areas. The student is the only one who will ultimately gain or suffer as a result of this learning.

Now, What is Your Manager's Role in Performance?

Factors	Instructors	Students	Managers
Clear performance specifications	I	S	M
Necessary support	I	S	M
Clear consequences	I	S	M
Prompt feedback	I	S	M
Individual capability	I	S	M
Necessary skills and knowledge	I	S	M

It may be surprising but your manager is chiefly responsible for ensuring 4 out of the 6 factors for transferring learning to performance are in place. These include clear performance specifications , necessary support, clear consequences, and prompt feedback.

A manager's role in effective job performance starts with defining the job expectations (however high they may be!). They define the job task procedures, outputs, and standards (for example, how the tasks should be accomplished). Necessary support means management should provide resources, priorities, responsibility, authority, and time (such as dedicated training time). Clear consequences for completing the training can be reinforcement, incentives, or rewards. Incentives are usually huge motivational factors in the work world and training incentives can be applied. Finally, a Manager's role (in conjunction with the instructor's) is to provide prompt feedback especially in regard to how well performance matches expectations.



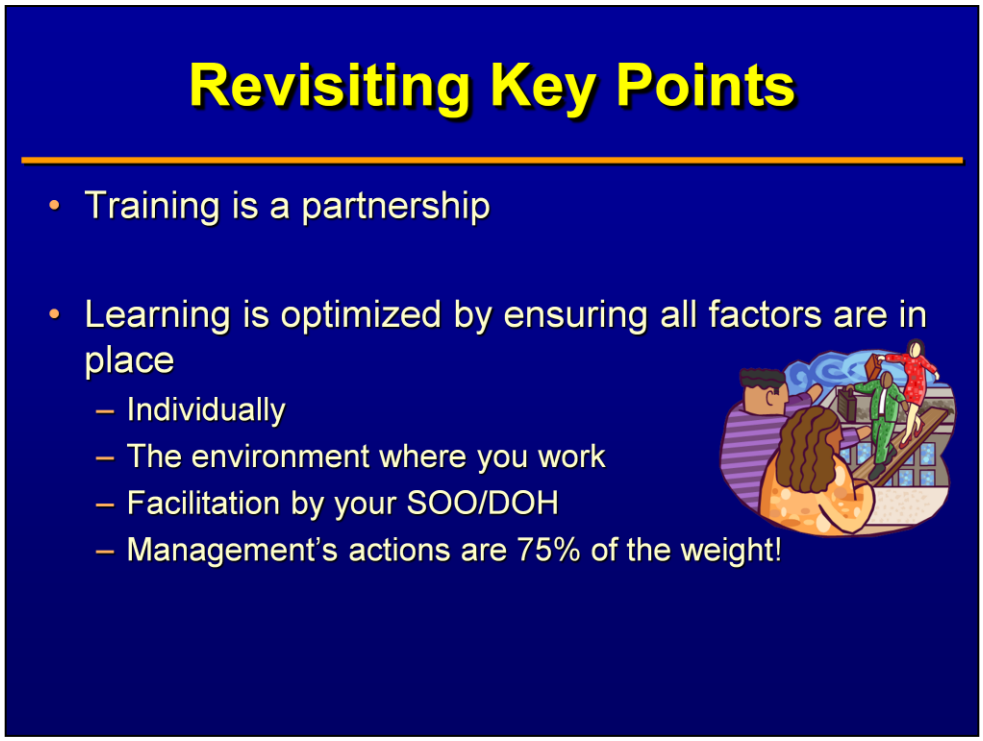
Some specific actions needed by the manager (or management staff) are:

- Make training a top priority
-
- Lead by example, and
-
- Report success stories.
-

A great example illustrating these concepts came from the management and staff of WFO Shreveport. They reported to WDTB that there were three key elements used to effectively implement the AWOC Winter Track training in their office (and become the first office in the NWS to complete this required training):

1. Instill complete management support
2.
3. Instill a “partnering learning environment”, and
4.

5. Have inter-office competition. The Science and Operations Officer (SOO) Ken Falk reported that the “support from the Meteorologist-In-Charge (MIC) in establishing clear priorities such as allowing each forecaster to receive dedicated training time to complete the course and monitoring the progress of each participant” were critical actions in achieving the goal. “The entire staff got behind the effort to complete the course before the start of the fall severe weather season and we encouraged folks to complete the training in pairs, to help the learning and application process”, stated MIC, Armando Garza.
6.



In summary, training is a partnership. Learning is optimized by ensuring all factors are in place and all parties do their parts. This includes your personal actions and attitudes as a professional, the environmental factors we work in, facilitation by your SOO/DOH and management's actions, which hold a huge 75% of the total weight! Don't forget, learning that focuses on job performance improvement requires these actions. Otherwise, the learning will be largely unsuccessful.

Evaluation Forms in AWOC

- AWOC Simulation Student Assessment
  - Must be completed by each student as a learning assessment for the WES Simulation requirement
- AWOC Simulation Facilitator Evaluation
  - Is a Debrief tool used to evaluate the student's performance in the simulation
    - Recommended to be completed for the WES Simulation

These are some of the evaluation forms used in AWOC simulations. The student learning assessment is required for completion of the WES simulation component in AWOC Severe and Flash Flood tracks. The Facilitator evaluation is a debrief tool that can used to determine if the student has met the simulation objectives.

AWOC Core, IC1, Lesson1 - Optimizing Learning

Quiz - 9 questions

Last Modified: Apr 15, 2015 at 04:36 PM

PROPERTIES

On passing, 'Finish' button:	Goes to Next Slide
On failing, 'Finish' button:	Goes to Next Slide
Allow user to leave quiz:	After user has completed quiz
User may view slides after quiz:	At any time
Show in menu as:	Single item

Edit in Quizmaker

Edit Properties

Contact Information

- For Questions on this Lesson
  - bradford.n.grant@noaa.gov
  - 405-325-2997
  - nws.wdtb.awochelp-list@noaa.gov

References

Clarke, R.C., 1998: Building Expertise: cognitive methods for training and performance improvement. International Society for Performance Improvement, Washington D.C.

Hahn, Bianka B. , D.W. Klinger, Klein Associates. Advanced Warning Operations: Collaborative Development of Expertise Workshop (Work funded by OCWWS, Warning Decision Training Branch) 2004.

Hodges, T. K., 2002: Linking Learning to Performance: A practical guide to measuring learning and on-the-job application. Butterworth-Heinemann, Boston, MA.

Hopkins, K. D., 1998: Educational and Psychological Measurement and Evaluation. Allyn and Bacon,Boston, MA.

Kirkpatrick, D. L., 1994: Evaluating training programs: the four levels. Berrett-Koehler, San Francisco, CA. (note: Kirkpatrick first published his four-level approach on the evaluation of training in a series of articles appearing in the journal known as the American Society of Training Directors in November-December of 1959 and January-February 1960.)

McCain, D. V., and D. D. Tobey, 2004: Facilitation Basics. American Society for Training and Development, Alexandria, VA.

References

Phillips, J. J., 1991: Handbook of Training Evaluation and Measurement Methods. Gulf Publishing Company, Houston, TX.

Stanard, Terry, R. M. Pliske, A. A. Armstrong, S. Green, C.E. Zsambok, D.P. McDonald, B.W. Crandall. Collaborative Development of Expertise: Evaluation of an on-the-job (OJT) training program. Proceedings, Human Factors and Ergonomics Society 46th Annual Meeting, Baltimore, MD 2002

Stolovitch H. D., and E. J. Keeps, 2003: Telling Ain't Training. American Society for Training and Development, Alexandria, VA.

Zsambok, Caroline E. , Klein Associates. High performance OJT: New power for the world of work. (Work funded by the US Army Research Institute for the Behavioral and Social Sciences, Alexandria, VA MDA903-93-C-0092) 1995.