Training Transfer Strategies

What We've Learned in the Past 7 Years
About Training and Transfer

Brad Grant

The Voyage of Ivan

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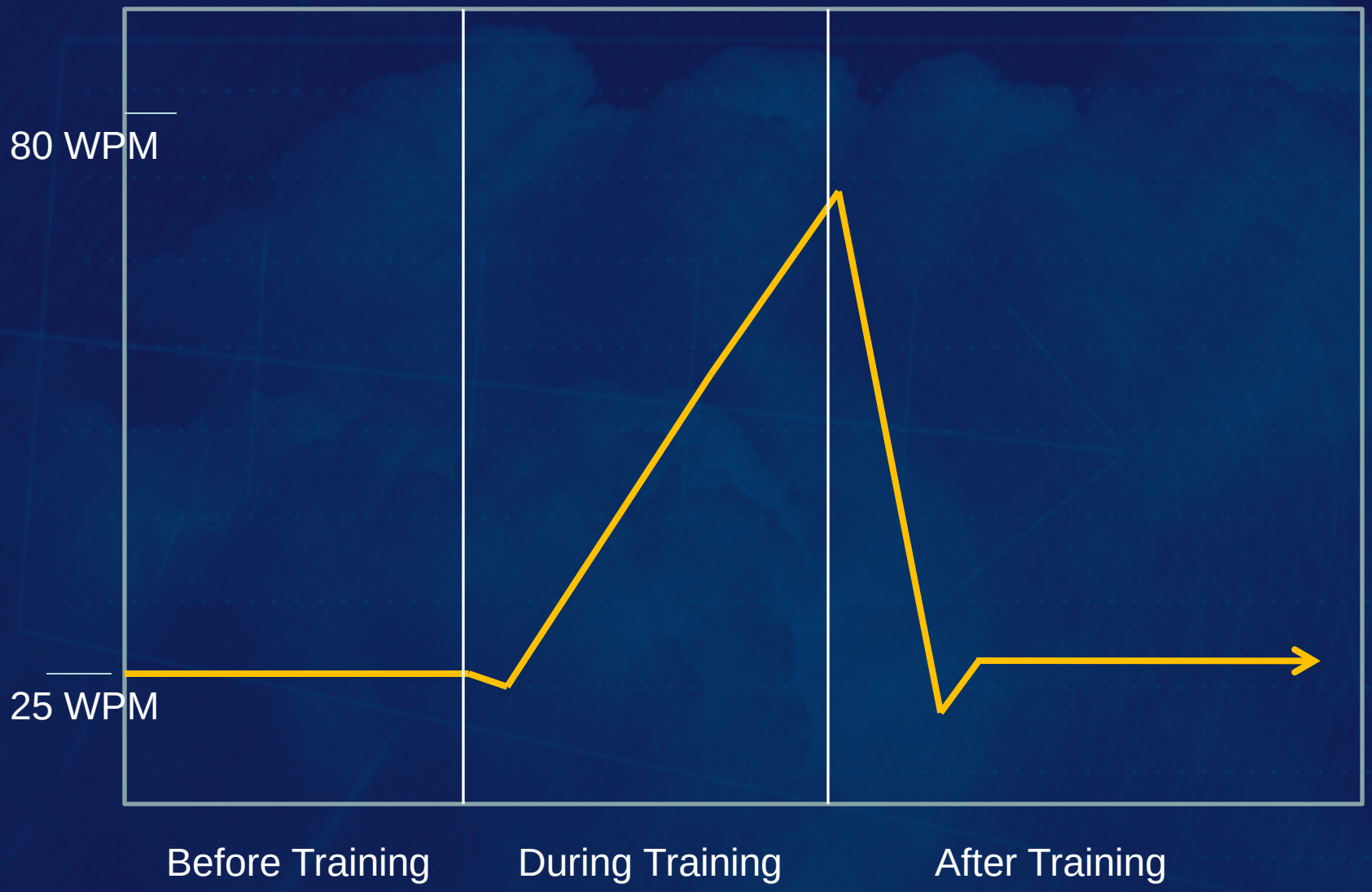
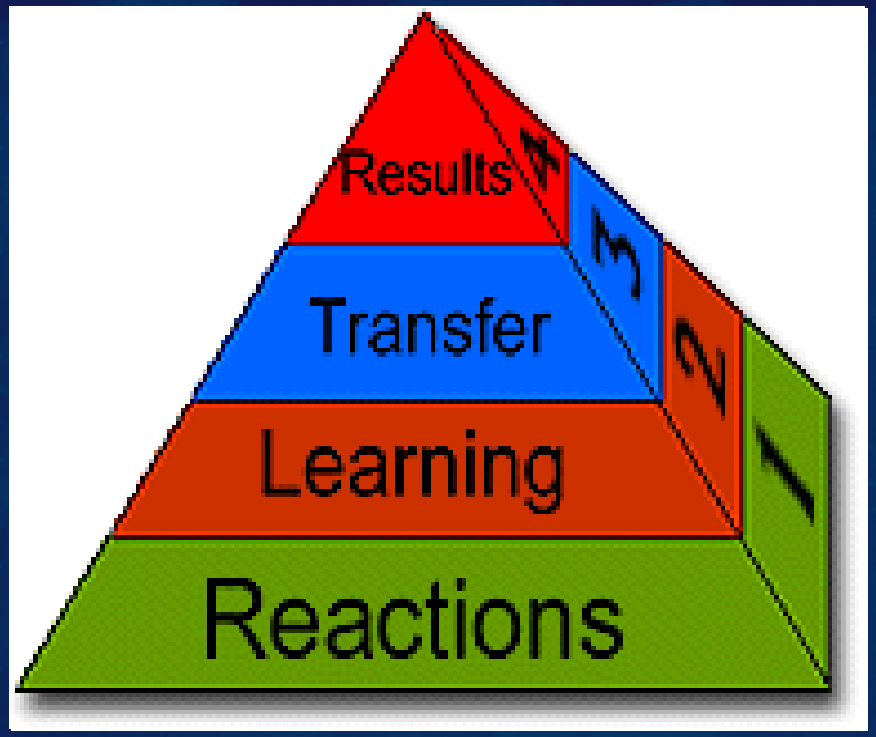


What are the Objectives?

- Identify differences between how to evaluate learning and transfer
- Recognize barriers to transfer
- Recognize enablers to transfer
- Identify strategies for transferring learning to performance

How Training is Evaluated



Kirkpatrick's (1994) Four Levels of Evaluation

Components of Training Evaluation

Needs Assessment
"What do they need?"

Formative Evaluation
"Will it work?"

Reaction Evaluation (1)
"Were they satisfied?"

Learning Evaluation (2)
"Did they learn?"

Performance Evaluation (3)
"Were they able to use it in their job, and were they successful in using it?"

Impact Evaluation (4)
"What impact has it had and was there a measurable return?"

After Hodges (2002)

Level 1 Evaluation from Standard NWS LMS Survey

- Measures perceptions of learning event right after Test (10 items)
- Isn’t always completed as part of Training Event
- Isn’t always indicative of learning and/or transfer (but still part of chain of impact)
- L1s still valuable as a course adjustment tool

What Are the Six Factors that Affect Performance?

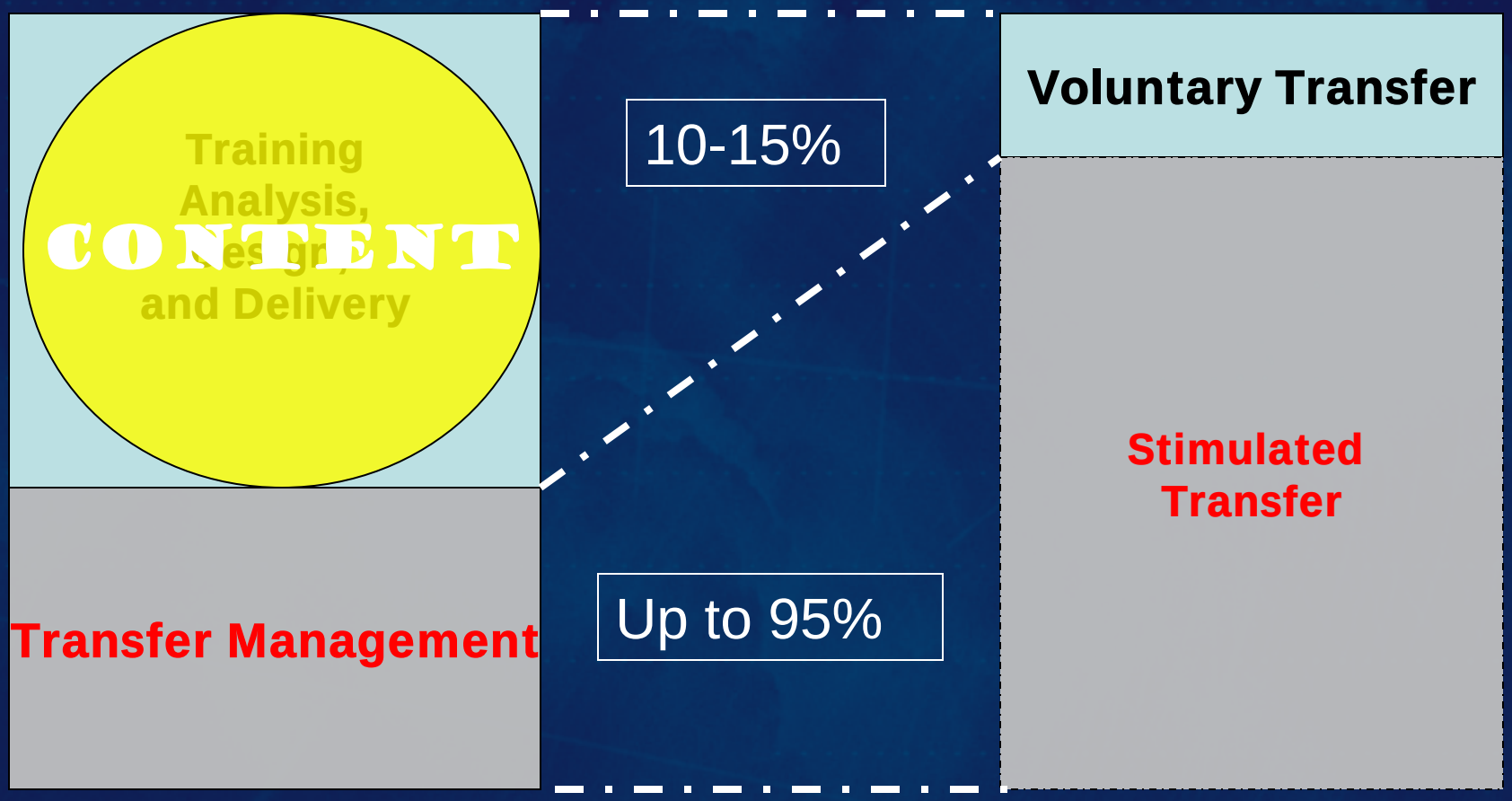
Environment Factors	Information	Resources	Incentives/ Consequences
Individual Factors	Knowledge/ Skills	Capacity	Motivation

Gilbert's Behavior Engineering Model (1996)

Who's Responsible for Performance Improvement? (Broad, 2005)

Top 6 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

Transfer of Training into Performance Requires Management Support



Broad and Newstrom (1992)

Research on Autonomous Performers

- 3 factors determine extent of transfer
  - Credibility of information (who is saying it)
  - Practicality (how easy to apply it)
  - Recognition (need to improve their own performance)

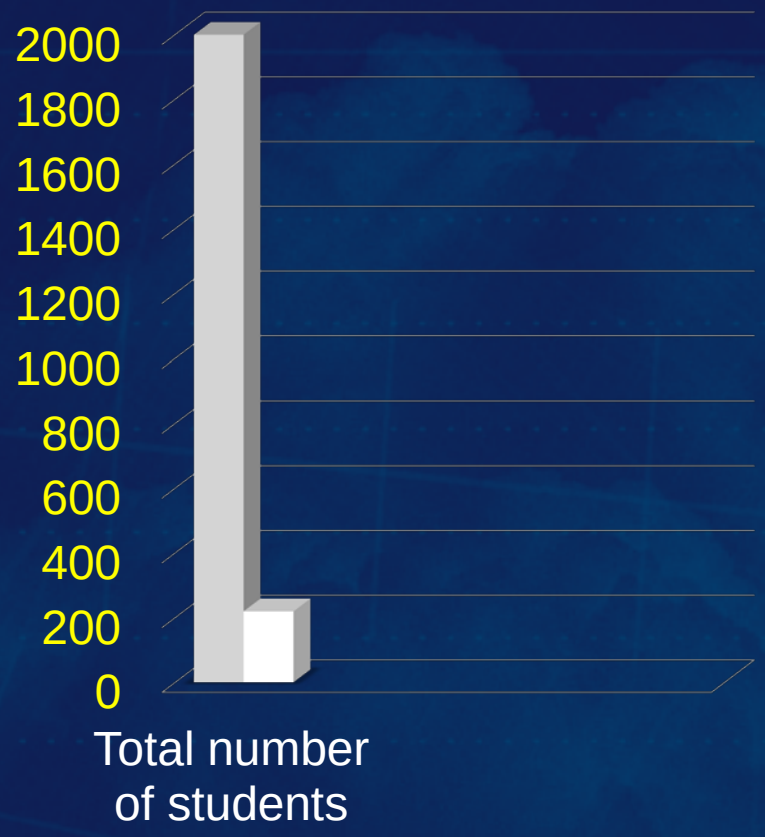
All 3 stakeholder groups play a role in supporting these factors!

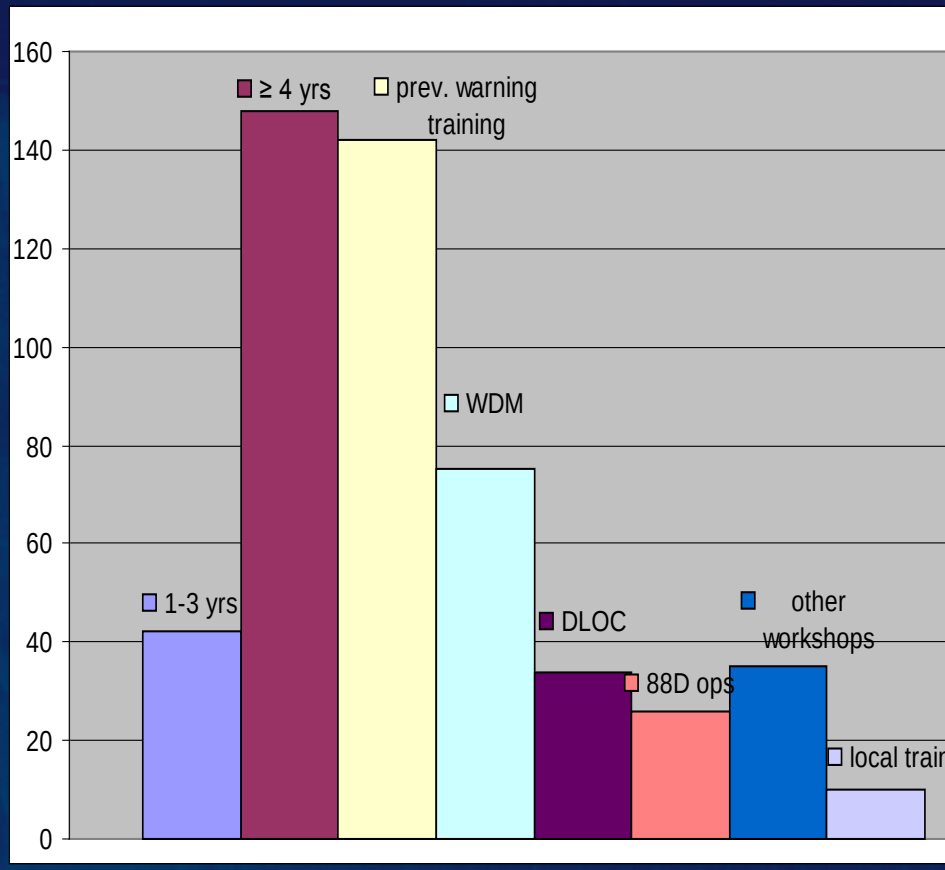
Research conducted by Yelon, Sheppard, Sleight, and Ford (2004)

So, for Transfer to Occur….

- 6 Factors Must be in Place (with all 3 stakeholder groups doing their “jobs”)
- Plus….
- 3 Factors for Autonomous Learners

Let's Look Back at Some Level 3 Data from AWOC 2004-05





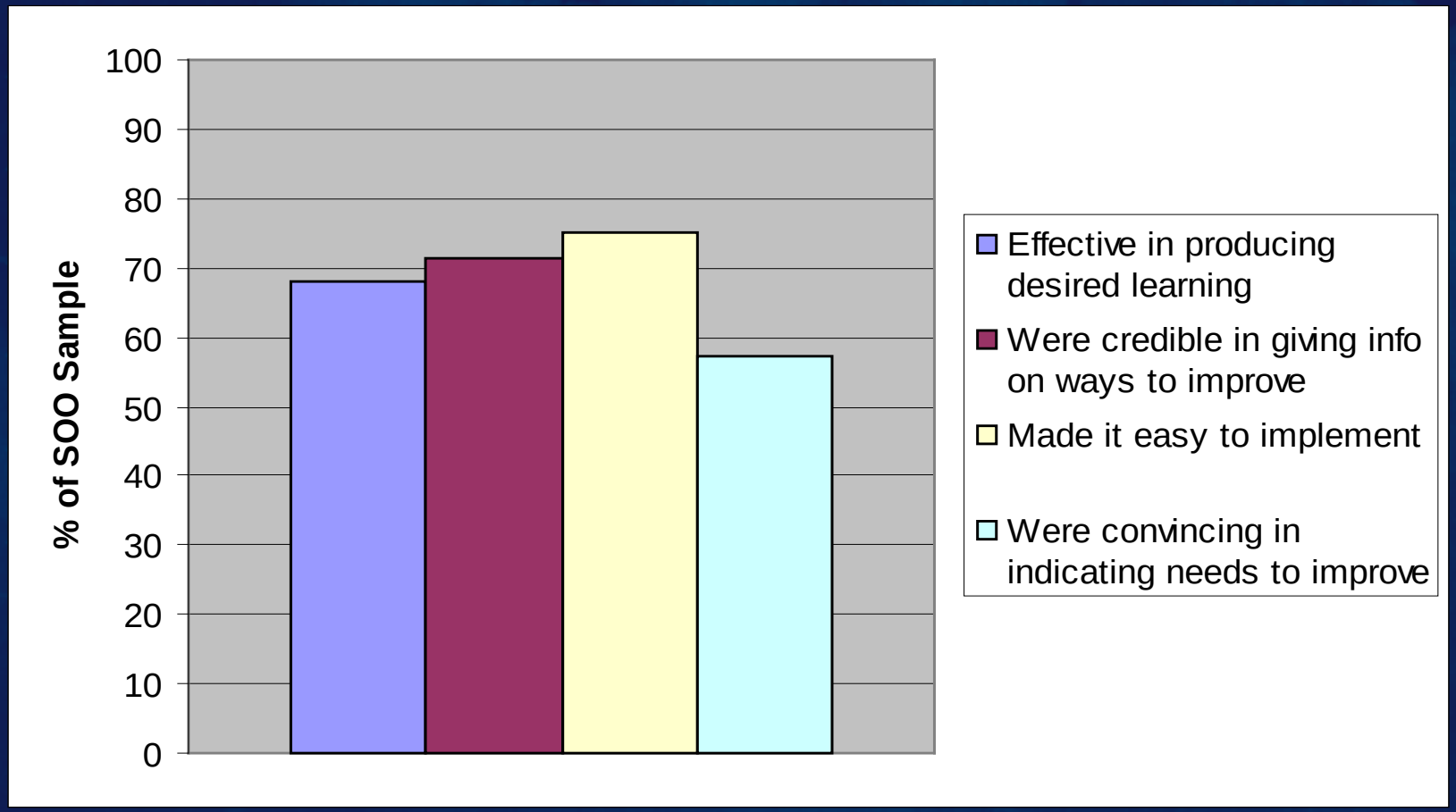
AWOC course "completions" level 3 sample

Sample Size ~ 200

Credibility Factors

“If you build it, he will come.”
Ray Kinsella , Field of Dreams, (1989)

What Were some Instructional Design Aspects of AWOC that Helped the SOO?

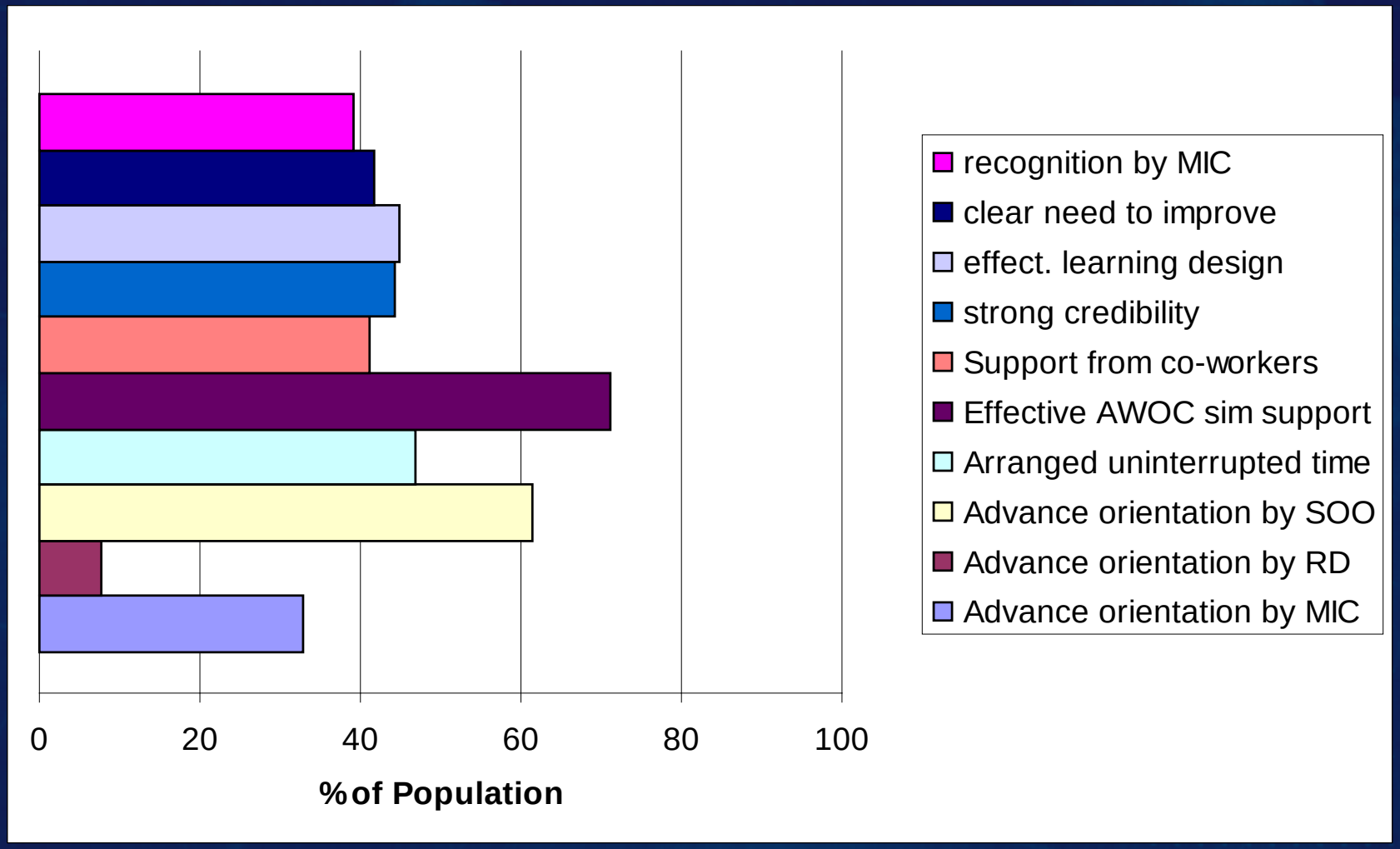


Support Factors

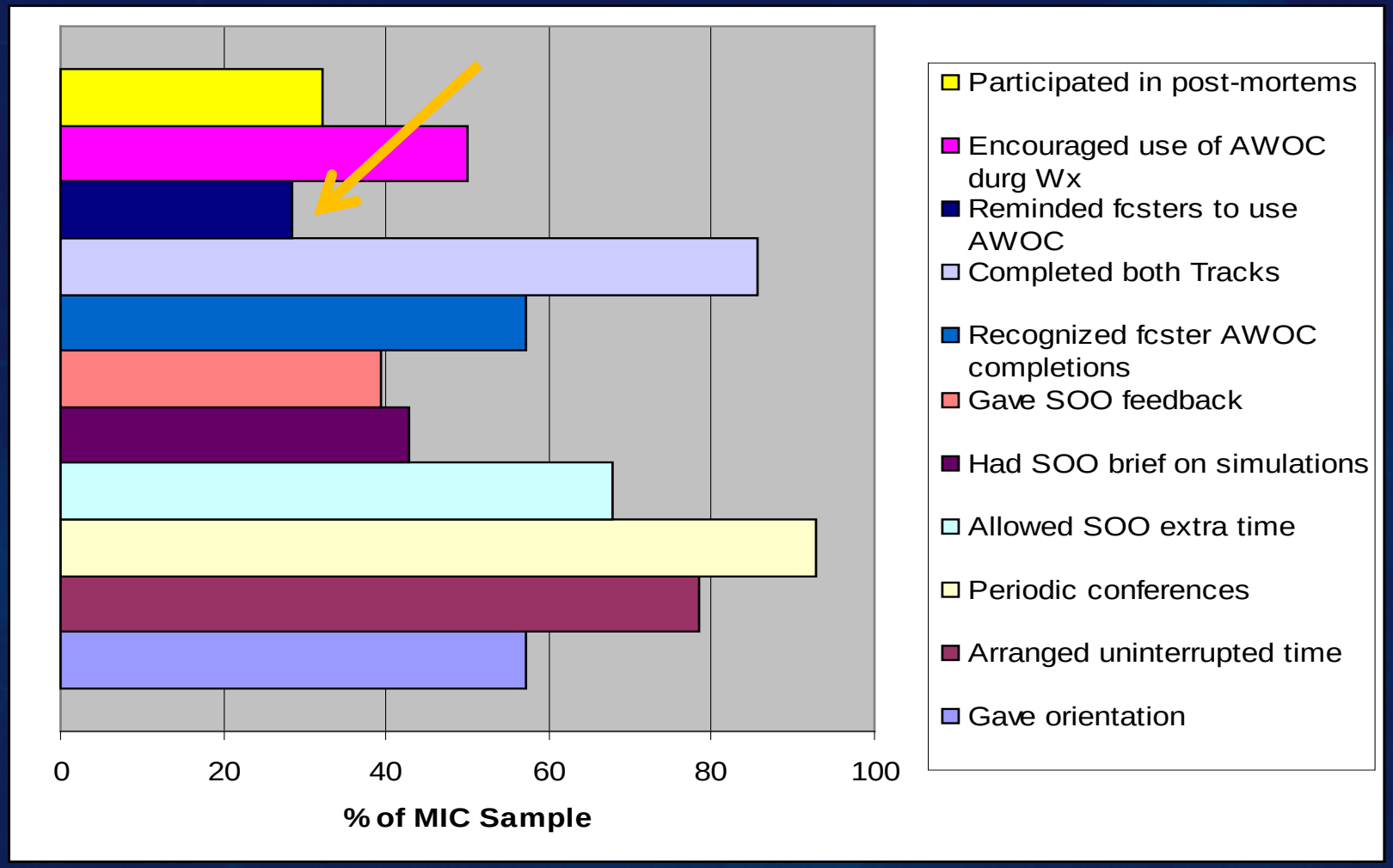
“Never tell people how to do things. Tell them what to do and they will surprise you with their ingenuity.”

George S. Patton, War As I Knew It

What Were the Supports for Learning AWOC Concepts?



MIC Support Actions



A Training Success Story

- 1st NWS Office to get 100% Staff Completion Rate in the AWOC Winter Track (2006-07)

- Why?

What Leads to Success in Training and Transfer (and makes your job easier)?

1. Complete management support

2. Partnering learning environment

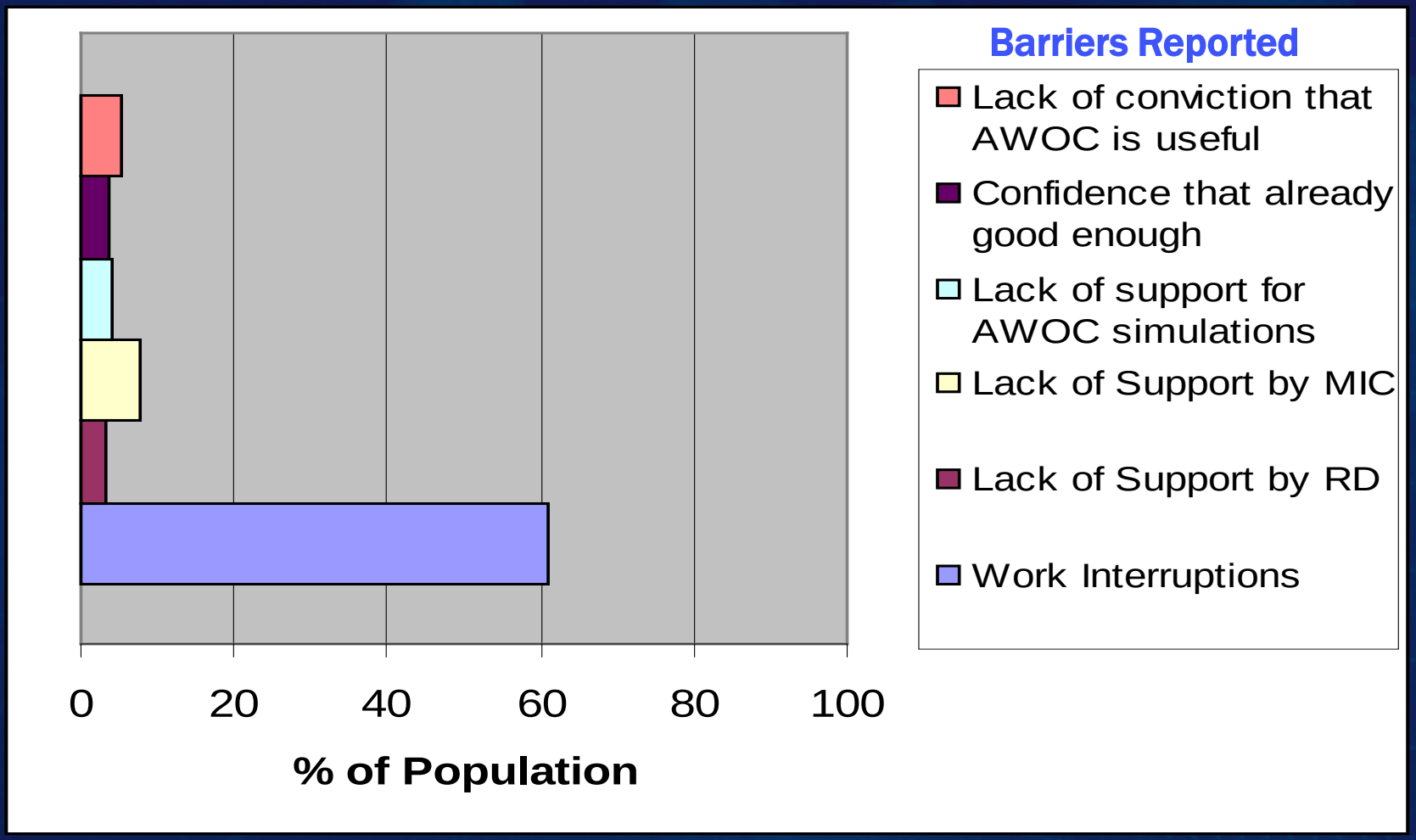
3. Inter-office competition

Barriers

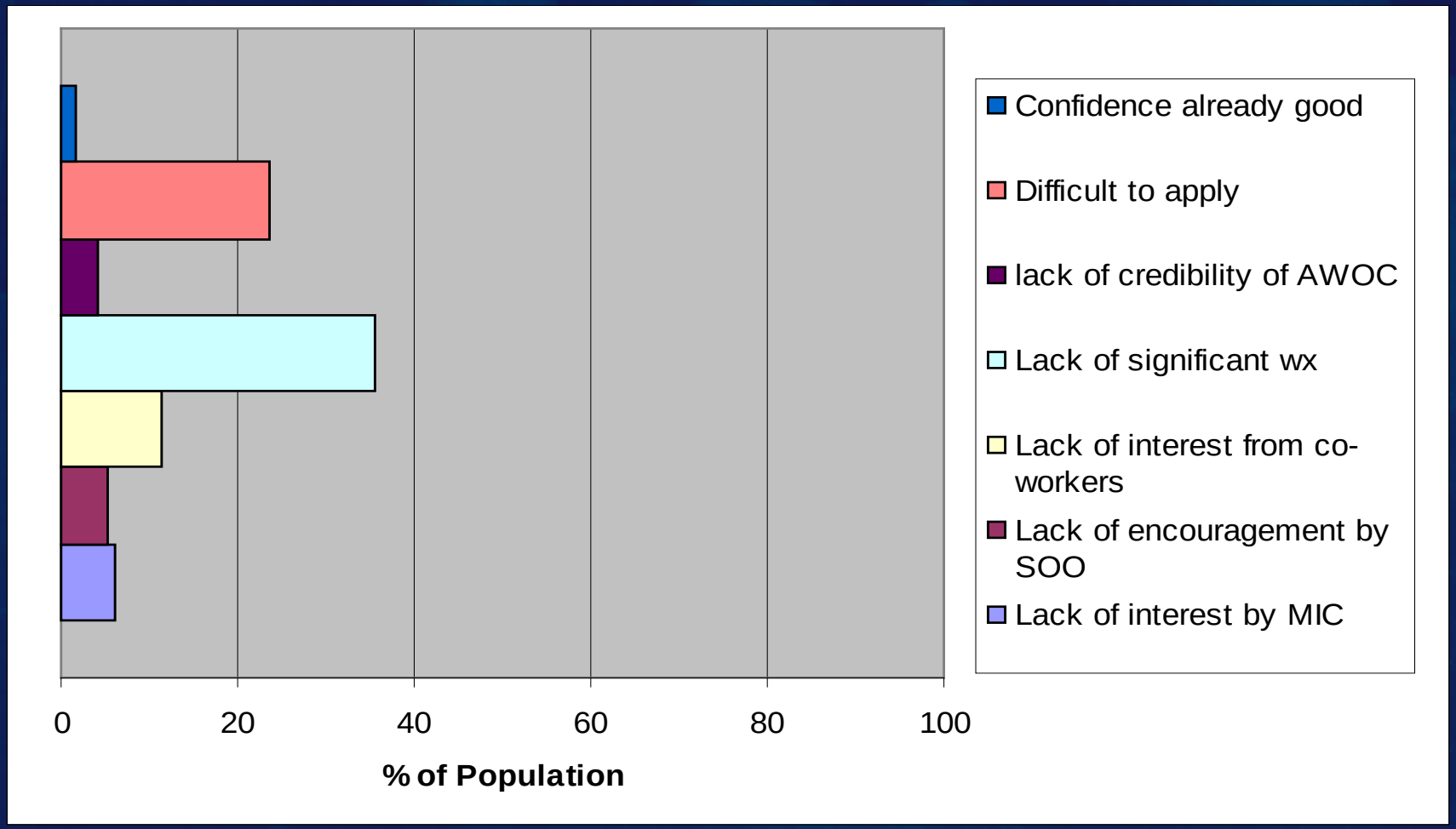
"*Training can only elaborate on that which already exists; it cannot create new behavior for an environment that will not support it.*"

Alex Merenoff , "Teaching Johnny to Manage"

What Were the Barriers that Interfered with AWOC Learning?



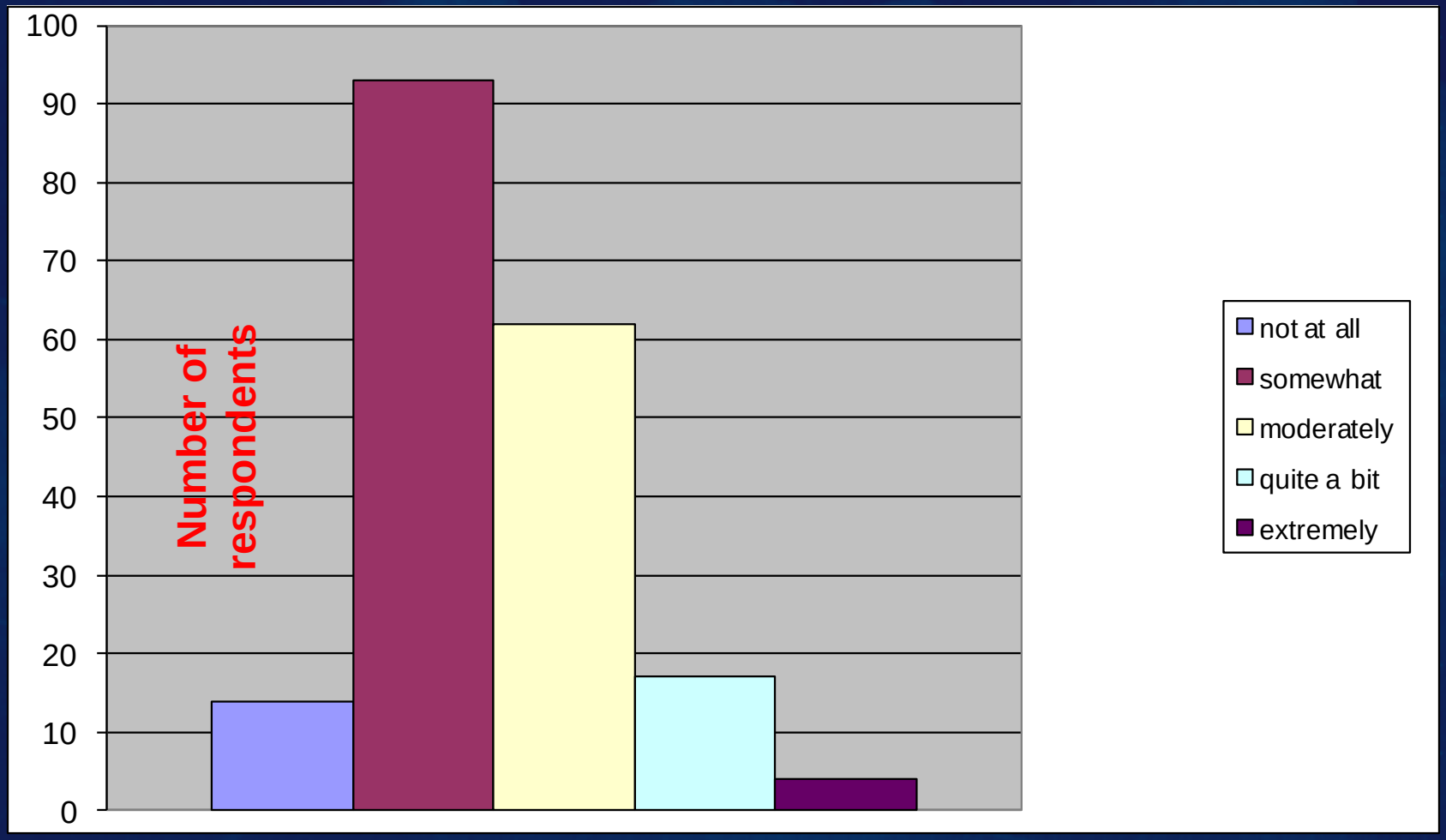
What Were the Barriers to Apply AWOC to the job?



Results

To What Extent has Job Performance Improved since AWOC?

Forecaster's perspective



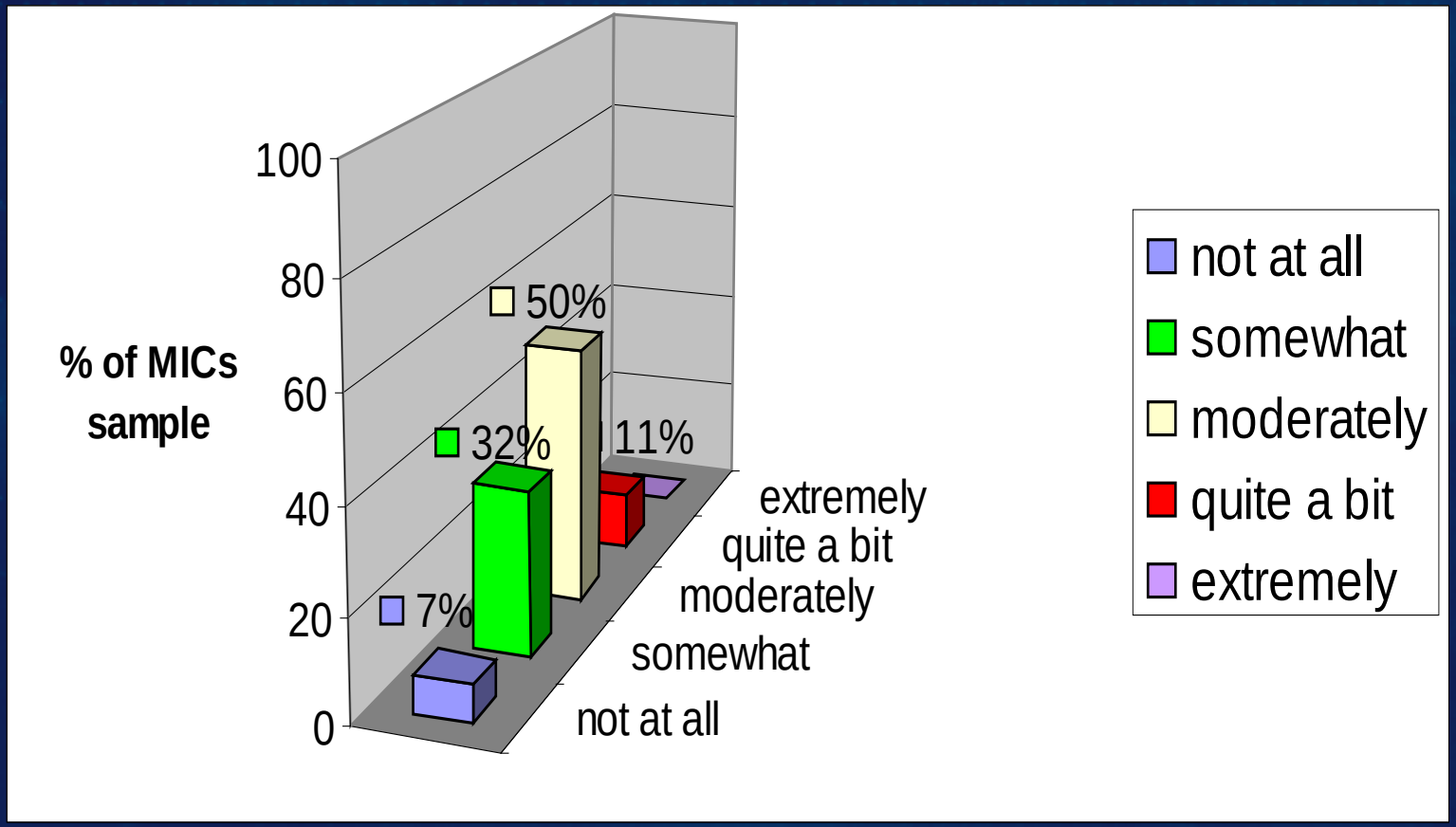
MIC View of Forecaster Reactions to AWOC

- Most rated reactions generally very positive
- Very few problems related to their folks thinking that AWOC was not credible or practical

Note: 93% of MICs reported a 100% Completion Rate of both Tracks of AWOC!

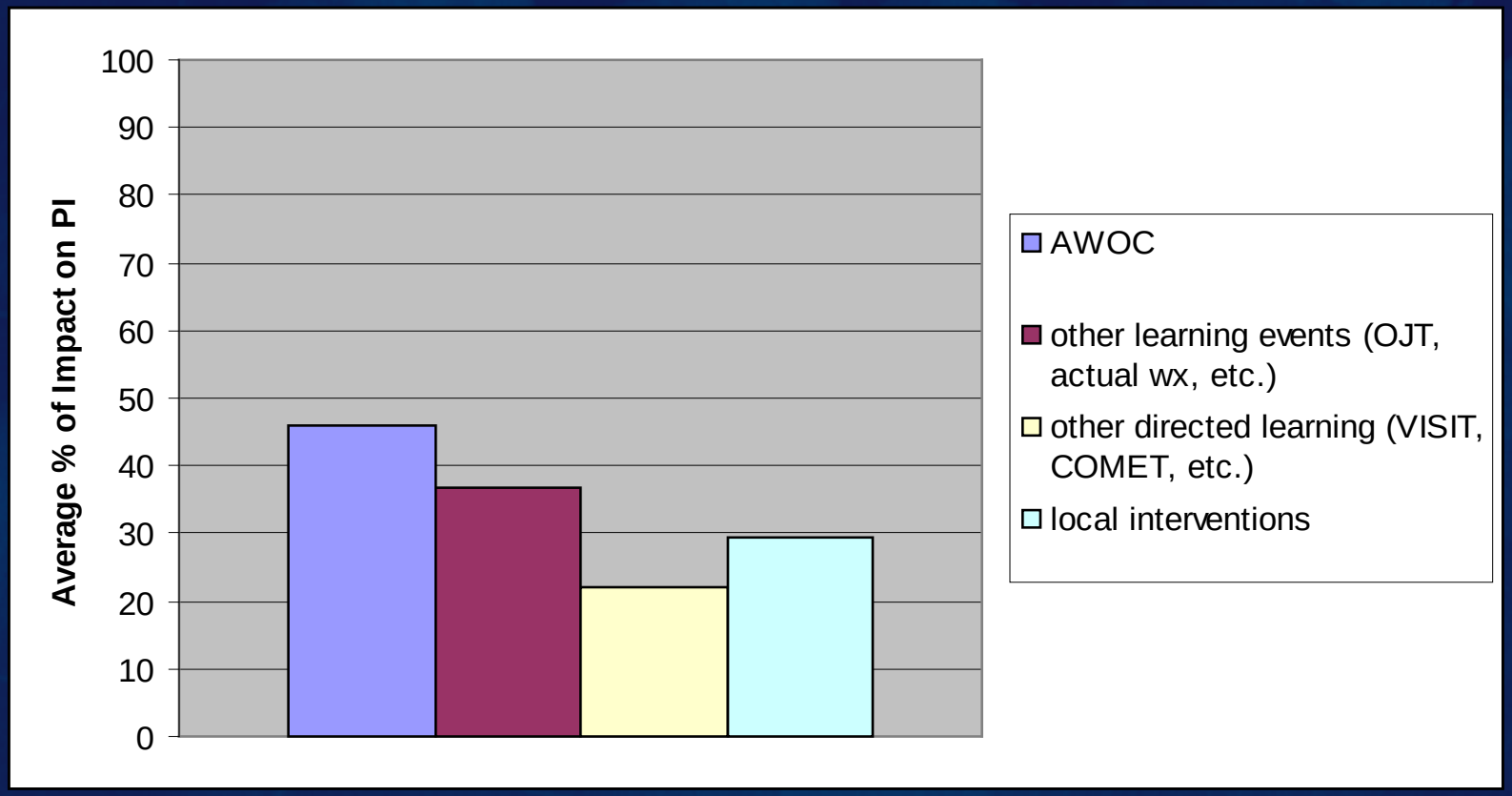
According to MICs Surveyed…

- **Answer to the question, "In your opinion, to what extent has overall job performance of forecasters (as a group) improved since AWOC?"**



What was AWOC's Impact to Performance Improvement?

MIC Perspective

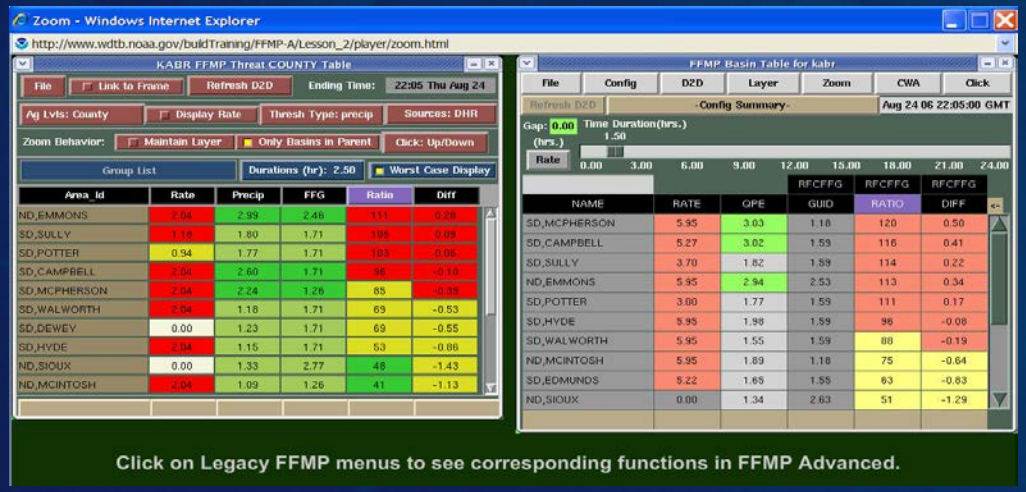


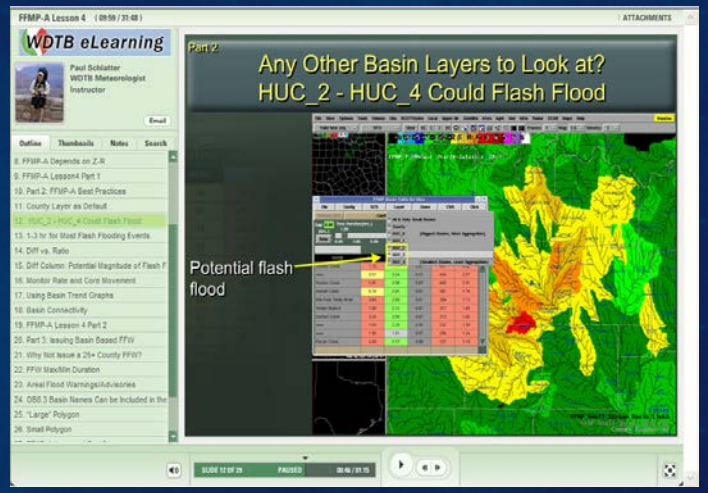
That Was Then…This is Now

2011

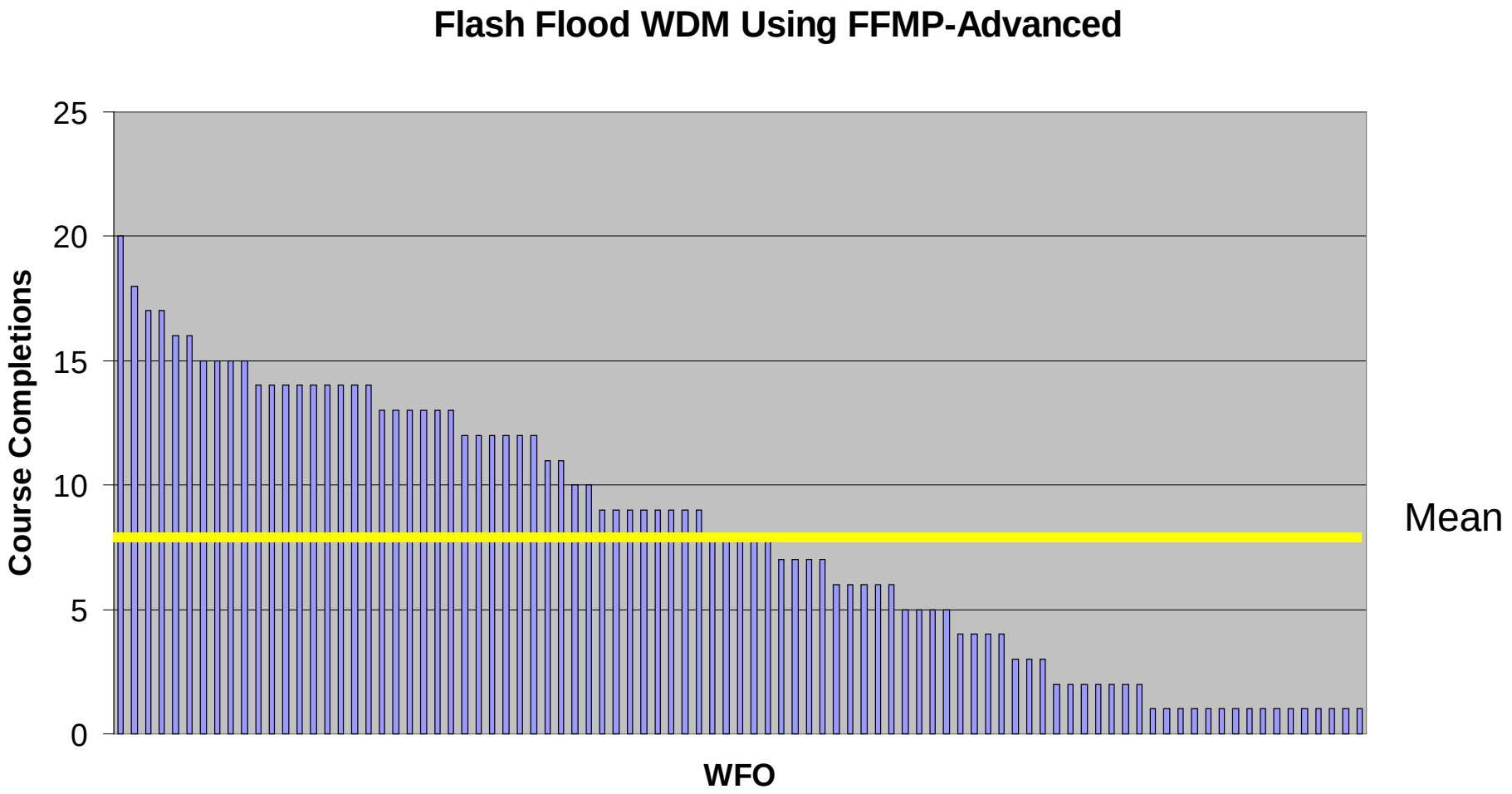
Example #1: “Flash Flood Warning Decision Making Using FFMP-Advanced”

Audience	Release Date	Training Modality	Length	Completions
Forecasters who issue FFWs	July 2008	4 Articulates, 1 small WES exercise	2 hrs	966





Trouble Hitting Target Audience



Key Findings from FFMP-A Evaluation

1. Did not meet target audience (64%) Why????

2. Not all parts appropriate to staff

3. WES exercise rated highest

Example # 2: “Road Weather”

Audience	Release Date	Training Modality	Length	Completions
Forecasters w/ Winter Wx Warning Responsibilities	Sept 2008	11 Articulates, No WES	3.5 hrs	324

Road Weather – Evaluation Findings

- More concise lessons that target performance change
  - Background & ancillary information outside of main lesson
  - Use links to external documents
- Make training easier to take
  - Avoid lesson parts unless absolutely necessary
  - Goal: Take only the training you want (or need)
- Communicate better:
  - Completion requirements
  - quiz feedback

Example # 3: “AWOC Winter”

Audience	Release Date	Training Modality	Length	Completions
Forecasters who issue Winter Wx Watches, Warnings, and Advisories	Sept 2008	25 Articulates, (2 optional) Optional WES exercises End of Course Test (required) 1 big WES exercise	20 hrs	3949 (total) 156 students took at least 3 lessons 5% Completion Rate

Conclusions from Level 1 Data from These Recent Courses

- Vast Majority of Users (95%) Strongly to Moderately Agree that Training is Valuable

- Top 3 Comments for Potential Improvements

	1. Not enough Time (for Training)
	2. Condense Information into What is Really Needed
Tie	3. LMS Administration Issues
	3. WES Set-up Issues

What About Low Performers?

"… I need some ideas on how to train a person that has low self confidence in their abilities (even though their abilities are sound)…"

(Survey response from SOO, Feb. 2011)

First, Determine if the Problem is not a Learner Deficiency

- Ability
- Prior Knowledge
- Motivation

Pg. 91, “Telling Ain’t Training”

Remediating Learner Deficiencies

Deficient Factor Affecting Learning	Remedial Actions
Ability	• Break learning into smaller chunks • Simplify • Use lots of concrete examples • Eliminate nonessential content • Provide sufficient practice for each chunk • Build slowly from simple to complex • Illustrate
Prior Knowledge	• Create special learning sessions that focus on prerequisite materials • Build connections with familiar past experience • Distribute materials that provide essential prerequisite material with practice exercises • Create tutorial and remedial sessions • Pair individuals who have prior knowledge gaps with those who can help them out – share knowledge • Create study teams with mixed levels of knowledge and make them responsible for helping each other
Motivation	• Demonstrate value and benefits of the learning to the learners personally as well to others (WIIFM) • Show admired role models buying into the learning content • Build confidence by providing guided and supported practice (using WES sims) • Include sufficient challenge to stimulate involvement • Provide success stories • Maintain and upbeat, positive atmosphere

Then, If Still a Problem, It May Be a Metacognitive Skill Deficiency

Metacognitive Skill Deficiency	Remedial Actions
Planning	• **Inform learner what it takes to succeed** • Provide job aids of required materials and resources • Provide guidelines for preparing to learn, creating the right physical and mental environment for budgeting adequate learning • **Develop a suggested training timetable** • **Review how to plan for success**
Selecting	• **Clearly indicate what is important in instruction and simulations** • Tell your learners where to focus their attention and energy • Review important points with learners • Provide cues to help select focal points. These cues may include bold headings and sub-headings, underlined words and terms, tabs, page inserts with boxed key information, and reviews of important items • Prepare learners to listen/read key points. Provide information as learners take notes. Review and verify what they have selected. Provide both confirming and corrective feedback.
Connecting	• Have learners recall relevant prior knowledge and link new learning activity directly to it • **Use familiar or easy-to-use examples to relate concepts to processes, principles, or procedures** • Include analogies, metaphors and other types of comparisons that build bridges btwn known and unknown knowledge and skills • Draw on learners' backgrounds and observations to create connections
Tuning	• Provide practice, examples, and cases that require immediate application • Create practice that focuses on large, obvious differences with the familiar • **Vary practice activities that require different learning and problem-solving** • Evaluate and provide confirming and corrective feedback frequently
Monitoring	• Provide simulation experiences that require application of new learning in realistic context • **Use Peer-to-Peer to monitory learning activities** • Observe on the job application • **Have learners self-assess application** • Question learners about their learning

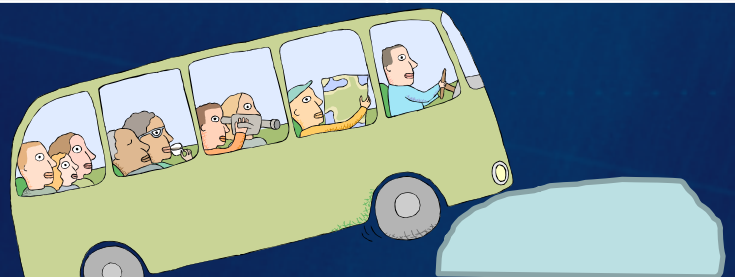
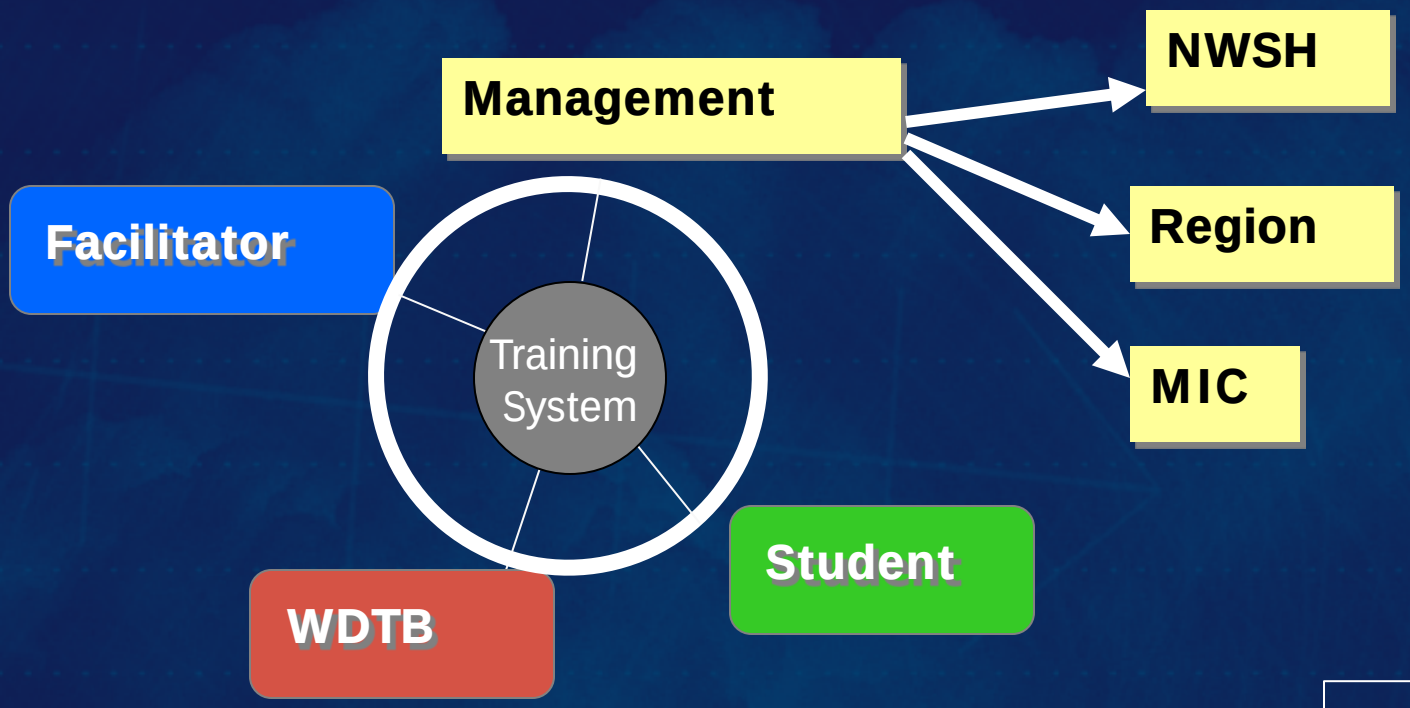
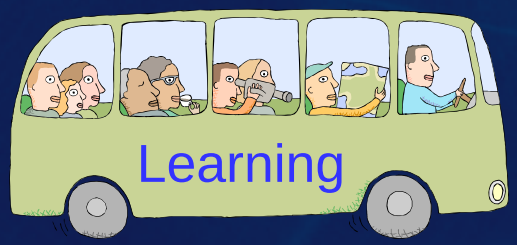
What You Must Know to Be a Better Facilitator

Training is a compensation for what each of our learners lack

Summary

Strategies to Performance Improvement

Transfer Factor	Strategy for Improvement
Clear performance specifications	Don’t just emphasize checkmark
Necessary Support	Invest time for training; encourage use
Clear consequences	Set Expectations for success
Prompt Feedback	Ask questions to your folks after completing LMS tests
Individual capability	Provide emotional needs too
Necessary Knowledge and Skills	Focus is Transfer of skills to job tasks
Credibility, Practicality, Recognition	Best to focus on motivation



Summary
Example of a Transfer Partnership