ESSENTIAL ASPECTS OF EFFECTIVE SIMULATION-BASED TRAINING FOR INCIDENT MANAGEMENT PERSONNEL

Peter Hayes
Bushfire CRC Doctoral Scholarship Holder, School of Psychological Science, La Trobe University, Victoria
BACKGROUND
TRAINING DESIGN – TWO KEY ISSUES

Acquisition

Transfer
TRAINING TRANSFER

Training Inputs

Trainee Characteristics

Training Design

Work Environment

Training Outputs

Learning

Condition of Transfer

Generalisation & Maintenance

Source: Baldwin & Ford, 1988 modified in Liu et al., 2009; Foxon, 1993
MAINTENANCE OF TRAINING TRANSFER

A

Post training Level

Time

B

Pre-Training Level

Time

A

B

© BUSHFIRE CRC LTD 2010
INTEGRATION OF TRAINING & DEVELOPMENT

Development plan

- Classroom
- Field & ICC-based activities
- On-the-job coaching
- Simulation
- Self-directed learning
- AAR & performance reviews
THE USE OF SIMULATION
EXAMPLE OF A SIMULATION SET-UP

Activation Cell

North Division

Observers

Observers

IMT

South Division
SIMULATION FIDELITY (1)

“How closely a simulation imitates reality” (p. 40; Alessi, 1988)

1. Physical fidelity
   > Looks and feels like the actual environment

2. Psychological fidelity
   > Prompts key psychological processes
THE DRIVE FOR PHYSICAL FIDELITY...

Learning

Physical fidelity & Cost
PHYSICAL VS. AND PSYCHOLOGICAL FIDELITY
SELECTING THE FIDELITY OF SIMULATIONS...

Trainee Characteristics

Task Complexity

Type of Skill Development

Degree of Physical Fidelity

Degree of Psychological Fidelity
DEBRIEFING PRINCIPLES
DEBRIEFING PRINCIPLES II

- Cued debriefing
- Focus on mastery of key skills rather than on their performance
THE ASSESSMENT OF IMT PERSONNEL

• Important to understand and assure the bench strength of an organisation, region, district, team...
THE ASSESSMENT OF IMT PERSONNEL II
ASSESSING THE TRAINEES VS. THE TRAINING PROGRAM...

1. Were personnel engaged by the training?

2. Did personnel learn from the course or exercise?

3. Do the participants use these new skills on the job?

4. Do these new skills lead to improved safety, better quality decisions or other efficiencies?

(Kirkpatrick, 1979; Goldstein, 1992)
PERFORMANCE ASSESSMENT PRINCIPLES

(Salas et al. 2009):

1. Know the behaviours, attitudes, and cognitive competencies required for performance
2. Develop metrics that are diagnostic of performance
3. Capture performance at multiple levels of analysis
4. Develop and implement training programs for observers and instructors
5. Provide structured tools or protocols for observers
6. Do not overburden observers and maintain a good ratio of observers to trainees

<table>
<thead>
<tr>
<th>Facet</th>
<th>Strongly Disagree</th>
<th>Mostly Disagree</th>
<th>Slightly Disagree</th>
<th>Neither Agree nor Disagree</th>
<th>Slightly Agree</th>
<th>Mostly Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>The media release was clearly written and easy to understand</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
</tr>
</tbody>
</table>
CONCLUDING COMMENTS

Questions...?