A REVIEW OF EVIDENCE-BASED TRAINING STRATEGIES

Marnie Shapiro, Denice Rios, & Ellie Kazemi
California State University, Northridge
Researchers increasingly focused on developing evidence-based training strategies (Pétursdóttir et al., 2006; Roscoe et al., 2006)
THE IMPORTANCE OF TRAINING

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Direct service provided by entry-level staff with minimal experience (Taylor, Bradley, & Warren, 1996)
**THE IMPORTANCE OF TRAINING**

- Researchers increasingly focused on developing evidence-based training strategies (Pétursdóttir et al., 2006; Roscoe et al., 2006)

- Direct service provided by entry-level staff with minimal experience (Taylor, Bradley, & Warren, 1996)

- Incorrect implementation may:
  - Result in variable treatment outcomes (Wolery et al., 2002)
THE IMPORTANCE OF TRAINING

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- Direct service provided by entry-level staff with minimal experience (Taylor, Bradley, & Warren, 1996)

Incorrect implementation may:

- Result in variable treatment outcomes (Wolery et al., 2002)
- Limit ability to interpret outcomes
MAIN OBJECTIVES

- Focus on reviewing training literature
- Provide examples of effective training strategies
What can we learn about effective training?
Publications on Training

<table>
<thead>
<tr>
<th>Date</th>
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<tr>
<td>1980-1990</td>
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<td>16</td>
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Training Articles
N = 62
Publications on Training

General Keywords:
Staff, Train* and Behavior Analysis

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Training Articles N = 62
BEHAVIOR SKILLS TRAINING (BST)

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BEHAVIOR SKILLS TRAINING ELEMENTS (BST)

- Instruction: 97%
- Modeling: 66%
- Rehearsal: 56%
- Feedback: 76%
- All Elements: 44%

N = 62

Percentage of Publications

Training Element
BEHAVIOR SKILLS TRAINING ELEMENTS (BST)

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Instructions

- Clear, concise verbal or written objectives (e.g., task analyses)
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97% of articles included an instructional component
INSTRUCTION EXAMPLE

Trained undergraduate students to conduct functional analyses (Iwata et al., 2000)
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- Written descriptions of assessment conditions
- Brief summaries focusing on salient components
  - Purpose of each condition
  - Target behaviors
  - How to conduct a session
COMMONALITIES ACROSS LITERATURE

Instructions:

- **Verbal** (Petscher et al., 2007; Schepis et al., 2000)
- **Written** (Arnal et al., 2007; Salem et al., 2009)
- **Class/workshop** (Burgio et al., 1983; Wallace et al., 2004)
- **Individualized** (Graff et al., 2012; Sarokoff et al., 2004)
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- **Video** (Barnes et al., 2011; Nosik et al., 2011)
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- Class/workshop (Burgio et al., 1983; Wallace et al., 2004)
- Individualized (Graff et al., 2012; Sarokoff et al., 2004)
- Video (Barnes et al., 2011; Nosik et al., 2011)
- Few days before or immediately prior to training
Instructions:

- Do not know which medium results in most gains
FUTURE CONSIDERATIONS

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• Do not know which medium results in most gains
• Instructions alone is ineffective (Feldman et al., 1989; Hudson, 1982)
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- Do not know which medium results in most gains
- Instructions alone is ineffective (Feldman et al., 1989; Hudson, 1982)
  - Graff and Karstsen (2012)
  - Instructions alone for low risk procedures?
MODELING

• Modeling
  • Model necessary components during instruction
MODELING

Modeling

- Model necessary components during instruction

66% of articles included a modeling component
Trained staff to conduct discrete-trial sessions (Catania et al., 2009)

- 7 minute video
- Match-to-sample task
Trained staff to conduct discrete-trial sessions (Catania et al., 2009)

- 7 minute video
- Match-to-sample task
- Voice over script
COMMONALITIES ACROSS LITERATURE

Modeling:

• In vivo models
  – Peers (Codding et al., 2008; Flemming et al., 1992)
  – Experimenter/Supervisor (Crossland et al., 2008; Roscoe et al., 2008)

• Video models (Catania et al., 2009; Luiselli et al., 2010)
COMMONALITIES ACROSS LITERATURE

Modeling:

- In vivo models
  - Peers (Coddington et al., 2008; Flemming et al., 1992)
  - Experimenter/Supervisor (Crossland et al., 2008; Roscoe et al., 2008)

- Video models (Catania et al., 2009; Luiselli et al., 2010)

- In conjunction with instruction (Barnes et al., 2011; Selinske et al., 1991)

- Interspersed with role-play/rehearsal (Pétursdóttir et al., 2006; Roscoe et al., 2008)
FUTURE CONSIDERATIONS

Modeling:

- Do not know which medium of modeling results in most gains for staff
Modeling:

- Moore et al. (2007)
  - Compared two different types of video modeling
  - Video containing full range of behaviors staff will be required to emit is most effective
Rehearsal

- Practice until mastery criterion is reached
## Rehearsal

- Practice until mastery criterion is reached

56% of articles included a rehearsal component
Trained students to implement a picture exchange communication system (Rosales et al., 2009)
REHEARSAL EXAMPLE

Trained students to implement a picture exchange communication system (Rosales et al., 2009)

• Advanced undergraduate student as confederate
• Rehearsed with confederate

![Diagram of a picture exchange communication system]
COMMONALITIES ACROSS LITERATURE

Rehearsal:

- Uniform: immediately following training
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- Experimenter or supervisor (Rosales et al., 2009; Kissel et al., 1983)
- Peer (Ducharme et al., 1992; Wallace et al., 2004)
- Actual consumer (Lavie & Sturmey, 2002; McBride et al., 2003)
COMMONALITIES ACROSS LITERATURE

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Which medium results in most rapid gains?
Feedback

- Praise, tangibles, or corrective statements are provided contingent on performance
Feedback

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76% of articles included a feedback component
Trained staff to accurately implement discrete trial teaching (Sarokoff & Sturmey, 2004)
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- Verbal feedback immediately following practice
  - Positive comments
  - Corrective statements
COMMONALITIES ACROSS LITERATURE

Feedback:

• Positive comments (Flemming et al., 1992; Wallace et al., 2004)
COMMONALITIES ACROSS LITERATURE

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- Positive comments (Flemming et al., 1992; Wallace et al., 2004)
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- Corrective element (DiGennaro et al., 2007; Noell et al., 2000)
COMMONALITIES ACROSS LITERATURE

Feedback:

- Positive comments (Flemming et al., 1992; Wallace et al., 2004)
- R+: Contingent money (Austin et al., 1996; Roscoe et al., 2006)
- Corrective element (DiGennaro et al., 2007; Noell et al., 2000)
- During or after training
Feedback:

• When should feedback be delivered?
Training packages in all studies resulted in socially significant gains

- Weinkauff et al. (2011) taught teachers to implement over 100 skills, including:
  - FCT
  - Learning to learn programs
  - Domain specific skills and many more...
SUMMARY

- Training packages in all studies resulted in socially significant gains
  - Weinkauff et al. (2011) taught teachers to implement over 100 skills, including:
    - FCT
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    - Domain specific skills and more

Components of BST (i.e., instruction, modeling, rehearsal, and/or feedback) have shown to be effective at teaching:
  - Functional analyses, preference assessments, token economies, DTT, prompting, feedback, chaining, and more...
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Variability in the literature
FUTURE RESEARCH & COMMENTS

Few key training elements:

• Training must be practical and time efficient
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• Competences acquired should last and generalize
FUTURE RESEARCH & COMMENTS

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  - Training must be practical and time efficient
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  - Competences acquired should last and generalize

Component and parametric analyses:
- E.g., component analysis of BST during FA (Ward-Honrner & Sturmey, 2012)
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