Behavioral Systems Analysis

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FABA OBM 2007
Our Peeps

Skinner
M. Malott
R. Malott
Austin
Brethower
Rummler
Glenn
Gilbert
Binder
Dickinson
Harshbarger
Sulzer-Azaroff
Tosti
Daniels
BSA Beginnings

• Began in the late 50s through the 60s – Discovery Phase
  – Combining behavior analysis and general systems theory to better understand human and organizational performance
    • TPS
    • HPS
    • 3 levels approach

• The term “Behavioral Systems Analysis”

• 70s through today – Application Phase
  – Application and expansion of the tools and models to understand and improve organizational performance
What is Behavioral Systems Analysis?

• Also called…
  – Performance Systems Analysis
  – Human Performance Technology

• “A behavioral system is a group of interrelated elements that form an entity” (Malott, 2002)

• BSA, then, is a process of analyzing (and altering when necessary) the interrelated elements that make up any system to ensure the successful functioning of that system

• Because the elements of the system are interrelated, changes in one part of the system are likely to affect other parts of the system
BSA Process

- ASDIER (Malott, 1974)
  - ADDIE
  - DMAIC
  - PPMS (Rummler, 2001)
  - Behavioral Sales Management Model (Martinko, Casey & Fadil, 2004)
  - Safe Performance Model (Sulzer-Azaroff, McCann, & Harris, 2001)
Value

• BSA tools provide clarity for right decisions
  – Identifies where to focus effort
• Shows how changes in the system affect other parts of the system
  – Limits misinterpretation
  – Facilitates communication about work
• Requires that we look beyond the performance of the individual
  – Include other variables (strategy, processes, receiving systems) that affect organizational performance
Let’s Walk Through the Process

Hi, I’m Systems Bob!
A
Analyze
Behavioral Systems Analysis Tools

• Behavioral Systems Engineering Model – M. Malott
• Total Performance System – Brethower
• Super System/Relationship Map – Rummler
• Is/Should Process Maps/Task Analysis – Rummler, M. Malott
• ABC (PIC/NIC) Analysis - Daniels
• Behavior Engineering Model/6boxes/Performance Diagnostic Diagnostic Checklist – Gilbert, Binder, Austin
• Human Performance System – Rummler
• Performance Planned and Managed System/Interlocking Contingencies at Various Management Levels/Cultural Change Model – Rummler, M. Malott, R. Malott
Behavioral Systems Engineering Model

1. Macrosystem
2. Organization
3. Process
4. Task
5. Behavior
6. Management

Total Performance System

Total Performance System (Brethower, 1982)

1. Mission

2. Inputs

3. Processing System

4. Processing System Feedback

5. Outputs

6. Receiving System

7. Receiving System Feedback
Relationship Map

Relationship Map (Rummler & Brache, 1995)
Process Map

Process Map (Malott, 2003)
### Performance Diagnostic Checklist

Answer each of the following questions, providing data in support of your answer if possible.

#### Antecedents and Information

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| O   | O  | Has the employee received adequate instruction about what to do? (not training - explicit instructions like “I want you to do this, this, and this before we leave today...”)
| O   | O  | Are employees aware of the mission of the department/organization? Can they tell you what it is? |
| O   | O  | Are there job or task aids in the employee’s immediate environment? Visible while completing the task in question? Reminders to prompt the task at the correct time/duration? |
| O   | O  | Is the supervisor present during task completion? |
| O   | O  | Are these frequently updated, challenging, and attainable goals set that employees are comfortable with/feel are fair? |

#### Equipment and Processes

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#### Knowledge and Skills

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#### Consequences

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Interlocking Contingencies at Various Management Levels

Interlocking Contingencies (Malott, 2002)

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<tr>
<th>WHOSE BEHAVIOR?</th>
<th>BEFORE?</th>
<th>BEHAVIOR?</th>
<th>AFTER?</th>
<th>WHAT CONTINGENCY?</th>
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<tr>
<td>TARGET PARTICIPANT</td>
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Specify
Analyze

- S
- Specify

A
- Analyze
Specify **Realistic** Change Initiatives

- **Linked to results**
  - Establish baseline measures
  - Calculate PIP and potential ROI
- **Relevant system support/constraints**
  - Level of leadership commitment
    - What results do they expect?
    - When do they expect to see results?
  - Current priorities
  - Resources
Specify

Analyze

Design
Design Targeted Intervention

- Accurate?
- Relevant?
- Consistent?
- Clear?
- Complete?

Create SHOULD versions of change targets
A  Analyze
S  Specify
D  Design
I  Implement
Implement Intervention

- Accurate?
- Relevant?
- Consistent?
- Clear?
- Complete?

PPMS, Interlocking Contingencies, Cultural Change Model
A
Analyze

S
Specify

D
Design

I
Implement

E
Evaluate
Evaluate

- What worked?
- What didn’t?
- Goals, intervention, results acceptable?
A  Analyze → S  Specify → D  Design → I  Implement → E  Evaluate → R  Recycle
Recycle

• Continue to measure and use tools to help guide adjustments as necessary
The Research
Where are the published data to support the use of BSA tools?

• Some studies employed BSA
  – Sulzer-Azaroff, Loafman, Merante & Hlavacek (1990)
  – Sulzer-Azaroff, Pollack & Fleming (1992)
  – Williams & Cummings (2001)
  – Williams, Di Vittorio, & Hausherr (2002)

• Didn’t specify exactly how the use of the tools impacted choice of intervention
  – Lack of technological descriptions make replication difficult

• Didn’t directly investigate how BSA tools impacted results
Where’s the published data to support the use of BSA tools?

• A recent study directly compared the effects of process and behavioral level changes, finding that a combined approach was most effective
Where’s the published data to support the use of BSA tools?

• Recent studies have investigated the efficacy of the PDC as an assessment tool
  – Austin, Weatherly, & Gravina (2005)
  – Pampino, MacDonald, Mullin, & Wilder (2003)
  – Rohn, Austin, & Lutrey (2002)

• Could be used as a model to test other systems analysis tools
Identifying the Research Question

- Compare effectiveness of interventions derived from BSA tools vs. arbitrarily derived interventions
- Compare effectiveness of interventions based on BSA tools vs. PM tools
- Compare effectiveness of interventions at various levels of performance
Identify Barriers

• Start with an analysis of OBM as a system
  – OBM Network mission and strategic plan
  – Informal assessment through conversations with researchers and practitioners
A Preliminary Analysis of OBM & Demonstration of Tools
Field of Behavior Analysis

Mission: To develop, support and enhance the growth and vitality of behavior analysis through research, education and practice.
OBM

Mission: To develop, enhance, and support the growth and vitality of organizational behavior analysis through research, education, practice and collaboration

OBM Network
Works to develop, enhance, and support mission of field through its initiatives

Research
Education
Practice
Collaboration

Society

Not on strategic plan but inferred in mission

- Research:
  - # and $ of OBM network (Chris Anderson) grant applications
  - # of external/non-student grant applications submitted
  - # of professors and graduate student members conducting research
  - Type of research being conducted (performer, process, org, macrosystem levels?)
  - # of research based vs. conceptual conference presentations

- Education
  - # of student members
  - Timeliness & Accuracy of information disseminated about graduate schools, undergraduate courses & practices/internships with OBM focus, international missing
  - Number of nominations received for OBM Network (Lifetime Achievement) award
  - Quality of graduate programs

- Practice
  - # and type of internships offered
  - Web/print materials availability for practitioners
  - Number of nominations received for OBM Network (Lifetime Achievement) award
  - # of consultants and organizational managers
  - # and types of OBM jobs available (note: need better alignment with START...n=0 OBM jobs currently posted; n=2 applicants)

- Collaboration
  - # and scale of projects with businesses/other professional network organizations (what about other SIGs?)
  - Quantity, quality and cost of marketing efforts
  - # of SIG activities at ABA
  - # of liaisons (internal and external)

Research:
- # and $ student research (Chris Anderson) grants awarded
- Research demand

Education:
- Membership retention (note: need to track losses and why left)
- # of OBM graduate program applications
- Employer satisfaction data

Practice:
- Internships
- Student transitions into positions
- Web hits from practitioners
- Membership retention (note: need to track losses and why left)
- Placement of OBMers in organizations (note: need better alignment with START)

Collaboration:
- Business (other professional notations/leaders for services)
Internal Feedback

• Research:
  – # and/or $ of OBM network grant applications
  – # of members conducting research
  – # of conference presentations

• Practice
  – # of internships offered
  – Web/print materials availability for practitioners
  – Number of nominations received for OBM Network (*Lifetime Achievement*) award
  – # of consultants and organizational managers
Internal Feedback

• Research:
  – # and $ of OBM network (*Chris Anderson*) grant applications
  – # of external/non-student grant applications submitted
  – # of professors and graduate student (what about practitioners?) members conducting research
  – Type of research being conducted (performer, process, org, macrosystem levels?)
  – # of research based vs. conceptual conference presentations

• Practice
  – # and type of internships offered
  – Web/print materials availability for practitioners
  – Number of nominations received for OBM Network (*Lifetime Achievement*) award
  – # of consultants and organizational managers
  – # and types of OBM jobs available (note: need better alignment w/START…n=0 OBM jobs currently posted; n=2 applicants)
External Feedback

• Research:
  – # and $ student research (*Chris Anderson*) grants awarded

• Practice
  – Internships
  – Student transitions into positions
External Feedback

• Research:
  – # and $ student research (*Chris Anderson*) grants awarded
  – Research demand

• Practice
  – Internships…
  – Web hits from practitioners
  – Membership retention (*note: need to track losses and why left*)
  – Placement of OBMers in organizations (*note: need better alignment with START*)
OBM: Research/Practice

Mission: To develop, enhance, and support the growth and vitality of organizational behavior analysis through research, education, practice and collaboration.

Research
- Research Environments (N=?)
  - University affiliated OBM members (N=158)
  - Contingencies?
- Researcher

Research & Practice
- Research/Applied Environments (N=?)
  - OBM members (N=?)
- Researcher/Practitioner

Practice
- Applied Practice Environments (N=?)
  - Organizational affiliated OBM members (N=77)
  - Contingencies?
- Practitioner

How do we close the gaps?
Contingencies?

- **Researcher Contingencies**
  - Difficult to recreate organizational complexity in lab settings
  - Difficult to demonstrate control in complex organizations
  - Multiple tools/interventions/measures in same project make clear functional relationships difficult to demonstrate
  - PM interventions may take less time and be more straightforward, easier to implement in organizations and in the lab

- **Practitioner Contingencies**
  - May not have a supportive work environment for BSA research
  - Isolation of variables not realistic
  - Multiple measures/multiple interventions
  - Competing workplace contingencies
OBM: Behavior Level

Mission: To develop, enhance, and support the growth and vitality of organizational behavior analysis through *research*, education, *practice* and *collaboration*.

Research

Research Environments
(N=158)
University affiliated OBM members
Contingencies?
Researcher

Research& Practice

Research/ Applied Environments
(N=?)
OBM members (N=?)
Contingencies?
Researcher/Practitioner

Practice

Applied Practice Environments
(N=?)
Organizational affiliated OBM members
Contingencies?
Practitioner

Contingencies?

What’s working?

What’s not working?

Society

Is collaboration the answer?
“All scientists, whether giants or not, enable those who follow them to begin a little further along”

- Skinner