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Integrating Experiences from Education and Practice to Create a Guided Approach to Behavioral Systems Analysis

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The Problem

In the field of Organizational Behavior Management (OBM), many of us share the same struggle – how to promote and educate others on our approach to performance improvement. Promoting OBM is a challenge for both educators working with undergraduate and graduate students, as well as practitioners working within their own organization or with particular clients. The task of sharing the concepts and tools of Behavioral Systems Analysis (BSA), for instance, seems especially difficult. To this end, we have attempted to incorporate what we have learned from exemplar authors in the field of BSA (e.g., Dale Brethower, Maria Malott, and Geary Rummel) and through our experiences with clients and students in order to create a guided approach to integrate the concepts, tools, and various approaches of BSA. Our goal is to create a workbook and a supporting workshop that can be used to guide learners through the performance analysis and improvement process. We are not attempting to create our own brand of BSA; rather we are trying to synthesize what is already available from a variety of sources to help learners on their performance improvement journey.

"Our goal is to create a workbook and a supporting workshop that can be used to guide learners through the performance analysis and improvement process."

Behavioral Systems Analysis

BSA is an approach to performance improvement that requires analyzing not only the behaviors of individuals, but all components of the system that could impact performance, as well as the system as a whole (Brethower, 1982; 2000; 2001; 2002; Malott, 2003; Sulzer-Azaroff, 2000). BSA can be contrasted from the more commonly applied OBM interventions known as performance management (PM). PM involves analyzing the antecedents and consequences surrounding the behaviors of individuals (or groups of individuals) within the organization and altering those antecedents and consequences when necessary (Austin, 2000; Daniels & Daniels, 2004). Common PM interventions include goal setting, feedback, job aids, token systems (earning points that can later be redeemed for valued items), lottery systems, and so on (Redmon & Wilk, 1991). BSA interventions may include these components, but are also likely to include process redesign or automation, changes in policy, changes in resource deployment, strategy development and/or realignment, development of incentive systems, organizational restructuring, and managing the manager initiatives, to name a few. The value of this approach is that it allows us to analyze the organization outside of the basic three-term contingency for variables that can significantly impact both individual and organizational performance

beyond current levels.

"Complexity is inherent to BSA."

Complexity is inherent to BSA (Glenn, 1988; Malott, 2003). Conducting a comprehensive analysis can involve multiple levels of an organization (i.e., macro system, organization, management, process, and performer) and the use of several tools (e.g., TPS diagramming, relationship mapping, process mapping, human performance system analysis, and management contingency analysis). Thus, integrative tools are necessary to work through the complexity of systems to ultimately identify areas where the subsystems and individual behavior disconnects from

the goals and processes of the overall organization. Such tools must offer solutions, plans for getting those solutions implemented, and ways to continuously monitor performance and adapt to changing needs over time (Malott, 2003; Rummeler & Brache, 1995; Rummeler, 2001; 2004). An individual or team charged with improving performance may look to several sources of BSA tools for guidance. Each source is likely to provide slightly different processes and/or tools. The overall effort can be overwhelming, leaving those involved looking for easier, albeit possibly less effective, solutions to their performance problems.

The Audience

Complicating the situation more is the fact that BSA's (and OBM's) audience is made up of individuals from widely varying backgrounds with very different repertoires of knowledge and skills. Perhaps you are a BSA consultant working with organizations dealing with a specific problem with no preconceived solution or struggling with a performance improvement initiative such as Six Sigma. Perhaps you are an expert behavioral systems analyst analyzing your own organization. Perhaps you are a novice in BSA, but are charged with improving performance in your organization. Or, perhaps you are a professor introducing undergraduate and/or graduate students to BSA. No matter the audience, the goal of BSA is to produce meaningful and sustainable results. This means that performance improvement initiatives need to be understood by both those undertaking the analysis and improvement roles and those receiving the services.

A Streamlined, Guided Approach to BSA

Through our own experiences with clients and students, we began to collect and integrate the various concepts, tools, and processes that make up our own BSA repertoires. Each of us has been fortunate enough to learn from Dale Brethower, Dick Malott, Maria Malott, Geary Rummeler, Alyce Dickinson and other experts in the field of BSA. As we began consulting and teaching, we tried to find ways to consolidate what we have learned from each of them into user-friendly tools for clients and students. We started creating worksheets to accompany the various tools. These proved to be especially helpful when working with clients remotely. We borrowed from each other, built off each other's accomplishments, analyzed what worked and what did not with each audience, and eventually compiled it into a BSA workbook that is currently being piloted and will be presented at a workshop at the 2008 Association for Behavior Analysis conference in Chicago (McGee, Diener & Miguel, 2008).

"We borrowed from each other, built off each other's accomplishments, analyzed what worked and what did not with each audience, and eventually compiled it into a BSA workbook..."

The BSA Workbook was founded on three general notions: (1) the BSA approach follows a process; (2) BSA requires analyzing multiple levels of the organization; and (3) having a guide to work from helps facilitate information gathering and sharing, cooperation, the identification and achievement of shared goals, problem identification, and solution development.

The ASDIER Process

There are several existing process models in the area of performance improvement. In training and instructional design, the ADDIE model is frequently followed (Analyze, Design, Develop, Implement, and Evaluate: Beckshy & Doti, 2000). In Six Sigma, the DMAIC process is followed (Define, Measure, Analyze, Improve, and Control: Pande, Neuman, & Cavanagh, 2000). Malott (1974) introduced the ASDIER process (Analyze, Specify, Design, Implement, Evaluate, and Recycle). It would not be difficult to quickly locate a dozen other process models with a search on the Internet. Most models include essentially the same fundamental requirements for effectively improving performance. This, in fact, seems to be a source of confusion for students. We hear questions such as, "Why are there so many models? Which one is right? They all look the same." In the BSA Workbook, we have chosen to introduce the ASDIER model while acknowledging that others exist and, typically, do not conflict.

The Multi-Level Analysis

As stated previously, BSA involves analyzing not only the behaviors of individuals within the system, but all components of the system that could impact performance, as well as the system as a whole. This means that performance needs to be analyzed from various perspectives, or levels. Approaches to improving performance at various levels have been provided by several prominent behavioral systems analysts.

Brethower (1982) presented the Total Performance System (TPS) diagram, a tool that can be used to analyze the effects of aggregate outcomes at any level of the organization. The TPS diagram gives relevant information for diagnosing organizational problems and helps pinpoint what needs to be changed so consumers can be satisfied. As suggested by Redmon and Wilk (1991), by adding the TPS model to behavioral interventions, it is possible to provide the framework for selecting those interventions that are linked to goals important to organizational survival. The Super System Map (Rummler, 2001; Rummler, 2004) is similar to Brethower's TPS, but includes competition and environmental variables as important factors in the analysis of the organization. Rummler and Brache (1995) introduced a three-level approach to analyzing performance that includes organizational, process, and job/performer levels. Malott (2003) introduced a six-level approach to analyzing performance in her Behavioral Systems Engineering Model, employing versions of the TPS, process mapping, three-term contingency analysis, and Interlocking Contingencies at Various Management levels (similar to the Cultural Change Model: Malott, 1999), as well as introducing macrosystem and task analyses. Models to comprehensively analyze the factors that influence individual performance include the Human Performance System (Rummler, 2001; 2004), the Performance Diagnostic Checklist (Austin, 2000), and the Behavioral Engineering Model (Gilbert, 1996).

In our experiences consulting and teaching, we have drawn from each of these approaches, used all of these tools, and combined, rearranged, or altered these models into a collective whole. Our workbook was designed to incorporate what we have found in our own experiences to be the most useful components and useful tools from each approach into one workable, guided document that can be used with students, colleagues, and clients.

Guided Analysis

While having a process and tools to follow is critical in conducting performance analyses, they are not enough for the beginning analyst. The difference between the novice and the expert is that the expert knows which questions to ask to get the necessary information to fill in the tools and, thereby, identify the gaps in performance. The beginner does not typically know which questions to ask. Most systems models are not constructed in a learner-centric format and require future users to be "certified" through a series of training events and tests (such as the Six Sigma "Black Belt" designation). For this reason, we have created an algorithm in the form of guided questions to facilitate each step of the analysis process. By becoming fluent in asking the right questions, even the beginner analyst will be able to accurately pinpoint where performance problems lie.

Summary

Our diverse experiences and shared goal of teaching behavioral systems analysis has led to the compilation and refinement of what we have found works well to be a successful Behavioral Systems Analyst. By analyzing ourselves and our audience as systems and continuously refining what we do, we have identified and designed a workbook that is relevant and comprehensive to any type of organization and industry. The workbook and supporting workshop are for those who want to make positive change happen (i.e., systems managers) with the necessary tools and questions they need to execute the ASDIER process (Malott, 1974):

- Analyze the variables that affect the operation of the system
- Specify the objectives to be accomplished by that system
- Design the system components to accomplish those objectives
- Implement the design
- Evaluate the extent to which the design accomplished the specified objectives
- Recycle through the previous five steps until the system objectives are met

After years of combined experience in applying and teaching behavioral systems analysis across diverse organizations and classrooms, we found a way and are ready to help others disseminate the powerful science of behavioral systems analysis. It is important to note, however, that our algorithm was created based on case studies and anecdotal data. Thus, the instructional effectiveness of our workbook, as well as of the aforementioned BSA tools have yet to be empirically validated. We hope that our suggestions for practice can also inspire applied research in BSA. We welcome any feedback from the OBM community and invite you to participate in our workshop in May.

Drs. Diener, McGee, and Miguel are the founders of The ASDIER Group. The ASDIER Group is dedicated to disseminating behavioral systems analysis tools and methodology to help individuals and organizations exceed their goals.

Lori H. Diener, Ph.D. has improved performance in a variety of organizations across diverse industries including automotive, construction, education, pharmaceutical, service and technology, in both the non-profit and for-profit sectors. She has extensive experience conducting systems analyses, reengineering processes, and designing performance measurement, management and maintenance systems. Lori is currently a consultant at Ardent Learning where she focuses on the application of behavioral systems analysis tools to specify, design, implement and evaluate performance based learning solutions for clients such as BMW, Ford, Porsche, Tiffany & Co. and Volvo.

Heather M. McGee, Ph.D. is an assistant professor of in the Department of Psychology at Western Michigan University. Heather's interests lie in improving organizational performance through interventions based on comprehensive behavioral systems analysis. In her consulting, she has designed, developed and implemented organizational performance solutions in a variety of industries and settings, including the pharmaceutical, education, and health services industries. These solutions have included performance-based instruction, performance management, behavioral systems changes, and lean sigma initiatives.

Caio F. Miguel, Ph.D., BCBA is a board certified behavior analyst and an assistant professor in the Psychology Department at [California State University, Sacramento](http://www.calstate.edu), where he co-directs the Behavior Analysis Certificate and Masters programs. He is also an adjunct professor at the [University of Sao Paulo, Brazil](http://www.usp.br). In addition to his clinical work with children diagnosed with autism, Caio teaches Behavioral Systems Analysis (BSA) at the graduate level and consults for human services organizations. He currently serves as the Senior Associate Editor for *The Analysis of Verbal Behavior*, and is in the Board of Directors of the California Association for Behavior Analysis. His research focuses on verbal behavior and complex stimulus control.

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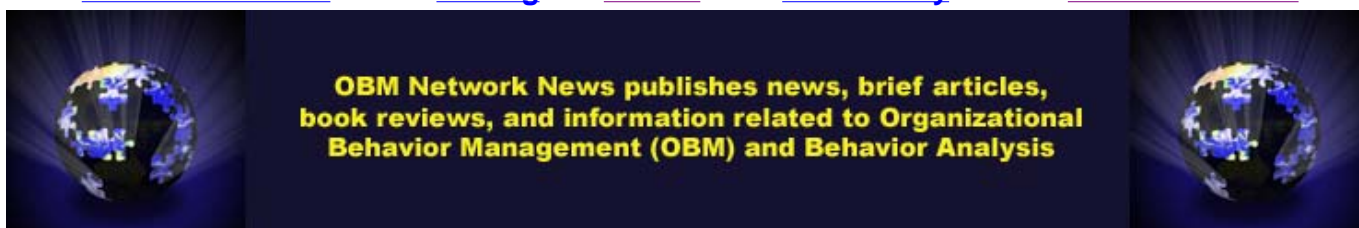
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