

Systemic Thinking: A New Way To Increase Management Effectiveness?

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All Managers Must Be Able To...

- differentiate between symptoms and the real problem.
- realize the long term implications of decisions.
- solve problems effectively and in a timely manner.

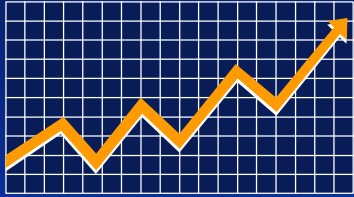


What if...

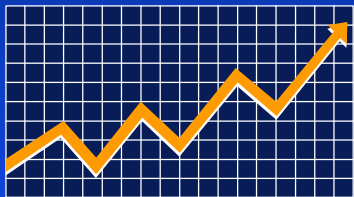
- **you were confident that all new-hires were excellent problem solvers?**
- **entry-level managers could mirror problem solving abilities of seasoned executives?**
- **you could improve your ability to design the optimum structure for your organization?**



Two New Dimensions



The more Systemic Thinking you have, the better you are at solving problems ($\underline{r} = .28$, $\underline{p} = .001$).



The more aware you are of others' assumptions, the better you are at solving problems ($\underline{r} = .22$, $\underline{p} = .009$).



Q. What Is Systemic Thinking?

A. A tool that illuminates the “big picture” and helps managers identify root causes.

Patterns of behavior and recurring cycles indicate points of leverage where cost-effective changes should be made.



Q. What Are Mental Models?

A. Opinions, assumptions, or generally held beliefs that are mostly unspoken.

They can impact performance and should be considered as part of the “big picture”.



Our Latest Study

- What we had to go on
- How we did it
- Our experts



Here's What We Know...

- We've found evidence that ST is real
- Executives have more ST than Students
- Experience does not make us more aware of others' assumptions



Future Research Aims

- Further refine our test
- Determine if our test generalizes to real-life scenarios
- Develop and validate ST training
- Conduct future research in applied settings



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An article in *Newsweek* reported that managers of US companies use good problem solving skills only 12 percent of the time (Cohen & Paquette, 1988). With this alarming statistic in mind, consider that all managers, no matter what level, must solve problems constantly. They must be able to identify the root causes of problems and develop solutions that will endure. Cost and severe time constraints are always paramount issues.

Imagine, if you will, the possibility of confidently hiring personnel that possessed exceptional problem solving skills. Or imagine if green entry-level managers could be trained in a relatively short time to mirror the problem solving skills of the most seasoned executives. In such a perfect world, the Human Resources/Organizational Development Departments would also be staffed with such highly skilled professionals—professionals that could easily restructure and align organizations for maximum efficiency, including career pathing, conflict resolution, and development of meaningful information systems to monitor and quickly respond to change.

Some organizations seem to rise above the rest, as exemplars riding the tides of change like surfing demi-gods. Researchers have always been intrigued with characteristics that set these organizations apart. Recently, theorists have suggested that

systemic thinkers make better long-term decisions and therefore position their companies above the competition. They believe that executives who possess this skill along with an awareness of how others think and feel are more likely to arrive at successful solutions.

But what is systemic thinking? Systemic thinking has been defined and redefined by theorists today, but basically it is thought of as a lens with which to see the world holistically. It is believed that this vantage point promotes discovery of recurring patterns or feedback loops. From any element within this framework you can trace arrows (“links”) that represent influence on another element. These in turn, reveal cycles that repeat themselves, time after time, making situations better or worse. Senge (Fortune Magazine, 1994) explains systemic thinking as an equation; it would not be A causes B, but A causes B while B causes A, while both continually interrelate with C and D.

Theorists also suggest that effective managers should not only scan organizational behavior for patterns and cyclical causal effects, but also have an ongoing awareness of existing beliefs, stereotypes, and/or assumptions (called *mental models*). Without addressing the motivation behind behaviors (mental models), the solutions posed may lack the complexity needed to hit their mark.

Unawareness of mental models inhibits us from challenging old ways of thinking and can inadvertently lock us into a particular mind-set. White (1990) compares assumptions to “tools” kept in our “mental tool kits” for dealing with events and information. He points out that we rarely question the tools themselves. Consequently, we limit ourselves to the current inventory. As the saying goes, “if all one has is a hammer, every problem begins to look like a nail”.

Awareness of *mental models* blends nicely with the systemic thinking theory, since it is simply another facet of the big, rich, picture to be considered. Mental model awareness is therefore a requirement of any serious systemic thinker. Although such theories are compelling and appeal to us on a common sense level, they have not been empirically validated until now.

Faced with scant theories and no pre-existing tests, this study was fraught with difficulties as to where to begin. In order to examine the relationship between systemic thinking and problem solving ability, a test centered around a business scenario problem was developed. An expert panel took the test individually and their responses were combined into an “expert composite best answer”. This composite answer represented a high quality solution. Experts represented academia as well as the applied business arena. Two were high level executives of Fortune 500 Companies, and three were program directors or Deans of various Business colleges. Sixty-five senior-level executives (deemed ‘successful’ by their established ranks) and 74 Business students were given the scenario to solve. Their solutions were then compared to the expert panel.

Does systemic thinking relate to higher quality solutions as the theorists claim? Which group scored highest? These questions were examined and our research confirmed that in fact both systemic thinking and mental model awareness do relate to problem solving ability (Systemic Thinking $r = 0.28$, $p = 0.001$; Mental Model Awareness $r = 0.22$, $p = 0.009$). The test was able to pick up differences between groups, but lacked the sensitivity to tease out more subtle differences within the groups. Executives did exhibit significantly higher levels of systemic thinking than the student participants ($t = 7.69$, $p = 0.000$) and those same executives more closely approximated the expert composite answer

than the students ($t = 5.78$, $p = 0.000$). However, mental model awareness did not change significantly with experience. This was expected, because without special training to question foundational beliefs, it seems unlikely that one would begin doing so.

As anticipated, seasoned executives outperformed students in systemic thinking and problem solving. Why? If not a part of formal training, then when did these successful executives pick up systemic thinking skills? Did random exposure to certain experiences promote systemic thinking? What about less successful managers? Were they simply not exposed to the same type of experiences and therefore did not develop such problem solving skills? Can training close the gap? Since mental model awareness is related to problem solving, and neither group had very much of it, then wouldn't this indicate a critical training need? As is the case with ground-breaking research, our findings create more questions than they answer. But one thing seems certain, two new management dimensions have emerged.

References

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** These references represent major contributions to the overall development of this paper and are therefore not specifically cited.*