The Manager as a Mediator

A Case Study from the World of Health Professions

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Background and goals of the article

Error is an integral part of human action, but it is also a price one has to pay, a sort of unwanted side-product that we hasten to rid ourselves of. This is true on a personal level as well as on an organizational level. The response to error is denial and concealment. Needless to say, error is accompanied by shame and apprehension regarding the consequences of the error and the punishment it could carry. All this prompts us, as far as possible, to attenuate and erase errors from our personal and collective memories. The role of the manager in the organization is to hunt down errors or 'near' errors. So what does the average manager do when hunting down errors? He/she makes threats, punishes, reprimands, and scolds – this is a behaviorist supposition, something to the effect of "attach an unpleasant experience to the error and improve the employee's motivation in order to avoid an error next time".

The manager does not make the opposite assumption: "My employee is full of internal motivation but something in his/her thinking/learning system has been disrupted". Needless to say there is a considerable price to pay within the organization for that approach of threats and punishments.

This article proposes a contrasting approach – a "manager-as-a-mediator", i.e. a manager who brings about cognitive change and growth with an aim to reducing human error. The hypothesis of this article is that the root of the problem experienced by people committing errors is their weak control of their thinking and learning processes. The average person is slave to his/her own processes

rather than master of them. This article claims that this is the major change that must be undergone by individuals and organizations. Our control of our thinking processes must be reinstated. In this article we use as an example the world of medicine and the human errors committed within it. We believe that our astute readers will be able to project this on to the world of management. Nevertheless, we must emphasize that just reading this article will not suffice to become skillful in avoiding mistakes. Appropriate practice is essential. Following brief practice, one will have to further develop self-control of one's own thinking processes and in this way reduce the occurrence of mistakes.

The background of the project in the world of medicine

Many may be familiar with the landmark report "To Err Is Human: Building A Safer Healthcare System" from the Institute of Medicine in 1999. Since that time there has been significant progress made to improve the design of a medical staff's work environment (e.g. operating rooms, medication packaging, computer systems, etc.), however, there has been very little done to address the ***individual*** at the focal point of the decision-making process.

Specifically, the medical establishment has not yet found a satisfactory solution for dealing with errors deriving from the "human factor." We belong to an advanced, technological society where each of us controls advanced tools with complex technology, whether it's while driving a car, using a computer or when operating advanced industrial instruments or piloting a plane. In the field of management, people run complex systems with considerable success. And yet we still do not have a clear understanding of our own personal operating system, nor do we have the tools to manage our own propensities for thinking and reasoning.

The most frustrating thing when faced with a serious mistake is an inability to identify where the mistake occurred. We can specify all the external factors that led to the mistake, but we have to ensure that when we are fatigued, tense,

under pressure or bored that we know how to avoid making mistakes. We can fix automobiles, rockets, computers and vacuum cleaners. The only thing that we have no idea how to fix is ourselves. The reason we know how to repair various machines and equipment, even very complicated equipment, is because we understand how they function. Thought and its processes seem to us like a "black box." We don't have a good concept of how they work, what causes them to break down at times, nor how to repair them. This lack of knowledge regarding the thought process and its failings is what prevents us from avoiding the next mistake.

Promising scientific work

Prof. Reuven Feuerstein (winner of the Israel Prize in Education and chairman of the International Center for the Enhancement of Learning Ability) developed a theory in the 1950s called "The Theory of Structural Cognitive Modifiability" (SCM) which postulates in a thorough manner that human intelligence can be modified structurally and meaningfully.

This theory is gaining worldwide support due to research that has strengthened its claims as well as the success of methods derived from it which have been implemented in various populations around the world. The theory's power comes from its ability to simply and generically analyze the basic procedures that comprise human thought. The theory enables the mentor, teacher and student to identify basic cognitive functions that have failed, and thereby construct cognitive strategies that will prevent various repetitive failures of the same function.

On the basis of this theory, approximately ten years ago, Feuerstein created an application of this methodology for vocations with advanced cognitive functionality. It was initially implemented with fighter pilots and then its use was adapted to doctors, petrochemical engineers and others. The goal of the application is to allow people with a high level of function to improve their

performance mainly by avoiding human error in the decision-making process and in the execution of both simple and complex tasks.

Numerous errors are caused by the human factor. These errors are generally related to external factors such as fatigue, tension, routine and various other types of external pressures at the workplace or in individuals' private lives. The crux of the problem is that these factors are very difficult to solve or treat. Fatigue could be alleviated by adding additional positions to hospital staff, but this type of solution carries with it complex budgetary ramifications that may not be resolved in the near future. Problems of tension and various types of other pressures are much more difficult to solve and emotional treatment of these problems can be exceptionally complicated. Essentially, the emotional foundation is much more fluid and attached to the primary needs of a person. That makes it very difficult to address. However, the cognitive foundation of a person's thought is much more readily available for treatment and is much more stable following treatment.

Current treatments: punishment and/or system alterations

Current treatment methods for human errors center on punishment to deter and discourage their occurrence or systemic alterations to address perceived inadequacies. A nurse who erred and injected an infant with the wrong medication will be immediately suspended, despite the fact that it is very unlikely that individual will err again. The nurse's colleagues will return to work and they may very well make that same human error or one just like it. Punishment as a deterrent assumes the person who made the mistake did not "try hard enough." What about all the mistakes we make even when we try very earnestly to succeed?

Another method for dealing with some of the mistakes that occur is by altering procedures to avoid the possibility of errors or changing the apparatus so that it will not allow the commission of errors. As all those familiar with the medical

profession know, even with all the sophisticated equipment and well-defined procedures, the human factor is still required in the process of treatment. We can also say with certainty that in any situation where a person must make a decision, mistakes may occur.

Interventions that work

Using a series of simple exercises, participants in a workshop will begin to experience the extent to which human thought is liable to errors. This "educational intervention" will demonstrate the chasm of understanding that stands between physicians/healthcare professionals and the causes for their errors. The exercise will also help participants identify the process(es) they use to solve problems.

Primary purpose of the educational intervention in a workshop:

To reduce the future occurrence of errors and near-errors made by healthcare professionals.

Participants in a workshop will:

1. Understand their thought process. They will focus on how they think (cognitive propensity) rather than on what they think or their medical knowledge.
2. Understand the cognitive propensities within their personal thought process that lead to errors. They will identify the stage of the process where these error(s) may occur — input, processing or output. And they will identify what cognitive function failed.
3. Learn to identify, in advance, which errors may occur in each medical procedure they regularly perform and create an error-avoiding strategy (cognitive map).
4. Continue to reinforce this understanding of their cognitive propensities through a computer-based program that will both

instruct and support them when they take part in a weekly, anonymous debriefing to help evaluate their performance.

The knowledge gained will:

1. Enable the participants to improve their performance and avoid errors by learning from their mistakes.
2. Facilitate peer-learning within an organization through a common cognitive language.
3. Aid the development of mentorship, debriefing and briefing processes that make use of uniform cognitive terms.
4. Help form a conceptual framework within the organization that will facilitate the implementation of advanced applications to improve cognitive efficiency, such as: self-debriefing, identifying cognitive risks in the organization, improving mentorship and training.
5. Make it possible for hospital specialists in risk-management to examine medical procedures, identify relevant vulnerabilities, and form organizational strategies to prevent errors from occurring.

Gathering longitudinal data for risk management

Participating healthcare professionals anonymously supply information regarding all errors or near-errors through mediated debriefings. These debriefings will further strengthen the knowledge acquired by the course participants, while also providing insight on new cognitive scenarios.

Once a sufficient amount of debriefings have been recorded, hospital risk managers will be able to examine the accumulated data and determine the cognitive risks that accompany certain medical procedures. They will be able to identify the specific factors which render a procedure susceptible to certain errors and develop strategies in order to avoid these errors.

A common cognitive language

It should be noted that the use of common terminology is what facilitates the creation of procedures for comparison. Different cases and physicians must be examined using the same criteria and vernacular in order to create departmental behavioral patterns that at the same time make increased alertness and planning possible.

To that end, the program establishes a ‘cognitive language’ that enables participants to analyze varied events and compare them based on their cognitive characteristics. The thought process, itself, is divided into three phases: input, elaboration and output. And within each level, there are common errors that can be classified and defined.

The Input Phase

Deficiencies at the input phase include all those impairments concerned with the quantity and quality of data gathered by the individual in the process of solving a given problem or at early levels of appreciation regarding the nature of the problem. Examples include:

- Blurred and sweeping perception — Inability to control effort or to pay necessary attention in order to systematically gather the correct amount and quality of data for a given task, e.g. a doctor may gather information in a sweeping manner, leaving a lot of data behind.
- Unplanned, impulsive and unsystematic exploratory behavior — Characterized by a lack of sufficient control during the data gathering process that can lead to random choice of data and/or focusing on non-relevant data. As a result there is only partial suffusion of data into the cognitive system, e.g. a physician may focus on the most prominent patient or symptom and leave important data behind.

Elaboration phase

Deficiencies at the elaboration phase include factors that impede the individual's efficient transformation of the available data. In addition to impairments in data gathering, these deficiencies obstruct proper elaboration of whatever cues do exist.

- Inadequate perception of an actual problem’s existence or inability to properly define it — Discrepancy (or even, contradiction) between how a situation is perceived and information an individual has on how it should normally occur, e.g. a physician sees a problem but underestimates its severity.
- Inability to select relevant versus non-relevant cues when defining a problem — Having a deficient tendency and/or ability to differentiate between relevant and irrelevant data on the basis of problem or task, motivation or need, e.g. a physician prepares to treat an annoying problem instead of a quiet and dangerous problem.

Output phase

Deficiencies at the output phase include those that result in inadequate communication of final solutions. Even adequately gathered data and appropriate elaboration can result in inappropriate expression if difficulties exist for the individual at this phase. Specific difficulties include:

- Trial and error — Employing different problem-solving strategies but in a non-systematic manner that prevents proper or sound conclusions.
- Blocking — Hitting a mental obstruction, not knowing what to do next and not being able to continue a course of action.

Case studies in thinking errors

Participants work together to produce strategies intended to reduce the frequency of a phenomenon. Awareness of a particular problem itself should

already improve a physician’s functioning just by becoming alert to the phenomenon. Following are examples of failure identification:

- Scenario – A birth is not progressing. The doctor administers Pitocin to induce labor. He doesn’t stop to think that perhaps labor is not progressing because the woman’s pelvis is too small.
- Analysis — Indicates *unplanned, impulsive and unsystematic exploratory behavior in the input level.* The obvious, or most prominent, data (the fact that the birth is not progressing) penetrates the doctor’s cognitive system and blocks the input process from searching for more information (i.e. the size of the woman’s pelvis). The elaboration procedure rests solely on the obvious data and leads to a faulty decision, not because the procedure isn’t valid, but because it received only partial data.

- Scenario – A young pediatrician examines a mentally handicapped child who is incapable of speech. The child has an infection in a joint that is diagnosed as such and treated. In addition, the child had a constant tremor. The doctor assumes it is “simply the way the child is” and doesn’t think there is a problem. There is no further examination regarding the tremor. Two or three days later, one of the senior doctors inquires about the child’s tremor and the treating pediatrician has no explanation. The senior doctor examines the child and it is discovered the child had a mineral-deficiency. Administering a mineral supplement greatly eases the symptoms.”
- Analysis — The input stage was normal, since the tremor was identified. The difficulty was in the *elaboration level* due to the interpretation of it. The problem was an inadequacy *in the perception of the existence and definition of an actual problem* in the elaboration level. The physician knew that the patient was incapable of speech and therefore the child could not complain about the tremor or report on when it began. The doctor did not connect the inability to communicate to the clinical data, the

tremor, and did not initiate any further investigation of the problem. This resulted in a limited and superficial *elaboration* procedure.

A new approach — Mediated Debriefing Methodology -For the most part, the "system approach" is the generally accepted one. This method attempts to create procedures and organizational techniques that will reduce the magnitude of exposure to the human factor. The problem is that each procedure developed requires the existence of another procedure to guarantee the usage of the previous one. The dilemma is not a lack of procedures (though at times, they can and should be improved), but the difficulty in applying them.

The Mediated Debriefing Methodology approach emphasizes the importance of the individual at the center of an organization's decision-making. This methodology provides mental tools to physicians and other healthcare providers to upgrade the function of thought processes. In a manner of speaking, it improves the cognitive platform upon which a person's professional (and general) knowledge resides. It does not supplant the system approach, but complements it and helps to more wholly address error-reduction in the workplace.

Every person, even the most experienced and skilled thinkers, will have more vulnerable links in their thought processes. There will be a greater tendency toward failure in certain stages and under specific conditions. An absolutely brilliant person can still have a weak link which may cause error on a trivial item with critical consequences. For example, NASA experienced a $125 million loss when the Mars Climate Orbiter (part of the Surveyor '98 program) crashed into Mars because highly accomplished and intelligent engineers confused English and metric units in some of their measurements.

The primary objective is, therefore, understanding the thought processes and creating an awareness of these processes. This requires constant reinforcement in order for individuals to be "aware thinkers," people who first and foremost

identify the cognitive requirements needed in order to successfully fulfill any task. With the extensive expertise and assistance of our Israeli partners, Cognitive Process Corporation is striving to integrate the latest theories and practices of Structural Cognitive Modifiability into providing this type of training to doctors, pilots and those charged with our national security.

References

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