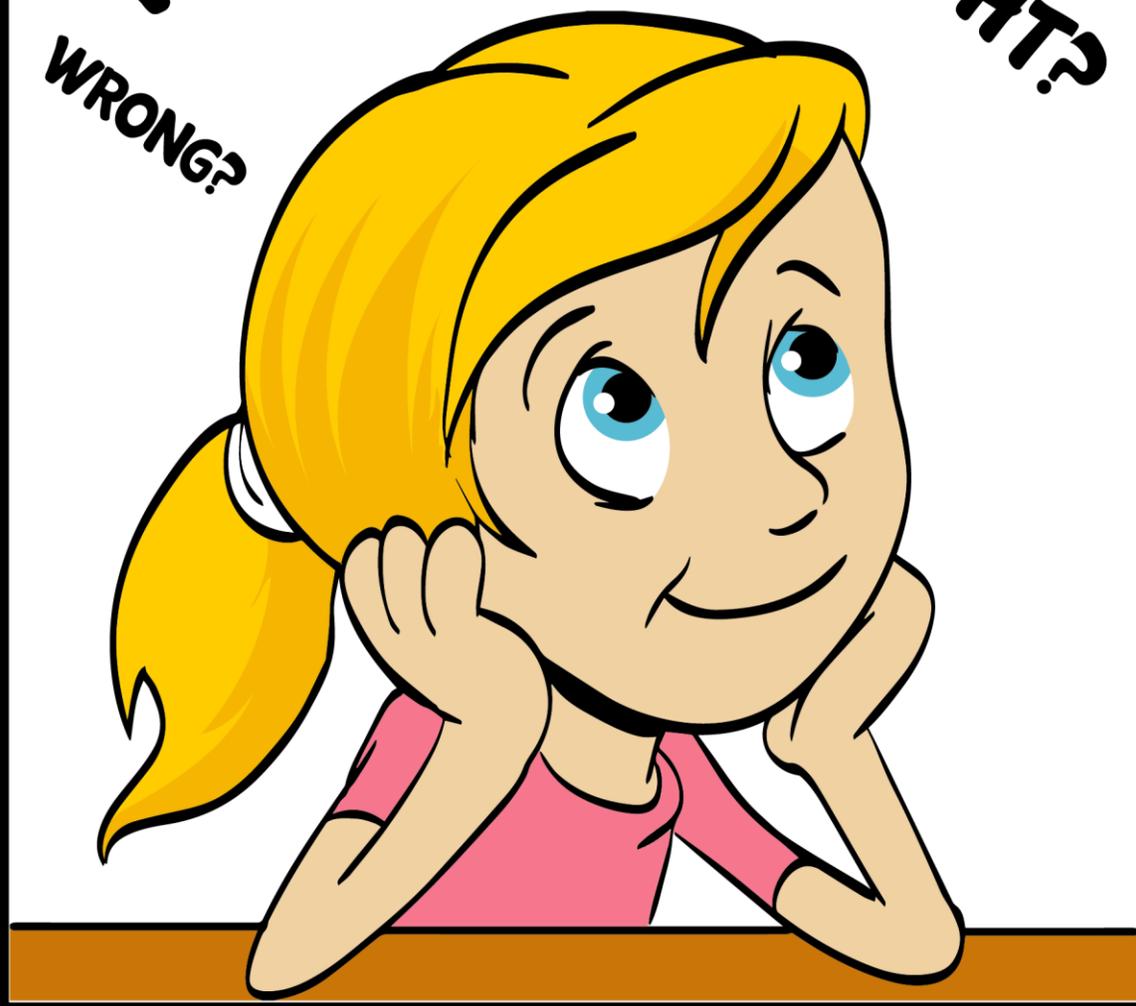


CRITICAL THINKING

Scientific Skepticism

WHY?
WHAT?
HELPFUL?
RIGHT?
WRONG?



CRITICAL THINKING: SCIENTIFIC SKEPTICISM

GOALS

1. Recognize the principles of critical thinking in scientific skepticism and the problem-solving process.
2. Determine the progress of critical thinking in the evolution of effective leadership.
3. Integrate critical thinking principles into leadership practices.
4. Question the need and understand the process for consultant involvement.
5. Increase awareness regarding the concept of due process and “at will” employment.

KEY WORDS FOR APPLICATION

1. Critical Thinking—Definition and Process, Recognition, Teaching
2. Scientific Skepticism
3. Problem-Solving Process
4. Effective Leadership Process
5. Reasoning and Logic
6. Origin of Thinking
7. Degree of Confidence
8. Impact of Existing Brain Patterns
9. Knowledge Management
10. Organizational Management/Skill Management
11. Abstract Critical Thinking
12. Concrete Thinking
13. Abstract Thinking
14. Dualistic Thinking
15. Conceptual Thinking
16. Holistic Thinking
17. Cognitive Biases
18. Due Process
19. “At-Will” Employment
20. Consultant/Consultation
21. Critical Thinking Walks
22. Heuristic Biases
23. Cognitive Biases

24. Confirmation Biases

25. Probability

DEFINITION OF CRITICAL THINKING

A simple analysis of the Critical Thinking process involves an analysis of facts to form a judgement. HOWEVER—THINKING IS NOT AS SIMPLE AS YOU THINK!

I thought Critical Thinking was a simple procedure until I studied Steven Novella, MD's scientific explanation of thinking. This academic neurologist from Yale School of Medicine gives us scientific information that complicates the very thought of thinking. As the president and cofounder of the New England Skeptical Society, a nonprofit educational organization dedicated to promoting the public understanding of science, his approach to the *Science of Critical Thinking* adds a dimension to better understanding the Critical Thinking process. His concepts are found throughout this document.

COGNITIVE BIASES & SKEPTICISM

Nobel prize-winning physicist Richard Feynman wrote it clearly in 1985, "The first principle of Critical Thinking is that you must not fool yourself --and you are the easiest person to fool." There is a Cognitive Bias related to a pattern of deviation in judgement whereby inferences about other people and situations may be drawn in an illogical fashion as an involuntary pattern of thinking that produces distortions of people, surroundings and situations. Therefore, we draw on our own subjective social reality from our perception. It is like wearing blinders when we just consider our own thinking!

The method of solving this thinking problem (Cognitive Bias) is call *skepticism*. Using the techniques of skepticism helps us to avoid pitfalls of thinking. Skepticism involves hesitation, questioning, doubting, and suspicious distrust. Learning to use skepticism and rational inquiry will help the nurse leader see information more clearly and hopefully arrive at the truth.

We often wonder why people change their minds. However, we often do not give people credit for understanding the need to change their minds due to the personal skepticism which causes the need for appropriate change of thought or direction. Politicians are often criticized for changes in direction and process— could they have experienced skepticism? Intelligent people know when to question themselves and hesitate to gain a better understanding of the direction to be pursued in their Critical Thinking endeavors.

The Critical Thinking process is, also, influenced about what our upbringing tells us is right or wrong, correct or incorrect, true or untrue—or some other relative dichotomy. It includes our acquired communication skills, reasonableness, logic, rational thinking, emotions, memories, and recognized patterns of behavior.

INSIDE AND OUTSIDE VIEW OF PROBLEMS/SITUATIONS

We all think in regard to the “inside” view versus the “outside” view. This means that when we approach problems/situations we use our “inside” view (past impressions and experience) to determine what we *think* will be the outcome(s). Then, when we actually are involved in the problem/situation we experience the “outside” view which usually much includes much more complications, situations, stumbling blocks, etc. than we thought possible. Therefore, the “outside” view piles on the things we did not expect, but are products of the reality of the world. Through our optimism of our “inside” view we proceed optimistically with life and through our ultimate “outside” view we often see the problems/situations as they really exist. Perhaps, through a combination of the “inside” view and an “outside” view our thinking could be more realistic and ultimately provide to us with realistic outcomes of our problem solving and critical thinking. An example would be like the purchase of a home with just the consideration of the monthly payments; however, we find that once purchased, the furnace stops working, the garage door does not go up and down, the water pipes need replacing, and you lost your job! See how the realities of the “inside” view differ from the “outside” view? To critically think through these differences allows more realistic decisions.

Now—let me share with you what leaders are usually not taught when it comes to doing the critical thinking aspect of their job. With a nod to Paul Harvey, here is THE REST OF THE STORY.

CRITICAL THINKING AND ITS EXPECTATION FOR SUCCESSFUL EMPLOYMENT

The goal of critical thinking over the past approximately thirty years is to arrive at conclusions that are as true as possible through reasoning and logic.

If we understand the concepts of critical thinking science, as stated in this document, we are more likely to be able to meet a stated requirement of numerous supervisors/superiors. True leaders have verbalized and expect of their staff to be able to think critically as one of the *most important requirements for successful employment*.

WE ARE OUR BRAINS

We are our brains because we use this organ to make decisions every day and for every purpose. This most complicated organ has the capacity to think, feel, infer, believe, calculate, remember, induce, and deduce. This wonderful organ does everything that we think of as THINKING.

In science, however, there is no thinking that brings about absolute certainty or evidence. In terms of theories and facts, there is no absolute right and wrong; there are only *degrees of confidence*. Even though we seek information, in reality it is always incomplete. To gain empirical (gained from observation or experience) knowledge, it is a JOURNEY OF PROCESS—NOT A DESTINATION. In other words, we learn as we go, as we experience and our brains take in information, reorganize the information, and cause us to make conclusions. It is the same idea as intuition—the leader with the most experience usually has the subconscious cues to be more intuitive than the new leader because you learn as you go.

To be knowledgeable about critical thinking is to realize that many of our basic beliefs are simply outcomes of no more than just brain-usage. Our beliefs are often flawed. We often construct what we see, hear, feel, and experience into a narrative that meets our *desired or already-established* assumption, instead of making an assumption and proving it by what we see, hear, and experience.

IMPACT ON THE BRAIN BY EMOTIONS, MEMORIES, PATTERNS

As feeling and sensitive human beings, everything that is taken into our senses is filtered through our ego (self) and our emotional needs. We want to feel good, feel wanted, and be right. However, the thinking that is the outcome of our ego and emotional needs is not usually truth-- it can be false. We might feel better by responding to *our needs*, but, doing so often produces fallacious thoughts and feelings. Therefore, making errors in critical thinking is inherent as we seek our own comfort, love, and self-esteem.

The memories we have in our brain can also be flawed. Memories are most often altered and fused together to make the picture that *we want to see*. We often hold that false belief through our delusions or false beliefs against all evidence. Our memories often lie to us, and—they are often highly unreliable.

Seeing brain patterns is a common happening for humans. Such as, if a person is crying, walking the floor, muttering angry words, we often put the behaviors together to represent what we think is wrong or being experienced by the person. There are many thousands of patterns we have learned in our lifetime that we think give us answers and reasons. We have learned these patterns through knowing our own behavior, what the behavior means to us, and how it is validated through experience with others. We then easily project onto the behavior of others as to what the observed behavior most likely represents to us. We often see patterns that are not there and pick up on cues that we *think* tell us what is wrong. Therefore, we believe we are thinking critically.

CRITICAL THINKING, RECOGNIZING BIASES, AND THE SEARCH FOR TRUTH

If you are sure that you know the absolute truth, the causes, or the reasons as you assess behaviors, then your critical thinking through a scientific approach is *OVER*. Be comfortable with uncertainty due to the many limitations of human intelligence. Be flexible and open to new ideas and information. Constantly update tentative conclusions as you receive new information.

Critical thinking is a rigorous process used to handle the complexities of the world. It is necessary content and presentation for every scientific process. The process is empowering! If you truly understand the ebb and flow of information, your critical thinking will forever be active. The search for truth never ends. Recall the saying—"The Truth Is Out There"---Well, it is out there somewhere in an ever-changing format called entropy and in accordance to our biases.

NOW—WHY IS IT IMPORTANT FOR YOU, AS THE LEADER, TO KNOW AND RECOGNIZE BIASES IN YOURSELF AND OTHERS? BECAUSE:

A LEADER IS HIRED TO LEAD—AND BECAUSE YOU ARE HIRED IT NEEDS TO BE (AND SHOULD BE) MORE THAN JUST AN ORGANIZATIONAL DECISION RELATED TO EMPLOYMENT LONGJEVITY, CONVENIENCE, OR ORGANIZATIONAL INVESTMENT. YOU ARE

SPECIAL—THAT MEANS YOU SHOULD KNOW “THINGS” THAT OTHERS MIGHT NOT KNOW OR UNDERSTAND. YOU ARE THE MENTOR, GUIDE, AND INTELLECTUAL DIRECTOR TOWARD POSITIVE OUTCOMES. KNOWING HOW TO RECOGNIZE, TEACH, ENCOURAGE, AND PROMOTE UNBIASED CONTRIBUTIONS & DECISIONS TO THE WORK SETTING WILL HELP TO ASSURE YOUR EFFECTIVE LEADERSHIP IN CREATIVE, ACCURATE, AND ULTIMATELY GOAL ATTAINMENT FOR THE ORGANIZATION.

LEARN THESE BIASES AND CALL THE EMPLOYEE’S ATTENTION TO THEM WHEN YOU HEAR OR SEE THEM USED BY EMPLOYEES. BE THEIR INTELLECTUAL GUIDE TO INCREASED CRITICAL, UNBIASED, AND LOGICAL THINKING!

IT IS A COMMON HUMAN TENDENCY TO BE BIASED AND NOT CONSIDER PROBABLE OUTCOMES. HOWEVER, THE RECOGNITION OF BIASES OR/AND CONSIDERATION OF STATISTICAL PROBABILITY AS A PART OF A THINKING PROCESS ADDS A NEEDED DIMENSION OF A THOROUGH REVIEW PROCESS. TO USE THESE SKILLS IN THE PROCESS OF CRITICAL THINKING JUST MIGHT BE THE SAVING FACTOR IN A LEGAL CHALLENGE.

HEURISTIC BIASES

We tend to want to use subtle and powerful “shortcuts” in our thinking and problem-solving called *heuristics* that, by definition, have a tendency to bias our thinking in these specific ways. It is a way to simplify a complex world! These shortcuts could cause false conclusions.

Our worse bias is a bias that we are not aware of possessing! A “heuristic” will point out an area of personal interest that, by itself, is causing a distorted pattern of thinking! This is so very common during the decision-making process! It is so interesting and necessary to recognize this behavior in yourself and others as you, as the leader, try to maintain a sense of logic to organizational decisions. The leader who is considered to be “controlling” and have a lack of professional flexibility often will use heuristics to make unnecessary quick decisions that fail to consider more thorough critical thinking patterns.

COGNITIVE BIASES

Cognitive Bias causes a person to take the path of least resistance or a mental shortcut in thinking rather than a formal logical way of thinking. It affects the way we argue and the way we think. They (Cognitive Biases) could be thought of as our *limiting* personal rules by which we make decisions and solve problems—it becomes our main area of interest. Our shortcut may be accurate much of the time—but, the final outcome *could* be dangerously flawed. There is an effort to find a simple meaning of things and the need for the world to make sense and have meaning. Remember—a cognitive bias is a first approximation of your perceived truth, but may not be strictly true; therefore, might not result ultimately in the best decision! It takes extra energy to step out of this limited thinking into more logical ways of thinking.

Some Examples of Cognitive Biases are--

“Anchoring” -- This causes you to focus on one prominent feature or person. One decision or judgement is often the single feature that will determine final decisions. This oversimplifies the decision-making process, but, provides the “anchoring” bias for making a decision. Interesting—the *first* number (1-2- etc.) we encounter tends to provide an anchor-bias to our later thinking on that subject, subconsciously, in a way that we are not aware. Being able to identify the anchoring bias in ourselves and others will increase our critical thinking awareness and abilities beyond just one prominence into a realm of more realistic alternative considerations. (This focus on one prominent feature of a potential employee, employee evaluation, and an employee termination process is often the reason for decisions of employee retention, promotion, hiring, and firing.)

“Availability” -- This causes a leader to assume that if he/she can think of an *example* regarding the one selected topic, then, that example must be representative and supportive of the prominent feature or person. That example (in their way of thinking) gives credence—so, the decision *must* be the right decision! (Notice how often during the hiring interview the potential employee is asked by someone to give an example(s) of what they have done to be success in some selected behavior(s).

“Exemplars” -- These are vivid and dramatic examples—more so than just “availability heuristics.” These examples have a much greater influence on your judgement and decisions—and even more than statistical information or a statistical rate. Sometimes just a story about a prominent feature or person is enough to cause great influence in your judgement and decisions. (Watch the behavior of a group to witness the “WOW” factor).

“Escalation of Commitment” -- “I have made up my mind” was the comment! This is when there is an over-influence of a previous commitment—even if commitments were a losing proposition. Remember—*entropy* always occurs and all things change and never/ever stay the same over time! Then, why shouldn’t a leader consider having an open mind to the changes that can cause the need for another decision? A closed mind never encourages creative or logical thinking. The most successful employee is one that has an open mind to new ideas and possible change.

“Representativeness” -- There is an assumption that all causes must resemble effects. Let us say that more education must equal more expertise, more hours worked must equal more skill, or age must equal maturity---etc. etc. Be careful—often the two do not support each other! If an *effect* is emotionally charged, it is assumed that the *cause* is emotionally charged, also.

“Effort” -- There is a greater value placed on items if they require greater effort to obtain. Examples: If it took you 3 years to meet the criteria for obtaining or affording a new device/machine, then that item is usually more valued. If you have worked 10 years in your job to become the leader, then that position (somehow) has greater value to you than if you had been hired as a 20-year old new leader in that same position.

CONFIRMATION BIASES:

This is one of the most pervasive biases in our thinking. It is one of the most important to understand because it has to do with our belief system. When we believe something, this bias has us accept information and events that we feel support our beliefs and interprets these beliefs favorably. We,

personally, confirm our beliefs or find errors to dismiss the belief. If we *believe* in the information or event, we accept it as “good.” If we do *not believe* in the information or event we look for potential flaws that enhance our non-belief so we can dismiss the belief. This causes a thorough investigation of our perceived data to determine what we believe *is a meaningful and reliable conclusion*.

Some Examples of Confirmation Biases are--

“Toupee Fallacy” -- This says that if we notice just one man wearing a toupee we are biased in our decision and our belief system says that we can reliably confirm the recognition of all men who wear a toupee. (But, how about all the men who wear a toupee that we do not notice?) When trying to do rational thinking—the unrecognized portion of toupee-wearing men is not part of the considered data—therefore, our thinking is biased.

“Confirmed Religion” -- This is a part of a personal religious belief system and is biased as to other religious belief systems.

“Congruence Bias” -- There is a tendency to test our own theories about things, but not test alternative theories. This bias leads people to hold firmly to their conclusions that have no statistical basis in reality. (Ideally, to test a theory there must be several hypotheses in addition to our own—perhaps different hypotheses from other members/employees.)

“Exposure Effect” -- This is a bias related to familiarity. The more familiar we are with things or people/person, the more favorably we tend to rate the things or people/person. This is why many organizations only advance employees from within the organization. Nepotism, also, causes an effect simply due to family and friend exposure.

“Choice Supportive Bias” -- There is a tendency to downgrade the second item/person on a list of considerations. For instance, when it comes down to a decision between two items and we select our first choice between the two, there is a tendency to increase our positive assessment of the first choice and downgrade our assessment of the second choice. Another interesting factor is that when the *first choice is not available, the second choice is often skipped over and the original third choice becomes the item/person of choice*. Is this because the second choice had already required the mental effort that downgraded that choice to a second choice?

“Fundamental Attribution Error” -- This is when there is a tendency to explain the actions of another person according to their personality traits while downplaying the situational factors. Conversely, we have a tendency to explain our *own personal behavior* with situational factors and downplay our personal personality traits. For example, if our employee forgets to lock the door we might claim he/she is forgetful (personality trait). However, if we forget to lock the door we might claim that we could not find the keys, not that we are forgetful.

“Optimism Bias” -- We love wishful thinking regardless of our logic and evidence. So, we seek magical and possibly implausible outcomes. In other words, we are positively optimistic. An example might be that some people seek treatment for ailments even though there is no proof that the treatment works.

“Barnum Effect Bias” -- In general, there is a tendency to interpret vague and general descriptions to be more highly accurate than specific statements. We actually look for examples to support what we are being told. Then, we take those examples and use that information as confirmation that these vague descriptions are accurate. An example is an astrological chart.

COMMON-SENSE PROBABILITY AND ITS USE IN PROBLEM SOLVING

The concept of probability is concerned with an abstract approach and ideas that identify--

1. A degree of risk that something will happen in a given situation (and)
2. A relationship existing between two characteristics (variables) and not if one characteristic causes another characteristic (and)
3. A probability of predicting an event

When we determine a risk, therefore, we are measuring the degree of probability of loss or unsuccessful outcome. In some organizations, this is called Risk Management. With the use of probability science, optimal outcomes are more likely. You can base the information on a full set of data or on a random sample.

Why should a leader be concerned with the concept of determining risk or probability? Because there is risk involved in everything we and others do. By identifying high risks that have a tendency to interrupt quality, we can prevent errors and maximize positive outcomes. Identification of risks and their resolutions can often be determined by recognition of common-sense probabilities, and not a statistical formula.

In the process of considering probabilities, we have two choices—

1. Leaders can be actively involved in trying to manipulate *organizational outcomes* (a terminal approach and outcome) OR
2. Leaders can be involved in trying to manipulate *employee behaviors* that will ultimately produce a positive organizational outcome (a process approach and outcome).

In each case, leaders anticipate the behavior of others or ongoing happenings through strategic thinking and confidence in observed behaviors and simple generalized statistics.

Analyzing controlled statistical data correctly is a mathematical skill and a most common approach in determining positive terminal and long-term outcomes. To do and collect statistical data, however, requires a statistician to carry out all aspects of the study. Relying on leadership intuition and learned outcomes by experiencing and watching employee behavior and trends is the most common (and easiest) approach in determining risks and, thereby, methods that help assure positive ongoing processes that produce positive organizational outcomes. One approach (terminal or process) is not exclusive of the other, it is best to intertwine them into an intrinsic pattern for success.

A Common-Sense Positive Approach to Understanding Employee Probability—

The probability of determining the future positive behavior of employees is determined by the knowledge that employees will *usually do what works best for them at any given point in time*. The reason can be personal or altruistic. This human behavior (good or bad) has a tendency to repeat itself. It is a universal concept that explains most human/animal behaviors.

There is a high probability that the behavior repeats itself because it has worked best or favorably for the employee at a given point in time. So—one might ascertain the probability that past personal work success will breed future work successes through similar behaviors or past personal work mistakes or

misbehavior will breed future work mistakes or misbehavior. Once negative work behavior has been recognized, there will be a better understanding of the behavior and, then, there can be a leadership plan and agreed-upon employee goals to hopefully improve the situation. Leadership guidance is necessary if past mistakes or misbehavior are to be redirected to be possible areas of employment success.

On a positive note and supportive of leadership success, there is something that will help to increase the probability of positive employee behavior. It is—*high positive probabilities of future successful goal attainment and expected positive behavior of employees is, most often, predetermined by a leader's past successful leadership strategies, such as, positive thinking, having leadership confidence, rewarding positive employee behaviors, and a respectful attitude about the positive worth and abilities of employees. Because, the leader also has a tendency to learn what works when directing his/her staff. If the leader recognizes and rewards positive employee behaviors that have previously produced positive employee behaviors and success in his/her work, there is a high probability that these same positive behaviors by employees will continue if supported by the leader—known as positive reinforcement. This encourages employees, usually, to do or continue to do the positive behaviors that work for them.*

Every employee has something that “works” in a positive way for them—the job of the leader (on a positive note rather than problem identification) is to determine what it is that positively “works” for that employee.

IDENTIFYING THE CORRECT/RIGHT/MAIN PROBLEM

This approach by leaders does not require numbers and calculations, just observation and common-sense when a problem and corrective action are identified.

Step I: Identify the correct/right/main problem.

This process is enhanced through non-biased critical thinking. First, make a list of the problems. Note that the one to be considered “correct/right/main” (if resolved) will usually resolve some or most of the remaining problems—known as “Dependent Events.” A Dependent Event often relies on or is caused by another event/problem. Therefore, there is a high probability that if the correct/right/main problem has been identified, a high number (or all) of other listed problems will be automatically resolved. The decision as to the identification of this problem can be a personal leadership decision or a group decision.

Conversely, the problems are known to be “Mutually Exclusive” if there is a high probability that the resolution of one problem has no effect on the other problem(s) identified.

Step II: Determine the most likely action choice(s) that will resolve the problem.

OTHER CONSIDERATIONS WHEN TEACHING EMPLOYEES THE CONCEPTS OF CRITICAL THINKING

When a leader confronts an employee about anything, recent research tells us that the leader can expect the confronted employee to hold onto his/her current beliefs even more strongly as an outcome of the confrontation. However, there is not usually an understanding by the confronted employee that

their perception of a situation changes as to time, experience, and recent happenings. Entropy has occurred, however. Nothing ever stays the same—not even our perspective of a situation or happening. Therefore, the confronted employee’s memory and feelings about a belief is most likely scientifically flawed and information relative to time, situation, and placed. Most often, an employee’s perspective meets the employee’s ego and self-esteem needs.

When an employee is confronted about negative behavior, *encourage and teach* the confronted employee to think critically about his/her own relevant positive (not negative) behaviors that would indicate the negative information might be wrong. Recognizing their own positive behaviors will, sometimes, help to decrease negative beliefs and behaviors. Then, the leader has an opportunity to know and confirm the positive aspects, rather than continues to place emphasis on negative aspects.

The request that encourages an employee to consider his/her positive behavior is for the leader to request of the confronted employee to “Tell me (preferably in writing) why or how I might be wrong in my perception of your negative behavior/perceived problem.” Personal evolution to an accurate and positive critical thinking approach (in all of us) is an ongoing and changing process that is *teachable*---but not easy--as we all have a tendency to be personally offended by what we perceive to be inaccurate or incomplete information regarding our perceived negative behavior.

To help alleviate some of these feelings, some leaders require a self-evaluation of the employee’s job description by the employee to identify in writing as many fulfilled positive job-description behaviors as a requirement *before* a leader’s job evaluation occurs. A final employee and leader review of the mutually completed job description evaluation is usually required to complete this assignment.

CRITICAL THINKING IN ORGANIZATIONAL MANAGEMENT

Knowledge Management (KM) became a recognized concept started in 1999. The concept involves capturing of knowledge in the organization and applies it in regard to developing and sharing information. The concept most frequently focuses on knowledge that promotes the mission and goals of the organization while making the most of knowledge gleaned through activities of critical thinking. This is often present during “Think Tanks” where employees share ideas that promote or are deterrents to goals.

Computer data also captures data. Most recently, the capture of medical data (knowledge) through electronic/computer devices in the health care field (instead of a written document) has been recognized as the most important factor in researching medical data through the sharing of patient information. This cumulative knowledge is now promoting decisions to increase life longevity and the effectiveness of certain drugs and medical regimes.

The Brain Injury Association in New York encourages critical thinking as it moves a person from concrete to abstract thinking --e.g. Why is Sally late? (concrete) to why are people often late (abstract). People with abstract critical thinking skills are able to use *transference of knowledge* to different situations. It removes a person from the here and now to a reflection on events and ideas. This teaching is helpful for nurses in the learning of general concepts related to nursing care in a variety of situations.

Dualistic thinking is when a person can understand two opposing concepts—e.g. good and evil, right and wrong. Facts and figures/numbers represent this level—not abstract concepts which require

transference of knowledge to different situations. This teaching is helpful for nurses as they recognize two or more optional nursing behaviors to determine the most accurate/best of the options presented.

Conceptual thinking is the ability to identify patterns or connections between seemingly unrelated objects. It enhances creativity. Administrators use this type of thinking to expand ideas and methods of administration. For example, have you ever looked at an object that is not intended to have a face and see a face in the object (Pareidolia) or see patterns or connections in unconnected data? (Apophenia). In 1976, NASA sent Viking I and Viking II to Mars. The images on Mars appeared to show a face in the rocks. These were patterns of unrelated objects.

Holistic thinking has to do with recognizing the interconnectedness of forms, systems, patterns, and objects. It is a putting of things together. It is the opposite of analyzing, which involves a breaking down of a larger system into its detail. This interconnectedness of symptoms often results in a diagnosis or a need for a specific nursing behavior.

Now—what does all of this mean to the facility/organization or nursing behavior and it's functioning? First, let us realize that the employees of an organization ARE—and they do MAKE UP-- the very facility/organization, itself. Second, the thinking patterns of the employees can either stagnate the thinking and progression of the facility/organization or enhance and move a facility/organization through difficult times and onto greater heights.

Mentally being aware of individual thinking patterns of employees allow an administrator to pick and determine who to select to different committees or to do specific jobs. Holistic thinkers are good at efforts to unite employees for a cause. Analytical and abstract thinking employees are good at determining the cause of problems and perhaps setting goals. Having employees with the ability to know how to capture knowledge and the ability to apply that knowledge for the promotion of goals would be good on a committee to assess attainment of goals.

The smart and critical thinking leader *picks and chooses* employees and committee members with specific talents to move an organization forward. Knowing the critical thinking talents of employees that well is a challenge for the administrator!

Knowing and using employees effectively because of their critical thinking abilities are some of the factors that separate the exceptional leader from just a leader that works on the fringes of administrative survival.

LEADERSHIP PROCESS AND THE RELATIONSHIP TO CRITICAL THINKING

The leadership process, as a scientific methodology, must recognize the professional realm of leadership. It is important to have a sound and recognized body of knowledge. No longer can a true leader be recognized as a person elevated to a leadership role as a convenience or just because of longevity. The professional leadership role is on the threshold of one of the most profound movements in the formation of leadership knowledge that will forever improve the contribution to this body of knowledge. No longer should any nurse/person be placed in a leadership role because they are “faithful” to their position. A nurse/person should have the intellectual skills to perform knowing the theory behind their decisions.

First-- Leadership process includes the following dynamics of critical thinking:

1. **Assessment:** What is the stated chief complaint/problem? Is the basis of understanding related to memory or an ego problem? Is the problem stated as current or past? Does it involve intuition? Has this problem ever existed before and to what extent? If so, how was this similar problem resolved last time successfully? (Read the document on intuition by this author.)
2. **Objective:** What do you, as the leader, see, hear, feel, or observe regarding the stated problem?
3. **Name of the Problem:** Label the problem as an outcome of the assessment and the objective content. Communication skills by the leader and the person identifying the problem are important.
4. **Goal(s):** State and write what will improve once the problem is resolved. Use the RUMBAS criteria of (R) Reasonable/Logical, (U) Understandable/Comprehensible, (M) Measurable/Quantifiable, (B) Behavioral/Observable, (A) Attainable/Achievable, and (S) Specific/To-the-Point in the writing of the goal(s).
5. **Plan:** State and write a plan or process to resolve the problem. To help assure success, use the RUMBAS criteria (again). When a plan is written it should go from simple behaviors to more advanced complex behaviors. It is a plan of progressive steps of process and human behavior.
6. **Implement the Plan:** Communicate expectations and related accountability to follow the plan.
7. **Evaluation:** Determine the extent of the implementation of the presented plan. Assess what needs to be changed to better meet the goal.

This process is dynamic, that is, it is ongoing and all aspects of critical thinking is going on constantly. Reenter any part of the process at any time in order to increase correctness and workability of the process as a part of Critical Thinking. Needed changes to any part of the leadership process could occur according to new information. Don't be afraid to change your mind as a leader—it is a product of your Critical Thinking!

Second-- Leadership process known as Evidence-Based Leadership:

Leaders are encouraged to make informed critical thinking decisions by learning from what other leaders have researched and have learned as published by Duke University.

1. Ask structured questions about the problem you, as a leader, have heard about.
2. Acquire information you receive about the problem by using structured open-ended questions that cannot be answered by a simple “yes” or “no” but require a verbal more extensive verbal response.
3. Appraise all information regarding the problem for validity and reliability. That is, does it measure correctly what it purports to measure (validity) and, if measured again and again, would yield the same results? (reliability)
4. Apply the best evidence you acquire to the critical thinking process.
5. Assess information after performing critical thinking skills by doing a self-audit and peer assessment.

CONSULT OR NOT TO CONSULT

Sometimes we want to be told what to do. Who better to tell us than a carefully determined consultant—we think!

A consultant by definition is a person who gives professional or expert advice. It is usually someone who is expected to know increased information about the subject/object we are exploring through our critical thinking filters.

There are some guidelines that are wise to consider before making the expensive move toward paying a person for their understanding and perspective of a situation. There have been painful observations by this observer where leaders and business groups have chosen a consultant to give advice. The advice is intended to be helpful; however, oft times a painful outcome says that perhaps the consultant was not adequately informed about the intricacies of the need or the situation. The lasting learned residual from these experiences was: “BE CAREFUL.” Before making a decision to use or not to use a consultant consider the following:

1. Is there someone in the community or area that can help with the need or can reassignments be made in the facility/organization so that the problem/question can be addressed by those who know the problem, situation, and have the ability to solve the problem/question?
2. Does this consultant *really* know more than the individuals experiencing the problem/question?
3. What evidence do you have that this person is the best consultant to help you solve a problem/question?
4. Is the money you will be spending worth the information you think you will get from the consultant?
5. Will the money that you will spend to acquire a consultant worth the strain on any part of the project needs or budget?
6. Does the consultant understand the dynamics of your specific problem, personally, or is the information you will be getting from a consultant’s experience from another happening in another geographical situation with different norms, cultures, and history?
7. How much money will it cost to transport the consultant to and from on-site situations?
8. Will this consultant speak positively on your behalf without deferring to political correctness or saying what will make the him/her (consultant) look good in the eyes of others rather than speaking truth?
9. Do you need a signed contract with specifics to protect the accuracy of the consultant’s contribution and the intended length and goals of the consultant relationship?
10. Do you need a contract that will allow immediate withdrawal from the consultant’s contract if it is needed for any reason?
11. Do you need to state in the consultant’s contract the need for professional or expert advice *only* and not to intervene in the project process?
12. To what extent do you expect the consultant to maintain privacy during and after consultation?

The concerns are endless. This observer has seen cases where consultants *who are not involved or had no direct information about a situation were hired to advise*. Long distance or lack of close physical and geographical location to the problem can lead to a lack of insensitivity on the part of a consultant's understanding of the problem/need. At the same time, being too close to a situation in any respect could hinder objectivity.

Other problems have been noted when the consultant is allowed to oversee and give direction to the total process they have recommended. Such allowance to conduct the oversight and direction of employees could lead to the possible lack of the administrative/leader carefully reviewing recommended consultant processes before they are implemented. The administrator/leader of the facility/organization gives away POWER and control of implementation of a process when a consultant is encouraged or allowed to give direction to the process rather than just recommending or advising.

This is not to say that consultants do not/cannot fill a needed advisory role. However, this document does warn regarding the careful consideration of consultant use, their limitations, and careful consideration of their absolute and controlled contributions which grants them unprecedented power. The critical thinking process relates to dualistic thinking—the possible good and not so good of the entire process. Conceptual thinking occurs when the administrator/leader is able to take the information provided by the consultant and make a useful connection related to the application of the information to the unique situations of the facility/organization.

THINKING DURING THE EMPLOYMENT AND JOB TERMINATION PROCESS

In the employment situation, due process is a legal principle that respects legal rights, fairness, and treatment that are owed to any person according to the law. This process involves legal proceedings that are carried out regularly and in accordance with established rules and principles. Therefore, it is very important that upon initial employment the employee know their due process rights during the employment phase and upon possible *employer job termination*. Recognizing the connective nature and explaining those due process rights of employment *and* job termination is a form of holistic thinking regarding legal due process.

The due process rule of law in the United States dictates that an employee automatically relinquishes “due process” *upon job termination* if the facility/organization is an “at will” employer. The “at will” contract means that an employer can terminate employment of an employee at any time for any reason, except an illegal one, or for *no reason* without incurring employer legal liability. Under this same “at will” employment understanding/contract, the employee (also) is free to leave a job at any time for any reason with no adverse consequences. It is this understanding that an employer should have with a new employee upon hiring. In other words, regardless whether it is *or is not* stated by the employer as a verbal understanding or placed in a written contract, the agreement or job contract is *presumed* to be an “at will” understanding/contract in the United States, ***except in Montana***.

In most Montana situations, it is accepted that if the employee *successfully completes a job probation period*, employment termination by an employer can be contested by the employee. This provides a good reason in the State of Montana for an employer to have a substantial job probation period in place, in writing, and known by the employee. The leader/employer needs to know the probationary period and consider carefully the possible retention of an employee past that stated time. The leader, also, has

a responsibility to do frequent feedback and job compliance evaluations related to the job description so as to help make sure that there is an acceptable degree of job description compliance during the probationary period as well as know when that time frame expires.

It behooves an employee to clarify the “at will” intentions before signing an employment contract.

This forward critical thinking process provides leaders with the stated need to be forthright in their intentions with employees. It requires employees to enter the employee scene with a clear understanding of the working relationship with a facility/organization.

LAST THOUGHTS

***IMPORTANT RECOMMENDATION—DOCUMENT, DOCUMENT, DOCUMENT TO SHOW A RESPONSE THAT IS SYSTEMATIC, THOROUGH, AND ADJUSTMENTS MADE ACCORDING TO OUTCOMES. DOCUMENT THAT YOU USED YOUR CRITICAL THINKING SKILLS TO REASSESS AND MAKE ADJUSTMENTS TO THE PROBLEM AS IS APPROPRIATE!!**

***FEW PEOPLE THINK MORE THAN TWO OR THREE TIMES A YEAR! I HAVE MADE AN INTERNATIONAL REPUTATION FOR MYSELF BY THINKING ONCE OR TWICE A WEEK. (GEORGE BERNARD SHAW)**

***CRITICAL THINKING RESULTS IN CHANGE BECAUSE NOTHING EVER STAYS THE SAME. ENTROPY IS THE CAUSE OF CONSTANT CHANGE.**

***CRITICAL THINKING HELPS TO PREVENT THE NEED FOR EXCESSIVE DEFENSE MECHANISMS/COPING MECHANISMS—COMPENSATION, PROJECTION, RATIONALIZATION, DENIAL OF REALITY, REACTION FORMATION, FLIGHT, AGGRESSION, RESIGNATION. THE MOST COMMONLY USED IS RATIONALIZATION. (SIGMUND FREUD) (Read the document on the essence of fear by this author.)**

***SHH—IT IS YOUR SECRET THAT YOU MIGHT BE THE ONLY ONE THAT TRULY KNOWS THE POWER OF “THINKING.” HAVE YOU EVER WONDERED WHY POLITICIANS (LEADERS) ARE CRITICIZED FOR CHANGING THEIR MINDS? COULD IT BE BECAUSE THEY HAVE GAINED THE POWER OF CRITICAL THINKING AND RECOGNIZE THE IMPACT OF ENTROPY?**

***SHH—DON’T TELL ANYONE ABOUT YOUR CRITICAL THINKING WALKS TO ENCOURAGE THINKING. FIND OUT HOW MUCH THEY HELP YOUR THINKING!**

CRITICAL THINKING QUESTIONS

1. Remind yourself of your contract with your employer. Is it an “At Will” contract or do you have a probationary period?
2. To what extent do you use your critical thinking skills to recognize and document your employment behavior regarding each of your job description expectations?
3. What are some of the considerations you, as a leader, would require to determine an appropriate consultant?
4. How are the dynamics of Critical Thinking and the Leadership Process similar to the nursing process?
5. What are the similarities or differences between holistic and conceptual thinking?
6. What would/could a leader do to encourage critical thinking and positive attitudes in employees?

7. What could a leader do to determine the major problem in the midst of many problems?
8. What are two examples of Cognitive Bias?

RECOMMENDED READING

Entropy by this author

Essence of Fear by this author

Hidden Power by this author

www.amazon.com/Critical-Thinking-Achieve-Positive

Gawande, A. : The Checklist manifesto, New York, 2009, Henry Holt and Co.

https://en.wikipedia.org/wiki/Knowledge_management

MULTIPLE CHOICE QUESTIONS

1. The goal for Critical Thinking is:
 - A. Determine a scientific definition for Critical Thinking
 - B. Arrive at answers that are true as possible through logic and reasoning
 - C. Use reasoning and logic to form only answers that make sense
 - D. Prove that science is not a part of Critical Thinking

2. In regard to Critical Thinking, health care administrators want to hire someone who can:
 - A. Teach a class on Critical Thinking
 - B. Think about solving problems for the first few hours of their shift
 - C. Think critically all of the time
 - D. Get the facts straight in an 8-hour shift

3. Much of everyone's basic beliefs and memories are:
 - A. Flawed
 - B. Accurate
 - C. Changeable
 - D. Reversible

4. Scientifically, no Critical Thinking is absolute. Therefore, we say that Critical Thinking is a:
- A. Easy—not hard
 - B. Fast—not slow
 - C. Certain—not questioned
 - D. Journey—not destination
5. Critical Thinking is most likely flawed because of:
- A. Not having enough experience, we ask the wrong questions
 - B. We do not try hard enough to get information
 - C. We depend on our memory to provide the right answer
 - D. Memory, patterns of thinking, ego, and self-esteem

ANSWERS:

- 1. B
- 2. C
- 3. A
- 4. D
- 5. D