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Scientific Thinking:
A Basis for Ethical Practice

Learner Objectives

Understand the nature of "scientific thinking" as the basis for ethically appropriate practice.

Be able to identify specific cognitive errors and biases that influence school psychologists' and teams' decisions.

Be able to cite strategies that minimize the impact of bias on the decision-making process
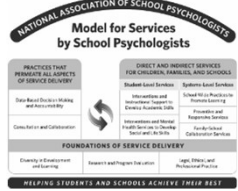
Foundations of School Psychological Service Delivery

Legal, Ethical, and Professional Practice
- ➤ Knowledge of the history and foundations of school psychology; multiple service models and methods; ethical, legal, and professional standards; and other factors related to professional identity and effective practice as school psychologists

Scientific Thinking:
The Basis for Ethical Practice

- "Ethical practice" is usually understood to mean knowledge and application of the "rules" of practice, so we study the rules and use them to make decisions.

- The "rules" **do** outline for us four principles that govern practice and decisions, so they're important to know:
  - Respecting the Dignity and Rights of All Persons (identify, address, and minimize bias)
  - Honesty and Integrity in Professional Relationships (collaborate as team member)
  - Responsibility to Schools, Families, Communities, the Profession, and Society (self-monitor and be a continuous learner)
  - Professional Competence and Responsibility (engage only in evidence-based practice)

We assume that answers/solutions lie in better ...
Knowledge

And yes, knowledge is an important component of scientific thinking:

Some problems have fact-based solutions (not opinion-based; not negotiable)

Requires ongoing professional development (reflecting evolving knowledge base)

Requires ability to determine adequacy of "evidence base" for a particular practice (peer-reviewed, methodologically sound, replicable studies)

Requires familiarity with "evidence-based practice" resources

Amenable to "training" or educational interventions

Rank order the following factors and practices in terms of their impact on student achievement:

A. Instruction individualized for students.

B. Extent/quality of parental home supervision.

C. Teachers' use of formative evaluation.

D. School financial support.

E. Retention.

F. Classroom strategies to decrease disruptive behavior.

G. Circumstances of students' home environments.

Sample Problems and Questions ...

- What are the chances that Angela's behavior indicates high risk for a suicide attempt?

- How can Mr. McConnell's classroom management skills be improved?

- Can the team use these progress monitoring scores to decide if the "Read 180" intervention is working?

- How should we respond to Darren's parent's demand for testing and an IEP?

- Why isn't our Student Support Team having much success in handling referrals?

- What method should we use to determine if James has a learning disability?

The Facts (Knowledge)

- We can use research on suicide risk to determine if Angela displays risk factors known to be associated with increased likelihood of suicide.

- There are numerous classroom management techniques that have a solid evidence base; we can recommend the use of *differential reinforcement* to Mr. McConnell.

- Research offers guidance about procedures for using progress monitoring data for making decisions; we know that reliability standards require using the slope of data points after 12 weeks of intervention.

- The law and regulations don't require us to provide an evaluation strictly on the basis of parent request; we can "say no" to Darren's parents.

- There are published models for "best practice" in setting up and running student problem-solving teams; we can use this information to establish weekly meetings that always start on time, last no more than 1 hour, use decision rules, have equitable participation from all members ... etc...

- There are several PSW methods for identifying SLD, and there is research on their accuracy (sensitivity and specificity); we can use this research to choose which method to use to determine if James has a learning disability.

Examining the Evidence Base for Aptitude-Based PSW Approach to Identifying Specific Learning Disabilities

- **Third Method: Alternative, research-based procedures (PSW)**
  Aptitude-Based **(uses measured "cognitive processes")**

  "Cognitive weakness in a sea of strengths"

  Based on research evidence for correlations between cognitive processes and different types of LD, can LD be identified with methods that assess discrepancies in cognitive processes?

  - **Concordance-Discordance Method** (C/DM; Hale, et. al)
    - Analyzes differences between scores on measures of "cognitive processes" (C-DM; Hale)
  - **Discrepancy/Consistency Method** (D/CM; Naglieri, et. al)
    - Analyzes differences between scores on achievement measures and measures of factors of Planning, Attention, Simultaneous, and Successive (PASS) factors, and between PASS factors
  - **Cross Battery Assessment** (XBA; Flanagan, et. al)
    - Based on Cattell-Horn-Cattell (CHC) theory of intelligence, using 7 cognitive clusters from Woodcock-Johnson III cognitive measures; analyzes standard (norm-referenced) scores on tests; SLD if a cognitive cluster deficiency exists within otherwise normal profile.

  Stuebing, K., Fletcher, J., Branum-Martin, L., & Francis, D. (2012). Evaluation of the technical adequacy of three methods for identifying specific learning disabilities based on cognitive discrepancies. *School Psychology Review, 41,* 1, 3-22.
  McGill, R., Styck, K., Palomares, R., & Hass, M. (2016). Critical issues in specific learning disability identification: What we need to know about the PSW model. *Learning Disability Quarterly, 39,* 3, 159-170.

The Evidence

- Models tend to work well in identifying "Not SLD" (true negatives), but poorly in identifying "SLD" (true positives), and they tend to over-identify as SLD cases that are not SLD (false positives).

Model	Sensitivity or Positive Predictive Value (Probability that case is true SLD, given that test results indicate SLD; True Positives)	Specificity or Negative Predictive Value (Probability that case is not SLD, given that test results indicate not SLD; True Negatives)
C/DM	24%	99%
D/CM	17%	99%
XBA	48-53% (depending on cognitive cluster used)	96-97% (depending on cognitive cluster used)

- There also is substantial concern about the efficiency and "treatment validity" of PSW results; that is, the obtained information does not inform intervention planning or treatment selection in any meaningful way (i.e., using PSW for this purpose does not result in intervention outcomes that are any better than what could have been obtained without PSW information).

Even if "knowledge" provides an answer ...

- Regarding knowledge relevant to the sample problems and questions listed, at least one "yes, but ..." comes to mind.

  - Yes, but prediction of behavior is impossible, and can I rely on my judgment as a clinician to draw a conclusion about Angela?
  - Yes, but Mr. McConnell may not follow through and use differential reinforcement.
  - Yes, but the teachers won't stand for a 12-week implementation period.
  - Yes, but the superintendent wants us to do evaluations if parents ask for them.
  - Yes, but we can't force team members to participate in discussions.
  - Yes, but the PSW model just makes sense because the law defines SLD in terms of psychological processes, and the other approaches are discouraged for various reasons (RtI, discrepancy model).

So ... deficiencies or inaccuracies of knowledge aren't the only challenge!

- "The evidence-based practice agenda is not just about adopting and implementing research-supported practices. It is about our way of *thinking scientifically* to reduce bias and errors in our practice" (Kratochwill, 2012, p. 38, emphasis added).

  - What is "scientific thinking?"
    - State and test a hypothesis, while controlling possible confounding factors, in an attempt to prove it wrong.
- We will examine the limitations of using what we know, see, and think to make decisions, and develop an understanding of how "scientific thinking" enables us to pay attention to and minimize these limitations, whether we act individually or as members of groups or teams.

- If you were traveling from Wichita KS to Fort Lauderdale FL, in what direction would you go?

- If you were traveling from Reno NV to San Diego CA, in what direction would you go?

Lilienfeld, S., & Lynn, S.J. (2015). Errors/Biases in Clinical Decision Making. In R. Cautin & S. Lilienfeld, The Encyclopedia of Clinical Psychology (1-9). NY: Wiley.

Heuristics

- Mental shortcuts ... Humans are "wired" to search for patterns in information, and do so reflexively (rapid insights; gut reactions)

- Adaptive: "Thinking: Fast and Slow" (Kahneman, 2011) and "Blink: The power of thinking without thinking" (Gladwell, 2006)

- But can be maladaptive, particularly in situations requiring consideration of complex and sometimes conflicting information (sound familiar?)

- Heuristics generally operate at very low level of awareness; some operate without any awareness, making them difficult or impossible to notice in oneself

- Limited success in learning to control/reduce the impact of heuristic thought

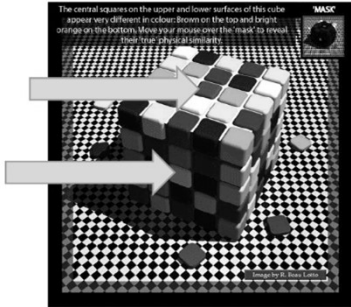The central squares on the upper and lower surfaces of this cube appear very different in colour: Brown on the top and bright orange on the bottom. Move your mouse over the 'mask' to reveal their true physical similarity.

Availability Heuristic

We think something is true or accurate based on how easily or readily it comes to mind (effect includes believing a statement to be true if it's been repeated often enough)

Examples of beliefs influenced by the availability heuristic:

- Mood disturbance, conflict with parents, and risky behavior are common among adolescents, and often signal a need for psychological intervention.
  - These phenomena, while more common in adolescence than in other life stages, are not common to most adolescents, and their manifestations tend to be mild to moderate in intensity (Arnett, 1999).

- Gun violence in schools is on the rise and is no longer uncommon.
  - Reporting of school shootings leads most people to believe that gun violence is increasing, although it has decreased in the past 20 years, claims fewer victims, and is still a very rare phenomenon in schools (Cornell, U VA Youth Violence Project, 2015).

Availability Heuristic ⇨ Illusory Correlation
(Lilienfeld, et. al, 2010)

Example: Widely held belief that children learn better if the method of instruction matches their "learning style."

	High Score	Low Score
Visual learner: Visual presentation	A ("hit")	B ("miss")
Visual learner: Auditory presentation	C ("miss")	D ("hit")

- A focus on "hits" (Table Cells A and D: *memorable co-occurrences*), while overlooking many more "misses" (Table Cells B and C: absence of memorable co-occurrences)

- "Modality preference" (among students) does not interact with teaching method; i.e., there is no difference in student outcomes when the teacher uses a method (e.g., visual presentation) designed to match the student's preference/style (e.g., visual learner) (Pashler, McDaniel, Rohrer & Bjork, 2009).

- **A and B are correlated, but A doesn't necessarily *cause* B.**
  - The possibilities (all of which must be considered) are:
    - A causes B (maybe …)
    - B causes A (no … because the cause must precede the effect)
    - C (often unknown or unmeasured) is associated with/causes both A and B (maybe …)
- Example:
  - After a teacher adopts the school psychologist's recommendation to change the layout of the classroom, the school psychologist observes in the classroom and notes that, indeed, the behavior of students has improved.
    - Hawthorne Effect: Changes in environment weren't the reason for improved worker performance; instead, it was the presence of the researchers – when they left, the improvements disappeared as well.
  - A child receives a series of vaccinations at around age 2. Not long after, the pediatrician diagnoses the child with autism.
- Further, the "post hoc, ergo propter hoc" error frequently occurs (A comes before B; therefore A caused B)
  - Because the diagnosis occurred soon *after* the vaccination, the vaccination must have caused the autism.

A mock trial defendant was accused of "driving under the influence" of alcohol, resulting in his running a stop sign and colliding with a garbage truck. His blood alcohol level at the time of the collision was (is) unknown.

Two separate "juries" were formed, and each was given a different description of the defendant's behavior at a party prior to the accident.

Jury A. On his way out the door, the defendant staggered against a serving table, knocking a bowl to the floor.

Jury B. On his way out the door, the defendant staggered against a serving table, knocking a bowl of guacamole dip to the floor and splattering guacamole on the spotless white carpet.

How did each jury rule on the question of the defendant's guilt?

- **True or False: There has been a recent, dramatic increase in the percentage of children with autism.**

- **Do more people in the U.S. die each year from cause "A" or cause "B"?**
  - **(A) Murder   (B) Diabetes**
  - **(A) Murder   (B) Suicide**
  - **(A) Car accidents   (B) Abdominal Cancer**

Representativeness Heuristic

- "Like goes with like" … when a person or situation looks or acts like (or reminds us of) an earlier situation or person

- A "prototype" mental scheme is activated and influences reactions

  - *Examples:*
    - Teacher brings a child with dirty, torn clothing and unkempt hair to your office, complaining that she rarely has needed materials when she arrives in the morning. (Fits your prototype for a "neglected child," so you respond accordingly, looking for further evidence of neglect)
      - Or maybe …?
    - New student support team member interrupts conversation when he arrives at a meeting, sits at the head of the table, and immediately begins talking to the student's parents. (Fits your prototype for a "difficult teacher," so you respond accordingly, ignoring his presence and discounting what he has to say)
      - Or maybe …?

Representativeness Heuristic ⇨ Base Rate Neglect

- What do you think the chances are (percent likelihood) that 2 people in this portion of the room (about 60 people) have the same birthday?
- Failure to take into consideration the naturally-occurring rate of a phenomenon – i.e., although it may strike us as noteworthy and possibly rare, it actually is a relatively common occurrence.
  - School psychologist struck by similarity of child to a prototype so makes a diagnosis on that basis, forgetting that the rate/prevalence of the prototype in the population is actually quite low.
    - Reports of an adolescent telling embellished stories, lying, setting fires, and taking others' belongings evoke "sociopath" or social maladjustment prototype
      - Except that the prevalence of "sociopathic youth" in the population is very low
  - In response to political pressure, a school decides to set up a screening program to identify young adolescents who may become violent shooters.
    - As with any screener, there will be true positives, true negatives, false positives, and false negatives; but, given the lack of evidence for reliable predictors, the incidence of false positives will be very high

      When hearing the sound of hoofbeats from a distance, think "horses," not "zebras. (The base rate occurrence of "horses" is much higher than that of zebras.)

Representativeness Heuristic ⇨ Regression Fallacy

- You've asked a high school homeroom teacher to complete a form rating a student's mood for several weeks (while you're counseling the student; on a scale from 1 to 10), so that you can keep track of changes. Here are the ratings:

Wk 1	Wk 2	Wk 3	Wk 4	Wk 5	Wk 6
2	5	3	4	5	6

- Has the student's mood improved over the course of your counseling intervention?

Affect Heuristic

- Tendency to evaluate the validity of a claim based on one's affective reaction to it.
  - Do you think it's morally acceptable to conduct a randomized controlled research trial on the effectiveness of harsh physical punishment (punching, kicking) for improving social skills of children with autism spectrum disorder?
    - Affect heuristic is adaptive/helpful

  - *But ...*
  - Clinical psychologists are fare more likely to affix the diagnostic label of "borderline personality disorder" to a demanding or argumentative client who elicits negative feelings on the part of the clinician (Sulzer, 2013).

  - Teacher referral is far more likely in cases where students are disruptive and difficult to manage – vs. students who are compliant and pleasant – although both may display the same pattern of academic underachievement.

- Is the population of Venezuela greater or less than 65 million?

- How many people do you think live in Venezuela?

Anchoring Heuristic

- Tendency for initial information to serve as an "anchoring (reference) point" from which subsequent judgments or decisions are derived
  - Price tags in stores or auto showrooms that show "Manufacturers Suggested Retail Price"

- Search for an answer begins with information that is immediately available; adjustments (if any) are made to that initial information, (and these adjustments are often inadequate).

- **Premature closure:** Clinicians develop fairly firm diagnostic impressions within the first minute or so of viewing a videotaped interview of a client.

Biases

- Systematic in nature; consistent direction of the error

  - Example: Always/often judges a student to have not made much progress (even when data are available), based on knowledge of the student's intellectual disability
  - Example: Disproportionality as an outcome of bias in referral (or labeling) of students of color

- Tendency to draw conclusions, or to make judgments/decisions based on some factor of which we are typically unaware

Confirmation Bias

- Tendency to test an explanation by looking for more instances of when it's true, than by seeking instances of when it's false.
  - Contrary to the scientific method, in which we do our best to prove that we are wrong!
- Seek (and preferentially notice) information that confirms initial impressions;
- Interpret ambiguous evidence consistent with initial impressions;
- Tend to distort, deny, dismiss, or forget evidence that contradicts initial impression.
- Over-analyze data or "cherry pick" information that is consistent with one's initial hypothesis.
- Test … Do you want your explanation to be true?

"Morton's Demon was a demon who sat at the gate of my sensory input apparatus and if and when he saw supportive evidence coming in, he opened the gate. But if he saw contradictory data coming in, he closed the gate. In this way, the demon allowed me to believe that I was right and to avoid any nasty contradictory data" (Morton, 2002).

Making Predictions?

- A friend is eating delicious Mexican food. You can trace the history of your friend's decision to eat this food all the way back to the time a few hours ago when she saw a tantalizing food commercial on TV.
- HOWEVER, knowing that your friend is currently watching a tantalizing food commercial on TV doesn't allow you to predict with certainty that, in a few hours, she will be eating delicious Mexican food.

Hindsight Bias

- "I knew it all along" … perceiving events as more predictable *after* they've occurred than before they occurred

  - Once the **outcome** of events is known, this outcome seems to have been inevitable, given an individual's history

  - Although it is almost always possible to look at something that is happening now, and trace a history of events that may have led or contributed to the occurrence of the phenomenon, it is never possible to *reverse* this procedure

    - Why? Because there are so many possibilities at each step along the way, each governed by probability and circumstances, that accurate prediction is impossible.
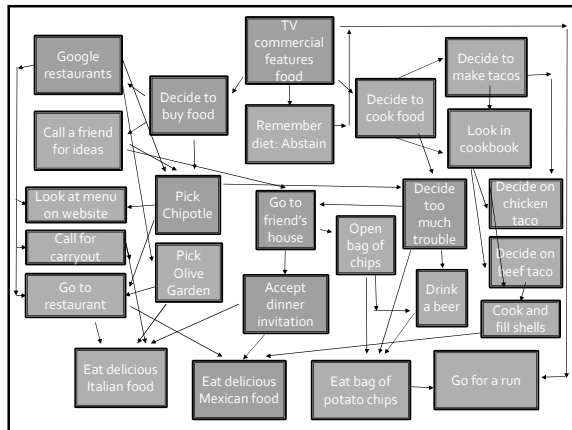
Google restaurants · TV commercial features food · Decide to make tacos · Decide to buy food · Decide to cook food · Look in cookbook · Call a friend for ideas · Remember diet: Abstain · Look at menu on website · Pick Chipotle · Go to friend's house · Decide too much trouble · Decide on chicken taco · Call for carryout · Open bag of chips · Decide on beef taco · Go to restaurant · Pick Olive Garden · Accept dinner invitation · Drink a beer · Cook and fill shells · Eat delicious Italian food · Eat delicious Mexican food · Eat bag of potato chips · Go for a run

Neglect of Missing Data

- **Neglect of Missing Data (Human mind's insensitivity to the *absence* of events)**
    - Tendency to overlook or discount missing data/information
    - Selective exposure to children and adolescents with problems leading to referral for psychological services leads to skewed estimate of the prevalence of these difficulties in the general population
    - ***"Clinician's Illusion"*** – Overestimating the chronicity of a condition (e.g., research has disproven the common clinical view of schizophrenia as a progressive, deteriorating condition)
    - **Example:** A school psychologist overestimates the probability that an adolescent who approaches her to talk about her depression will attempt suicide, because of the school psychologist's lack of contact with typical adolescents who experience depression and do NOT attempt suicide
    - **Example**: A school psychologist is studying the effectiveness of a classwide intervention using a pretest/posttest design. Although 62 students were enrolled in the intervention and took the pretest, 16 of them dropped out before the intervention ended

"Clinician, Heal Thyself"

- Too often, clinicians ignore or dismiss knowledge that has been well established through research. Why?
    (1) Belief that this situation/person is *unique*, so the findings of research don't apply in this case;
    (2) Belief in the legitimacy of research findings, but believes that human behavior is complex and can't be adequate explained by dry and esoteric statistical findings;
    (3) **Bias Blind Spot:** Belief that screening using research-based methods yields accurate results (and that screeners are very useful), but that, based on many years of experience and familiarity with students, s/he, in particular, can do a better job than the screening test in identifying problems.

- Zebras vs. Horses (again): Experts routinely over-identify "counter-examples," with too great a focus on "unique" aspects and too little focus on commonalities, resulting in poor judgment accuracy (Grove et. al, 2000)

- Clinicians' routine exposure to a sample of people experiencing more severe or persistent problems leads them to erroneously view most people as less resilient than they are, and most problems as requiring more intensive intervention than is actually needed (Cohen & Cohen, 1984)

- Clinicians are subject to the same biases (confirmation, representativeness, availability, etc.) as their colleagues and the population at large (Lilienfeld & Lynn, 2015).

"Fundamental Attribution Error"

- When *you* fail, it's because you're ... lazy, unmotivated, clumsy, unskilled, stupid, ignorant, rigid, stubborn ... (qualities of person)

- When *I* fail, it's because I didn't have the right materials, resources, information, etc. (circumstantial)

- Others may fall prey to bias, but I don't!

Overconfidence Bias

- **Fortunately, we can count on our clinical skills and judgment (or *can* we?)**

  - When supplied with the same case study information, and comparing "clinical method" (judgment and intuition applied to case data) to "mechanical method" (algorithm or "decision rule"), the latter is at least as (and sometimes more) accurate in making clinical predictions (psychiatric diagnoses, psychotherapy outcomes, suicidality, college and job performance, etc.) (Dawes, et. al, 1989)

  - Malcolm Gladwell's assertions in his book "Blink" notwithstanding, studies demonstrate that intuition and "hunches" lead to poor quality of decisions in professional practice, although intuition can be a useful signal that something is amiss, and that a solution, once derived, is ethically acceptable (Cottone & Claus, 2000)

  - Most clinicians think their judgment improves with experience (although it doesn't); advocate using both rule-based and clinical methods together (which works as long as both methods agree); or insist that the matter at hand is sufficiently unique as to represent an exception to the rule (which it usually isn't)... (Dawes, 1994; Grove, et. al, 2000; Smith & Dumont, 1997)

Errors of Social Influence

Many of the decisions in which school psychologists are involved (especially those of a high-stakes nature) are actually made by *teams*.

So, group "process" variables influence decisions, to a greater degree than the "rational" considerations that are assumed to be the strongest influence.

Do Teams Make Better Decisions?

- Broader knowledge and skills base *should* allow group to make better decisions than each member could have made on his/her own.

  - BUT ... group members tend to use discussions to communicate/advocate their own position, rather than to exchange information (of which other members may be unaware) to make a good decision.

    - Information supporting one's position is emphasized and repeated
    - With repetition, the position gains support (group moves toward consensus)
    - False consensus effect: Tendency to overestimate the extent to which others share our views
    - Once there is a predominant position, further information exchange becomes meaningless to members

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Information sharing in groups or teams

Three pieces of **favorable information about Candidate B** (B1, B2, and B3) were seen by **all of the group members**, but all four pieces of **favorable information about Candidate A** (A1, A2, A3, and A4) **were not given to everyone**. Because the group members did not share the information about Candidate A, Candidate B was *erroneously* seen as a better choice (Stasser & Titus, 1985).

Group Member	Information Favoring Candidate A	Information Favoring Candidate B
X	A1, A2	B1, B2, B3
Y	A1, A3	B1, B2, B3
Z	A1, A4	B1, B2, B3

Best solution (A) is hidden unless all available information is shared during discussion.

The shared information will be repeated during discussion, so it will be seen as more valid and will have a greater influence on decisions, because it is more "cognitively accessible," *AND*
Higher status members more likely to share new information and dominate discussion, even if their information is not more important or valid (Wittenbaum, 1998; Hinsz, 1990).
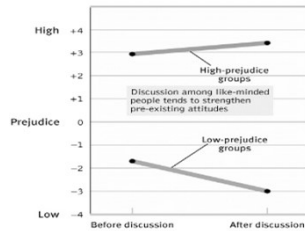
Group Polarization

High   +4
        +3   High-prejudice
        +2   groups
             Discussion among like-minded
        +1   people tends to strengthen
             pre-existing attitudes
Prejudice 0
        -1   Low-prejudice
                      groups
        -2
        -3
Low   -4
        Before discussion   After discussion

Discussions in groups tend to increase the strength of initial
position/opinions (i.e., the position taken by the group is more extreme
than the position of any one member of the group)!
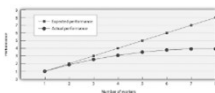
The sum of its parts …

Shouldn't "more people" = "better solutions"?

In a group, the cumulative effort/contribution of all members should equal or exceed
the total value that could have been achieved if each member had worked on his or
her own.

The Ringelmann Effect …
Although more men pulled harder on a rope
than fewer men did, there was a substantial
process loss in comparison with what would
have been expected on the basis of their
individual performances.

True or False?

- "Brainstorming" new ideas in groups works
  better than asking people to generate ideas
  on their own.

The 5 Whys
(an alternative to brainstorming in problem-solving)

- Skip the lengthy descriptions; focus on ways to reduce/avoid the problem's recurrence …
- **5 Whys** method (Quick and dirty FBA)
  - To generate "counter-measures," **not solutions**; i.e., to prevent the problem from occurring again.
  - Move quickly from one "why" to the next!
    - What is happening (something that is problematic; something observable)?
    - Why #1 (**what is happening** that causes, explains, or is directly related to this thing that is happening?)
    - Why #2? (**what is happening** that causes, explains, or is related to this?)
    - Why #3? (**what is happening** that causes, explains, or is related to this?)
    - Why #4? (**what is happening** that causes, explains, or is related to this?)
- After 4th "why," the team should arrive at an event or circumstance that can be changed through a "counter-measure."

#1 … Describe what is happening that is problematic.	*Charlie is receiving failing grades in math.*
Things that are happening that may explain the event cited in the preceding statement.	Why? • He isn't completing homework.
Must be observable events, not "child characteristics"	Why? • He doesn't take his books or class materials home.
4 "Whys" after problem statement.	Why? • No one checks to be sure he has them on his way out the door.
Identify a counter-measure for the final "Why?"	Why? • The teacher can't always (or doesn't want to) remind him.

#1 … Describe what is happening that is problematic.	*I don't have the ETR Part I paperwork that I need for my evaluation case.*
Things that are happening that may explain the event cited in the preceding statement.	Why? • Teachers don't complete and return the form to me as I've asked them to.
Must be observable events, not "child characteristics"	Why? • They think it takes too much time.
4 "Whys" after problem statement.	Why? • It's confusing and difficult for them to know what to write.
Identify a counter-measure for the final "Why?"	Why? • They don't have clear instructions and samples they can use.

Groupthink

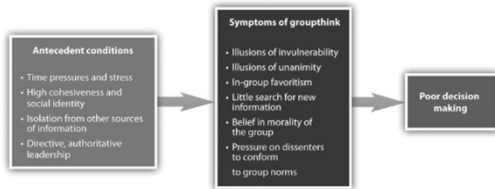**Preoccupation with group unanimity that impairs critical thinking**

Antecedent conditions	Symptoms of groupthink	
• Time pressures and stress • High cohesiveness and social identity • Isolation from other sources of information • Directive, authoritative leadership	• Illusions of invulnerability • Illusions of unanimity • In-group favoritism • Little search for new information • Belief in morality of the group • Pressure on dissenters to conform to group norms	Poor decision making

Sunk Cost

- Decision is made based on how much effort already has been exerted, or how many resources already have been invested

- "Ikea" effect ... valuing an item of furniture more because you had to assemble it

- Leads to initial, prolonged, or repeated use of a technique or technology because a person(or group) has been using it, working with it, or paying for it (especially if it was originally that person's/group's idea).

What Helps in Team Decision-Making?

- Modify the size of the team depending on the purpose of the meeting (e.g., broad input to understand student's difficulty, vs. communication with parents to elicit their cooperation); also consider possible impact of seating, meeting length, etc. on success of meeting
- Leader refrains from giving opinions, especially initially, and concentrates instead on encouraging input
- "Nominal technique" (write ideas individually before the meeting)
- "Round robin" (Sequence turn-taking among speakers)
- Delay decision-making

What Helps in Team Decision-Making?

- Actively promote minority dissent, rather than striving for premature consensus

- Appoint a "devil's advocate" to raise questions about group decisions

- "Consider the opposite/an alternative explanation"

- Adopt an "outsider's perspective" – i.e., estimate how another, "naïve" person would view the situation

- Periodically discuss how the team is functioning and make plans for improvement

References & Further Reading

- Burns, M., Jacob, S., & Wagner, A. (2008). Ethical and legal issues associated with using response-to-intervention to assess learning disabilities. *Journal of School Psychology, 46,* 263-279.

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