



Avoiding Errors in Instructional Decision Making

Jane Sturgell, S. Psy. S., NCSP
March 2018



Avoiding Errors in Decision Making



- Adapted from the work of Kathy McNamara (Cleveland State University)
- More than 90% of interventions show a positive educational effect (social psych phenomenon – mere presence has impact)
- 97.3% of student problems in performance is attributed to student characteristics & family / home characteristics (Jim Ysseldyke)
- Common errors in decision making
 1. Skill or knowledge-based errors
 2. Rule-based errors
 3. Social-interaction errors (teams)



Avoiding Errors in Decision Making



- Confirmation bias = seek evidence consistent with our beliefs; deny, distort or dismiss contrary evidence
 - Referral automatically activates confirmation bias: someone thought there was a problem so you find a problem
 - More efficient and scientific to look for evidence to refute it
- Hindsight bias = “I knew it all along” ... perceiving events as more predictable after they’ve occurred than before they occurred
- Over-reliance on heuristics = mental shortcuts or “rules of thumb”
 - Most likely to use when have complicated data

+ Avoiding Errors in Decision Making



- Watch out for:
 - “Group Think” (preoccupation with group unanimity that impairs critical thinking)
 - The cure? Appoint a devil’s advocate to raise questions about group decisions! Encourage minority dissent
 - Explaining away refuting evidence
 - Ignoring research



Top 10 Prescriptions for Avoiding Errors in Decision Making



1. Actively seek out disconfirming evidence (to prove your hunch / hypothesis wrong)
2. Don't become overly attached to your hypothesis ("know" all theories; love some, wed none")
3. Consider rival hypotheses (accept hypothesis only if it beats at least one other rival hypothesis)
4. Don't cherry pick (examine ALL evidence)
5. Put your intuition to the test (hunches may be a good starting point, but they don't work well for decision making)



Top 10 Prescriptions for Avoiding Errors in Decision Making



6. Be skeptical of clinical judgment and long-standing clinical wisdom

7. Be aware of the existence of blind spots (run ideas past others to detect weaknesses or biases)

8. Encourage dissent (reinforce others who offer alternative views)

9. Quantify, quantify, quantify (assess “impressions” numerically, measure outcomes)

10. Maintain a self-critical attitude (willingness to acknowledge that one might be mistaken) and be willing to change beliefs



Considerations for Individual Student Analysis: To Change or Not To Change...



- #1: How many data points? 8-12 minimum to make reliable decisions about student progress (new research suggest it may be 10+)
- #2: Trend Estimations? Observed versus expected (or actual versus anticipated)
 - In other words... is the gap: closing (positive response), staying the same (questionable response), getting larger / widening (poor response)
- #3: Visually analyze graph!
 - Are there any extreme scores (low or high) that are impacting the trend line?
 - If so, are those scores valid?



Considerations for Individual Student Analysis: To Change or Not To Change...



- **If there are 8-12 data points, with no extreme values and gap is widening (poor response) or staying the same (questionable response)... Consider:**
 - Fidelity of intervention implementation (e.g., implemented as intended, following intervention scripts)
 - Student attendance (e.g., missing intervention? Lessons?)
 - Frequency & intensity of implementation and pacing (e.g., anticipated lesson 100, but on lesson 50)
 - How is the child doing on mastery tests?
 - How is the child doing compared to other children in the same intervention group? (e.g., is this the only child not responding? Are all children in group responding in a similar way?)



Considerations for Individual Student Analysis: To Change or Not To Change...



- If intervention was implemented with fidelity and appropriate frequency, intensity and duration, with minimal absences / interruptions, the student is doing well on Mastery tests but under-performing compared to other children in the intervention group, consider:
 - Is this a good instructional match?
 - If yes, is a change of intervention warranted (alterable variable chart)
 - If no, collect more data to identify appropriate instructional match