

How Adults Learn

Brett Dillon

RESNET Conference 2011, Orlando FL



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

Quality

Passion

Knowledge



© 2010 IBS Advisors. All Rights Reserved.

Environment

Cognitive Load

Stress

Storytelling



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

Environment

- Daylighting
- Snacks
- Beverages
- Comfort
- Neighbors
- Un-natural lighting
- Noise
- Trainer's attitude
- Student motivation
- Room colors
- Room size
- Distractions



IBS ADVISORS
INTEGRATED BUILDING SCIENCE





IBS ADVISORS
INTEGRATED BUILDING SCIENCE



© 2010 IBS Advisors. All Rights Reserved.

Wednesday, March 2, 2011

Cognitive Load

1. Use diagrams to optimize performance on tasks requiring spatial manipulations
2. Use diagrams to promote learning of rules involving spatial relationships
3. Use diagrams to help learners build deeper understanding
4. Explain diagrams with words presented through audio narration
5. Use cues and signals to focus attention to important visual & textual content
6. Integrate explanatory text close to related visuals on pages & screens to avoid split attention



IBS ADVISORS
INTEGRATED BUILDING SCIENCE



Cognitive Load

7. Pare content down to essentials
8. Eliminate extraneous visuals, text & audio
9. Eliminate redundancy in content delivery modes
10. Provide performance aids as external memory supplements
11. Design performance aids by applying working memory management techniques
12. Teach system components before teaching the full process
13. Teach supporting knowledge separate from teaching procedure steps



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

Cognitive Load

14. Consider risk of cognitive overload before designing whole task environments
15. Give learners control over pacing & manage working memory when pacing must be instructionally controlled
16. Replace some practice problems with worked examples
17. Use completion examples to promote learning processing
18. Transition from worked examples to problem assignments with backward fading
19. Display worked examples & completion problems in ways that minimize extraneous working memory



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

Cognitive Load

20. Use diverse worked examples to foster transfer of learning
21. Help learners exploit examples through self-explanations
22. Help learners automate new knowledge & skills
23. Promote mental rehearsal of complex content after mental models are formed
24. Write high coherent texts for low knowledge readers
25. Avoid interrupting reading of low skilled readers
26. Eliminate redundant content for more experienced learners
27. Transition from worked examples to problem assignments as learners gain expertise
28. Use directive rather than guided discovery learning designs for novice learners



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

Stress Management

- Brain chemistry
 - Amygdala
 - Acute vs Chronic
 - Contagious emotions



IBS ADVISORS
INTEGRATED BUILDING SCIENCE



Stress Defined

- Stress is a process by which certain work demands evoke an appraisal process in which **perceived** demands exceed resources and result in undesirable physiological, emotional, cognitive and social changes.



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

Stress

- Perception
- Competent judgment
 - cue sampling
 - vigilance
 - WM capacity
 - closure
 - task



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

Stress

- Related to information
 - unclear
 - faulty
 - incomplete



IBS ADVISORS
INTEGRATED BUILDING SCIENCE



Stress

- Narrows focus
 - discards non-essentials
 - blinds
- Intuition vs Rational



IBS ADVISORS
INTEGRATED BUILDING SCIENCE



Storytelling

- Incongruity + Absurdity
- Slurring the point
- Dropping a studied remark
- the Pause



IBS ADVISORS
INTEGRATED BUILDING SCIENCE





IBS ADVISORS
INTEGRATED BUILDING SCIENCE



© 2010 IBS Advisors. All Rights Reserved.

Wednesday, March 2, 2011



IBS ADVISORS
INTEGRATED BUILDING SCIENCE



© 2010 IBS Advisors. All Rights Reserved.

Wednesday, March 2, 2011

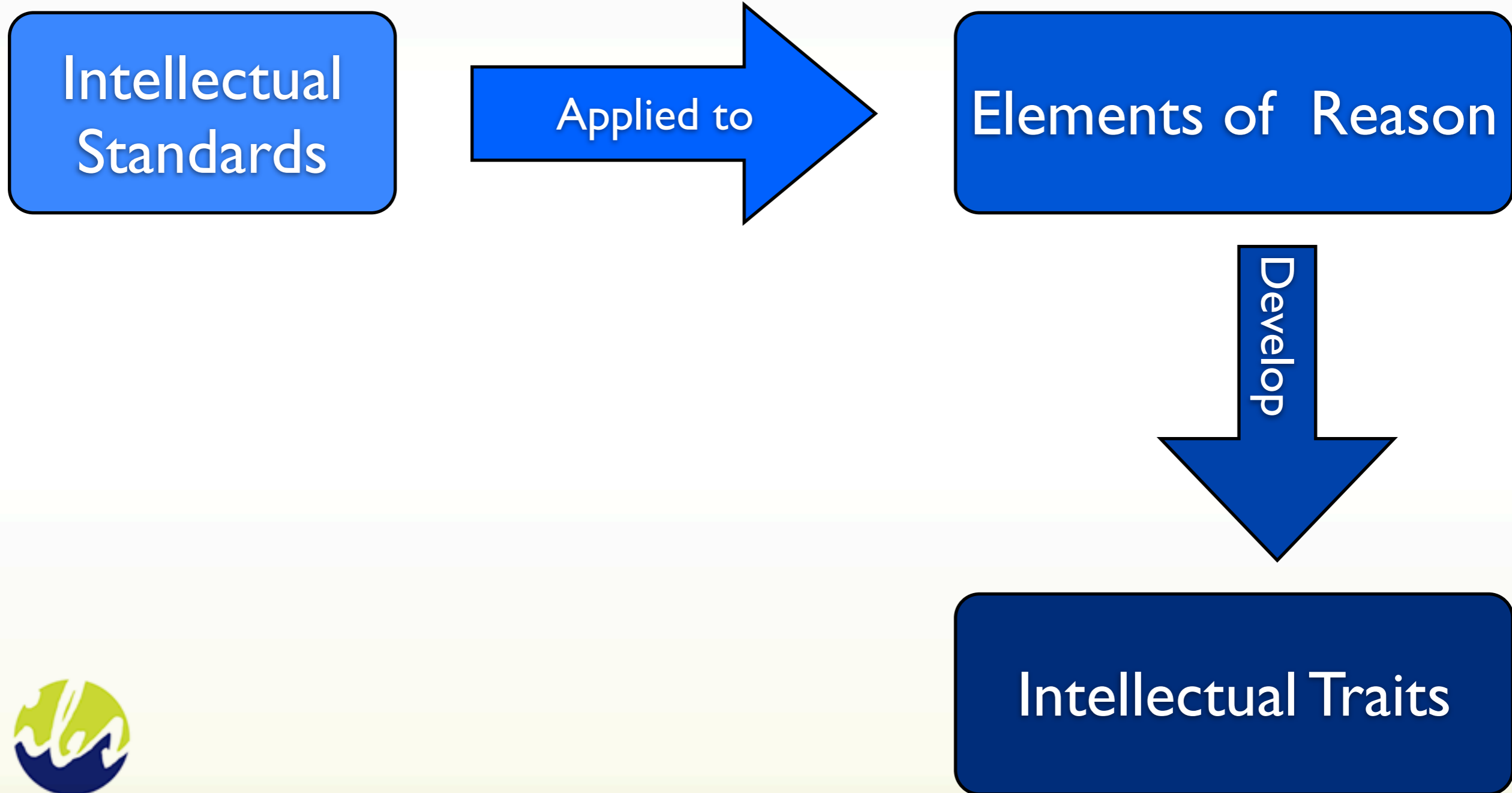


IBS ADVISORS
INTEGRATED BUILDING SCIENCE



© 2010 IBS Advisors. All Rights Reserved.

Teach Them to Think



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

Brett Dillon
www.ibsadvisorsllc.com
@thebrettdillon
@ibsadvisorsllc
info@ibsadvisorsllc.com
210-448-1106



IBS ADVISORS
INTEGRATED BUILDING SCIENCE

