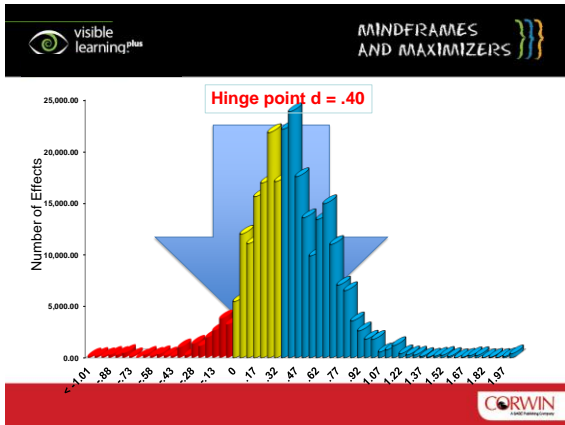


Visible Learning The Student perspective

2009 800 meta-analyses

2016 1200+ meta-analyses

1/4b students
From the student, home, school, curriculum,
teacher, strategies ...



95%+ of
everything we do
has a positive
influence on
achievement

Not repeating classes	-.17
Not student control over learning	.01
Not learning styles	-.03
Not lengthening school day or school year	-.07
Not single sex schools	-.08
Not changing school calendars or timetables	-.09
Not charter schools	-.09
Not ability grouping	-.12
Not mentoring	-.12
Not out-of-school curricula experiences	-.12
Not web based learning	-.18
Not class size	-.21
Not accountability models	-.22
Not problem based learning	-.22
Not individualised instruction	-.22
Not finances	-.23

Rank	Student	Effect-size
151	Divorced or remarriage	.20
157	Personality relations	.18
167	Adopted children	.16
173	Diet	.12
174	Gender (m ⁺)	.12
176	D ⁺ ...s in the class	.11
181	Sleep	.07
189	Parental employment	.03
191	Sleep	.01
196	Diabetes	-.17
200	Not Labeling students	-.61

Not the attributes of students $d = .08$

Rank	Structure	Effect-size
140	Summer school	.27
141	Finances	
142	Religious Schools	
147	Class size	.21
159	Within class group	.18
171	Ability	.12
177		.11
179	Years/timetables	.09
180	DeTracking	.09
	Single sex schools	.08
	Charter Schools	.07
	Diversity of students	.05
187	Multi-grade/age classes	.04
192	Open vs. Traditional	.01
194	Welfare Policies	-.12
195	Retention (hold back a year)	-.13

Not the structure of schools or classes d=.10

Rank	Teacher	Effect-size
146	Teacher verbal ability	.22
156	Co-/ Team teaching	.19
170	Mentoring	.15
175	Instruction	.12
178	Subject matter knowledge	.09
189	Volunteers/Teacher Aides	.03

Not who the teachers are d=.13

Rank	Technology	Effect-size
79	Intelligent tutoring systems	.43
117	CAI in mathematics	.30
138	CAI in Science	.23
148	Small groups	.21
158	CAI in distance education	.18
163	Web based learning	.18

Not the technology (yet) d=.26

visible learning^{plus}
MINDFRAMES AND MAXIMIZERS

When teachers SEE learning through the eyes of the student



& when students SEE themselves as their own teachers



visible learning^{plus}
MINDFRAMES AND MAXIMIZERS

Know thy Impact d=.93

Rank	Influence	Effect-size
6	Response to intervention	1.07
8	Providing formative evaluation	.90
11	Classroom discussion	.82

visible learning^{plus}
MINDFRAMES AND MAXIMIZERS

Teachers' Collective Impact d=.88

Rank	Influence	Effect-size
1	Collective teacher efficacy	1.57
9	Observing the impact of teachers on students (video, observation)	.88
33	Direct Instruction	.59





visible learning^{plus} MINDFRAMES AND MAXIMIZERS

All having high expectations d=.85

2	Student expectations	1.44
4	Piagetian programs	1.28
24	Prior achievement	.65
35	Mastery learning	.58
49	Scaffolding based on prior knowledge	.53
78	Teacher Expectations	.43



visible learning^{plus} MINDFRAMES AND MAXIMIZERS

Emphasizing Success Criteria d=.77

7	Teacher credibility	.90
10	Cognitive Task Analysis	.87
13	Teacher clarity	.75
38	Worked examples	.57



visible learning^{plus} MINDFRAMES AND MAXIMIZERS

Feedback, Welcoming errors, & Trust d=.72

14	Feedback	.75
16	Teacher-Student relationships	.72
20	Classroom behavioral	.68



visible learning^{plus} MINDFRAMES AND MAXIMIZERS

A focus on learning d=.62

17	Spaced vs. Mass Practice	.71
22	Repeated Reading programs	.67
64	Concentration/Persistence/Engagement	.48



Not the attributes of students	.08
Not the structure of classes or schools	.10
Not who the teachers are	.13
Not the technology	.26
Not changing curricula	.20
Not more assessment	.25
Not different types of schools	.10

visible learning^{plus} MINDFRAMES AND MAXIMIZERS

Teacher and school leader expertise

1. Teachers, working together, as evaluators of their impact	.93
2. The power of moving towards explicit success criteria	.77
3. Errors and trust are welcomed as opportunities to learn	.72
4. Maximize feedback about their impact	.72
5. The portion of surface to deep in lessons	.71
6. The Goldilocks principles of challenge, & deliberate practice to attain these challenges	.60



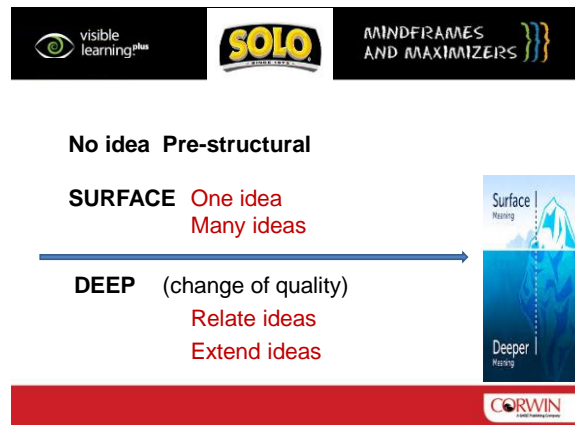
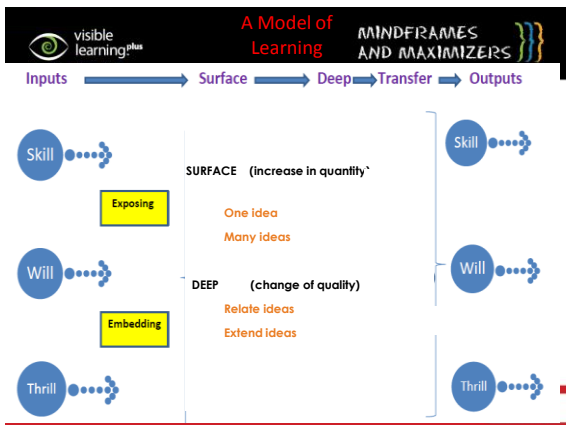
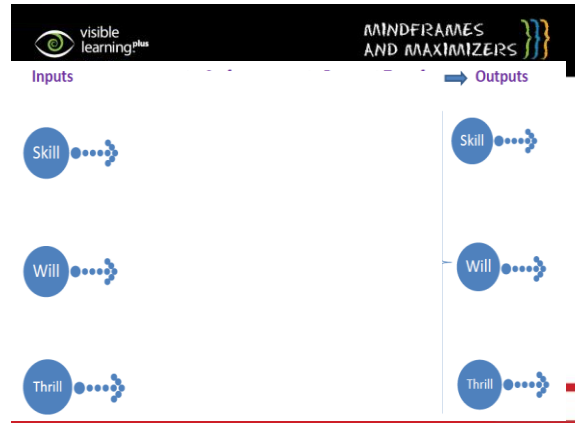


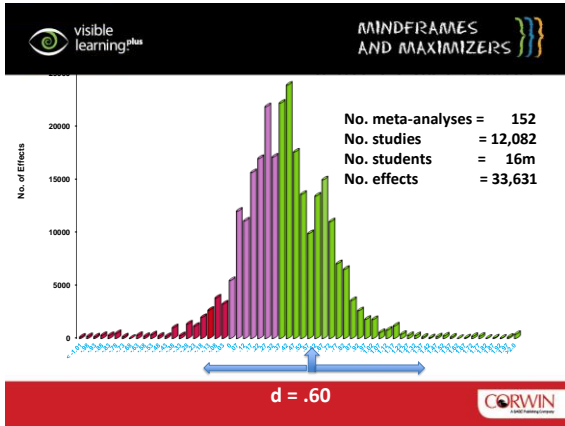
The Student Perspective

How we think

visible learning^{plus} MINDFRAMES AND MAXIMIZERS

Brain Gym	Mindfulness
Collaborative problem solving	Mnemonics
Comprehension Monitoring	Monitoring
Concept Mapping	Note taking
Critical thinking techniques	Planning
Discussion groups	Practice / Rehearsal
Distributed Practice	Practice Testing
Elaborative Interrogation	Re-reading
Environmental structuring	Retrieval cueing
Error monitoring	Selecting Main Idea
Examination skills	Self-monitoring
Help-seeking	Self-questioning
Highlighting/Underlining	Self-regulation
Interleaved Practice	Sleep
Keeping records & monitoring	Summarization
Learning Styles	Think Aloud





MINDFRAMES AND MAXIMIZERS

Inputs	No. metas	No. effects	ES
Skill → Prior Achievement	9	8014	.77

MINDFRAMES AND MAXIMIZERS

Inputs	No. metas	No. effects	ES
Skill → The WILL			
Self-efficacy	11	2678	.63
Task Value	1		.46
Will → Reducing anxiety	8	1305	.45
Attitude to content	4	782	.35
Learning styles	5	943	.13
Growth vs. Fixed thinking	1	113	.19

MINDFRAMES AND MAXIMIZERS

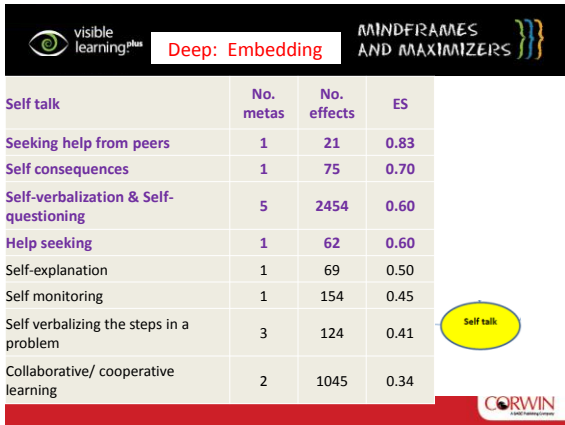
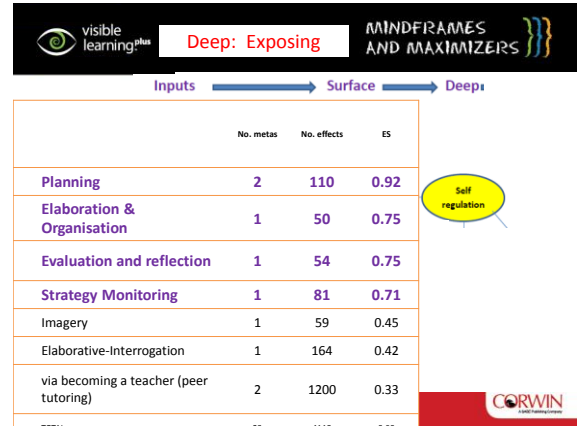
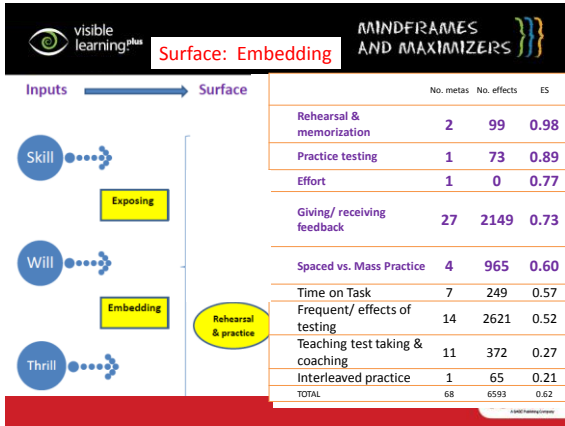
Inputs	Motivational strategies	No. metas	No. effects	ES
Skill → Deep & Strategic goals	Deep motivation	1	72	0.75
	Achieving approach	1	95	0.70
	Goal intentions	2	190	0.68
	Deep approach	1	38	0.63
	Goal difficulty	7	526	0.60
Will → Goals (Mastery, performance, social)	11	3531	0.48	
Commitment to Goals	2	104	0.41	
Mastery goals (general)	3	163	0.19	
Achieving motivation	1	18	0.18	
Surface approach	2	344	0.11	
Thrill → Surface motivation	2	58	-0.38	
TOTAL		33	5139	0.39

MINDFRAMES AND MAXIMIZERS

Inputs	No. metas	No. effects	ES	
Skill → Knowing success	Success criteria	1	162	1.13
	Concept mapping	9	433	0.64
	Setting standards for self judgment	1	156	0.62
Will → Planning and prediction	2	68	0.59	
Advanced organisers	12	1933	0.42	
Worked examples	2	179	0.37	
TOTAL	28	2858	0.66	

MINDFRAMES AND MAXIMIZERS

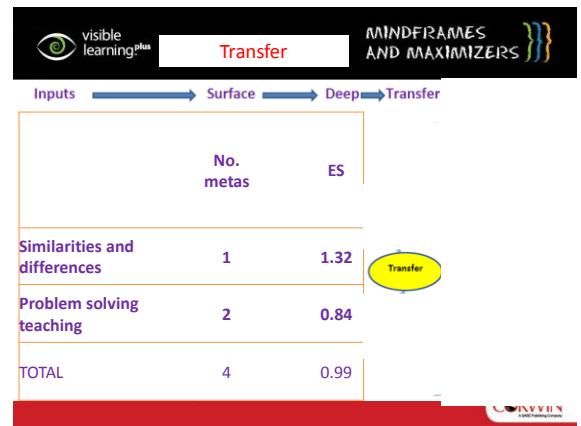
Inputs	Surface	No. metas	No. effects	ES	
Skill → Exposing	Outlining	Integrate with prior knowledge	1	12	0.93
		Summarization	2	207	0.66
Will → Embedding	Organising	3	32	0.60	
	Record keeping	2	177	0.54	
	Underlining & Highlighting	1	44	0.50	
	Reviewing records	1	84	0.49	
	Note taking	5	205	0.49	
	Engagement	5	587	0.48	
	Mnemonics	3	152	0.48	
Thrill → Memorisation	2	943	0.16		
TOTAL		25	2443	0.53	



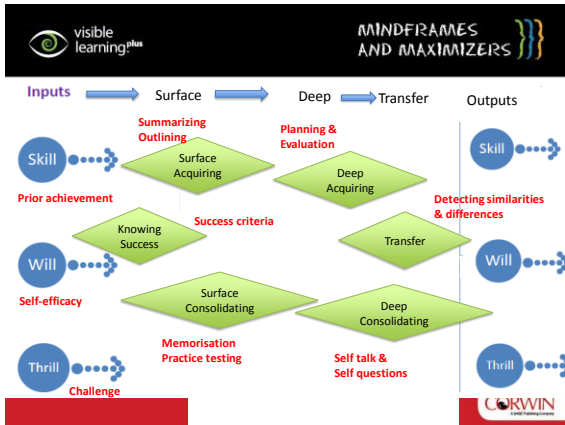
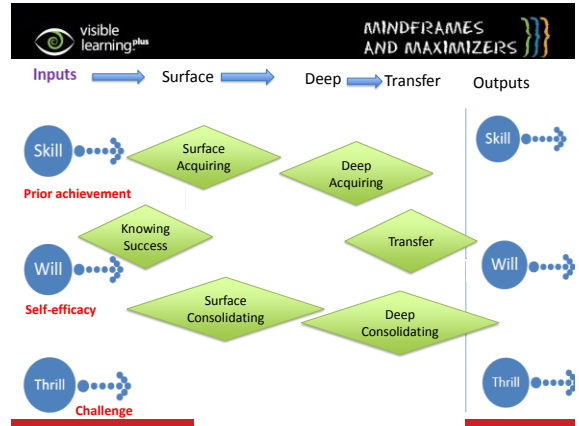
Taken from Holly Webb and Rebecca Harrig's adorable new book, Little Puppy Lost. www.littlepuppylost.co.uk



Taken from Holly Webb and Rebecca Harrig's adorable new book, Little Puppy Lost.



Environment		No. metas	No. effects	ES
Time Management		1	8	0.44
Environmental structuring		2	10	0.41
Working memory		1	30	0.35
Exercise		7	2325	0.22
Social support		1	33	0.12
Sleep		2	78	0.07
Student control over learning		3	132	0.01
TOTAL		23	2865	0.28



The Kenny Rogers theory of How we Learn best!

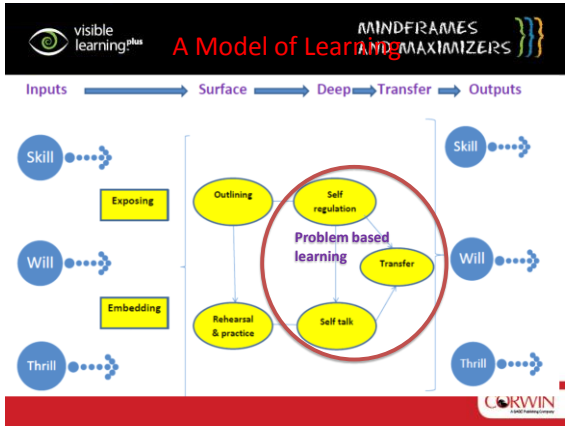
— Kenny Rogers —
AZ QUOTES

The right time for interventions

Rank	Influence	Effect-size
91	Inquiry based methods	0.31
143	Individualized instruction	0.22
144	Visual/Audio-visual methods	0.22
168	Problem based learning	0.15
184	Whole language	0.06

Problem Based Learning

Problem based Learning	Year	No studies	No effects	ES	
Newman	2004	12	12	-0.3	PBL in medicine
Vernon & Blake	1993	8	28	-0.18	PBL in college level
Wijnen	2009	10	90	-0.18	Constructivist problem based learning on
Dochy, Segers, Van den Bossche & Gijbels	2003	43	35	0.12	PBL on knowledge and skills
Walker & Leary	2008	82	201	0.13	PBL in all subjects
Walker	2008	82	201	0.13	PBL across disciplines
Leary, Walker, Shelton & Fitt	2013	94	213	0.24	PBL
Albanese & Mitchell	1993	11	66	0.27	PBL in medicine
Smith	2003	82	121	0.31	PBL in medicine
Gijbels, Dochy, Van den Bossche & Segers	2005	40	49	0.32	PBL on assessment outcomes
Leary	2012	38	75	0.48	PBL
Haas	2005	7	34	0.52	Teaching methods in algebra
TOTAL		509	1125	0.15	



Feedback feeds on error

- Reframing errors
- Error management
- Productive failure
- Desirable difficulties
- Impasse driven
- The Pit of Confusion
- Reframing errors

Meta-analysis --- Keith and Frese (2008)

	Surface	Deep
Surface learning to familiar tasks	-.15	.56
Far transfer to (new problems)	.20	.80

The brain is a great predictor of error

- We do not like inconsistencies
- We do not tolerate ambiguity
- We like to have some sense of predictability over outcomes



Visible Learning Publications

- VISIBLE LEARNING: A SYNTHESIS OF OVER 800 META-ANALYSES IN EDUCATION
- VISIBLE LEARNING FOR TEACHERS
- Visible Learning into Action
- FROM THE LABORATORY TO THE CLASSROOM
- INTERNATIONAL STUDENT ACHIEVEMENT
- Visible Learning and the Science of How we Learn
- VISIBLE LEARNING WITH UTILITY
- VISIBLE LEARNING WITH CHALLENGE
- Kenne deinen Einfluss!

Just out: August 8th, September, October