

Leadership for teacher learning

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Outline: six questions

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- Where should our efforts be focused?
- Where does formative assessment fit in?
- What makes effective teacher learning?
- How should teacher meetings be organized?
- What doesn't get done?
- How will we know it's working?



Why we need to raise achievement

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- In advanced economies, over the next 20 to 30 years
 - ▣ Between a quarter and a third of jobs could be offshored (Blinder, 2011)
 - ▣ About half could be done by machines (Frey & Osborne, 2013)
- The choice for young people
 - ▣ Wait for someone else to invent a new job for you
 - ▣ Create your own



What kinds of schools do we need?

School model	Ethos	Key process
Talent refineries	School must provide opportunities for students to show what they can do	Ensuring good teaching and syllabus coverage
Talent incubators	All students students can learn, but not all students can achieve at high levels	Drawing out what is within the student
Talent factories	All students can achieve at high levels	“Whatever it takes”



Why every school should do pareto analysis

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- Vilfredo Pareto (1848-1923)
 - ▣ Economist, philosopher, and sociologist, associated with the 80:20 rule
- Pareto improvement
 - ▣ A change that can make at least one person (e.g., a student) better off without making anyone else (e.g., a teacher) worse off.
- Pareto efficiency/Pareto optimality
 - ▣ An allocation (e.g., of resources) is Pareto efficient or Pareto optimal when there are no more Pareto improvements



What kinds of changes could we make?

- Changes in structure
- Changes in management
- Changes in teachers' subject knowledge
- Changes in teachers' classroom practice



Using research evidence

Understanding meta-analysis

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- A technique for aggregating results from different studies by converting empirical results to a common measure (usually effect size)
- Standardized effect size is defined as:

$$\frac{\text{experimental mean} - \text{control group mean}}{\text{population standard deviation}}$$

- Problems with meta-analysis
 - ▣ The “file drawer” problem
 - ▣ Variations in intervention quality
 - ▣ Variation in population variability
 - ▣ Selection of studies
 - ▣ Sensitivity of outcome measures



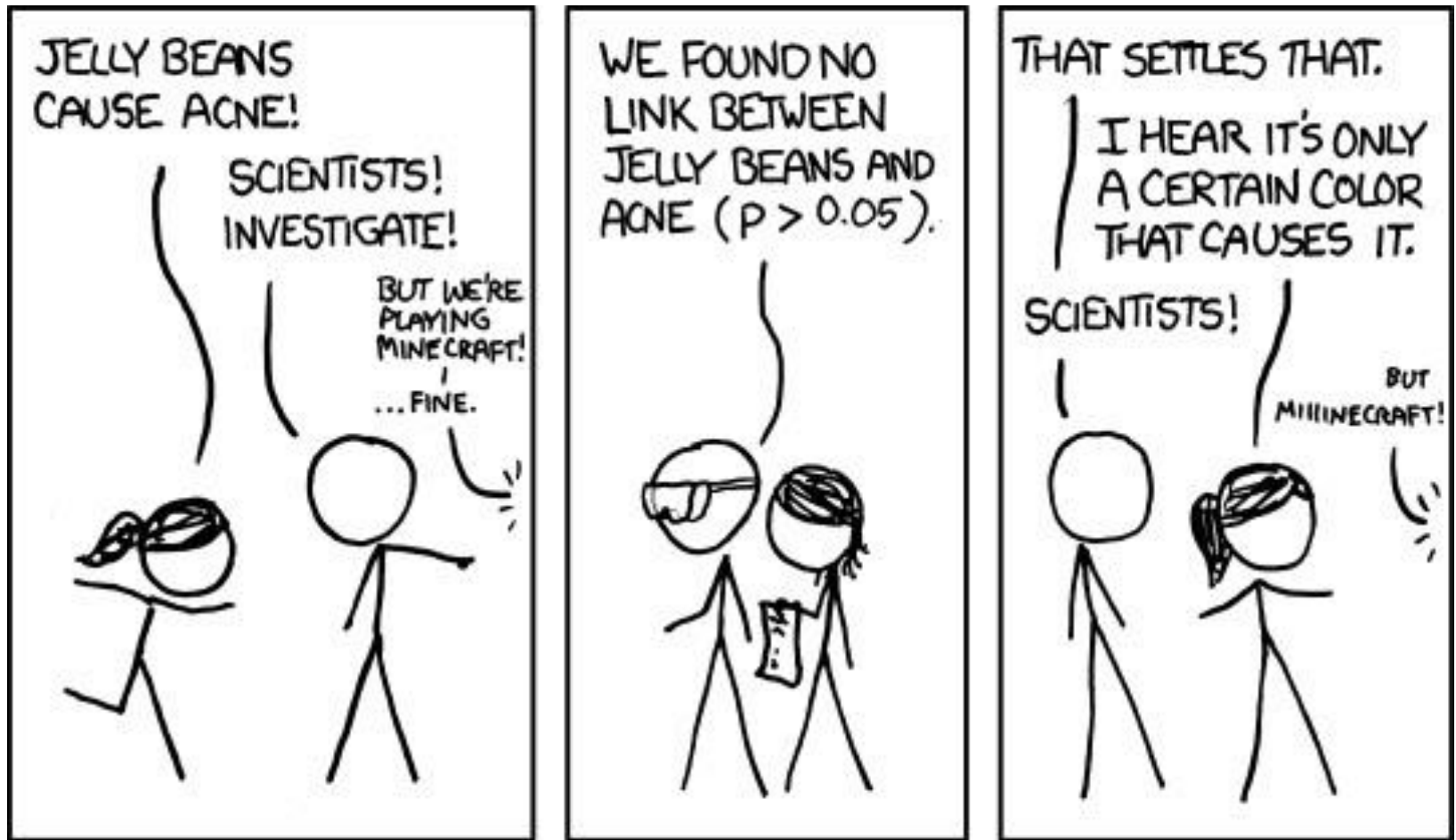
The file-drawer problem

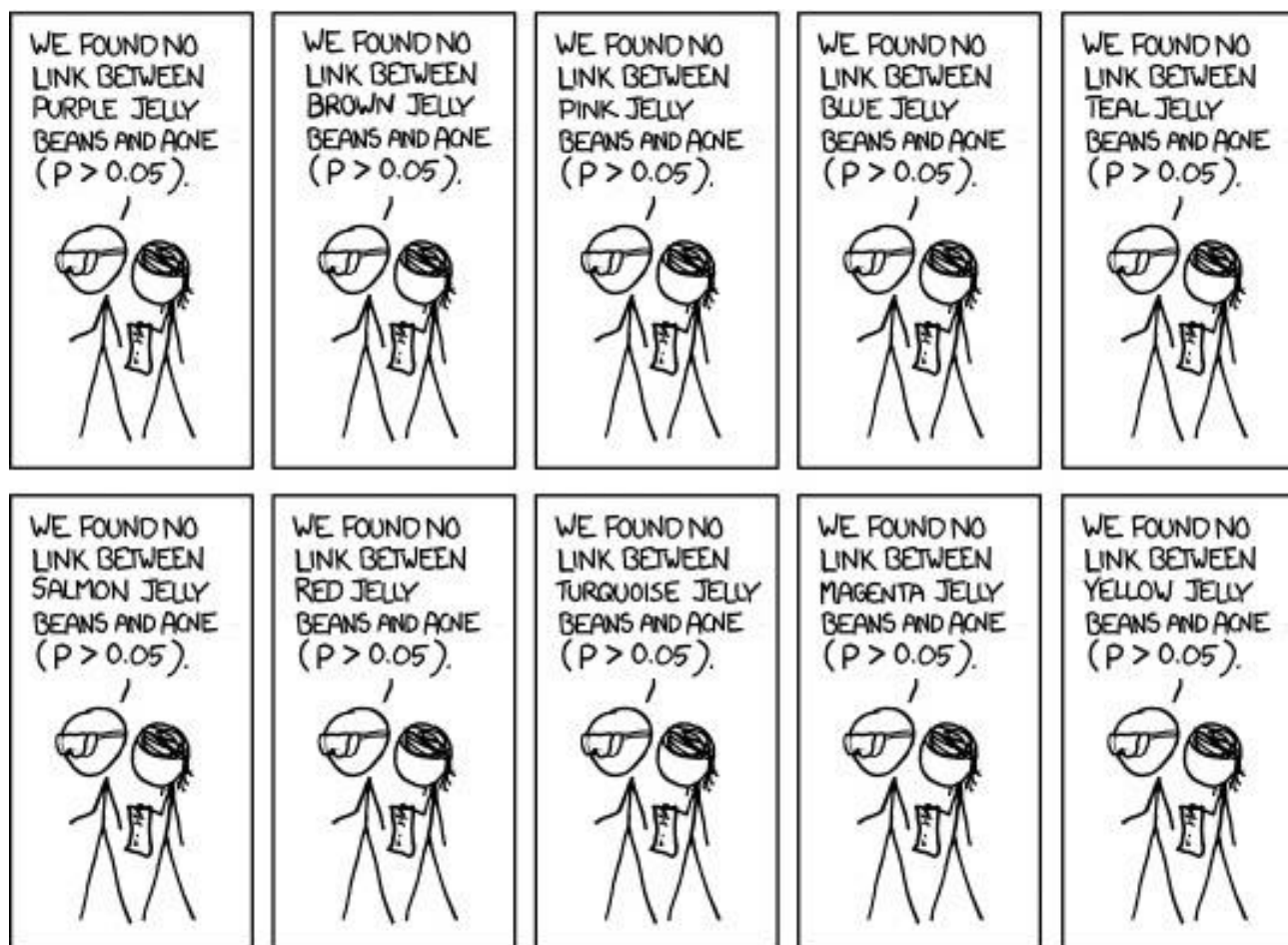
The importance of statistical power

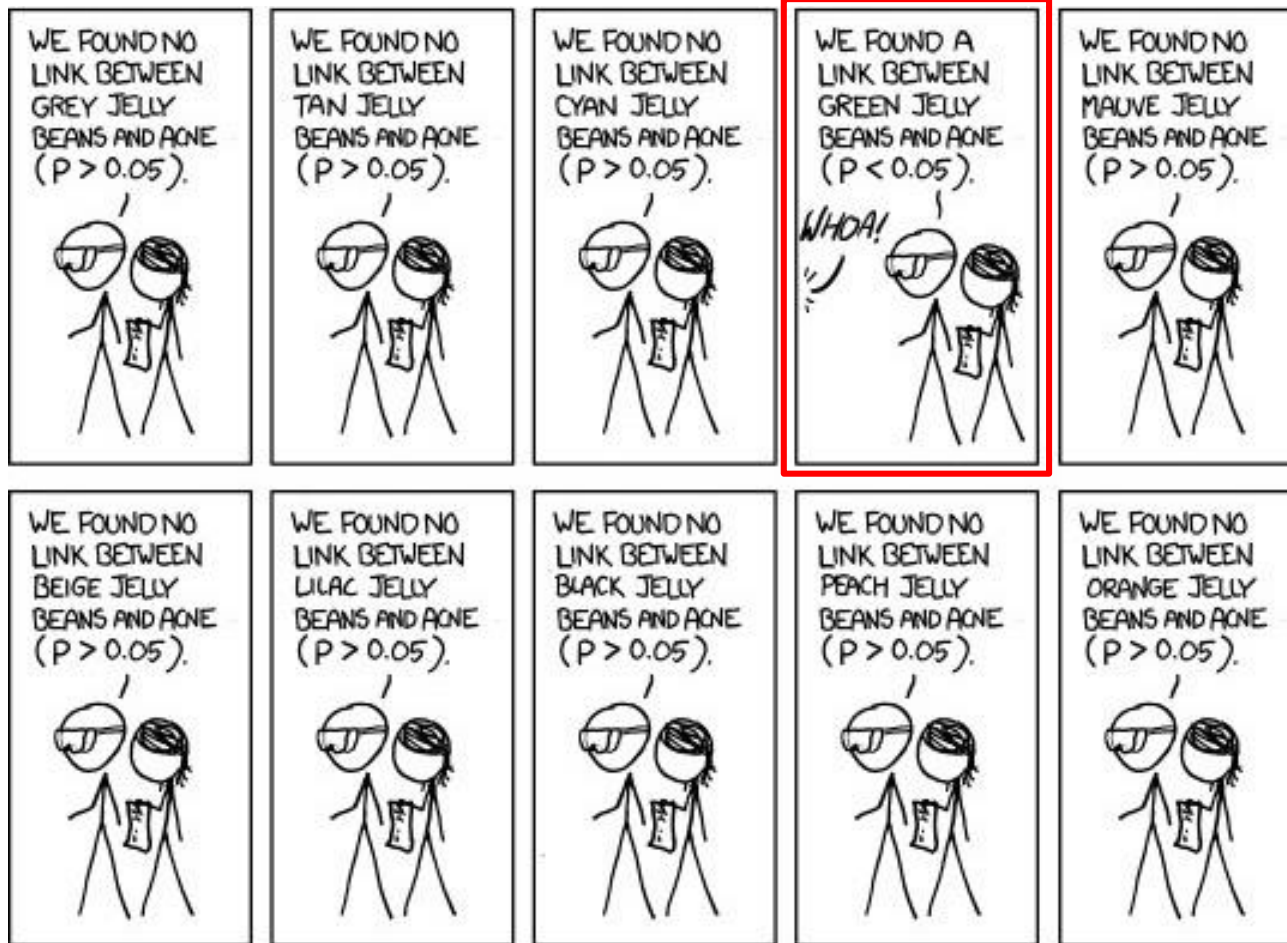
- The statistical power of an experiment is the probability that the experiment will yield an effect that is large enough to be statistically significant.
- In single-level designs, power depends on
 - ▣ significance level set
 - ▣ magnitude of effect
 - ▣ size of experiment
- The power of most social studies experiments is low
 - ▣ Psychology: 0.4 (Sedlmeier & Gigerenzer, 1989)
 - ▣ Neuroscience: 0.2 (Burton et al., 2013)
 - ▣ Education: 0.4
- Only lucky experiments get published...

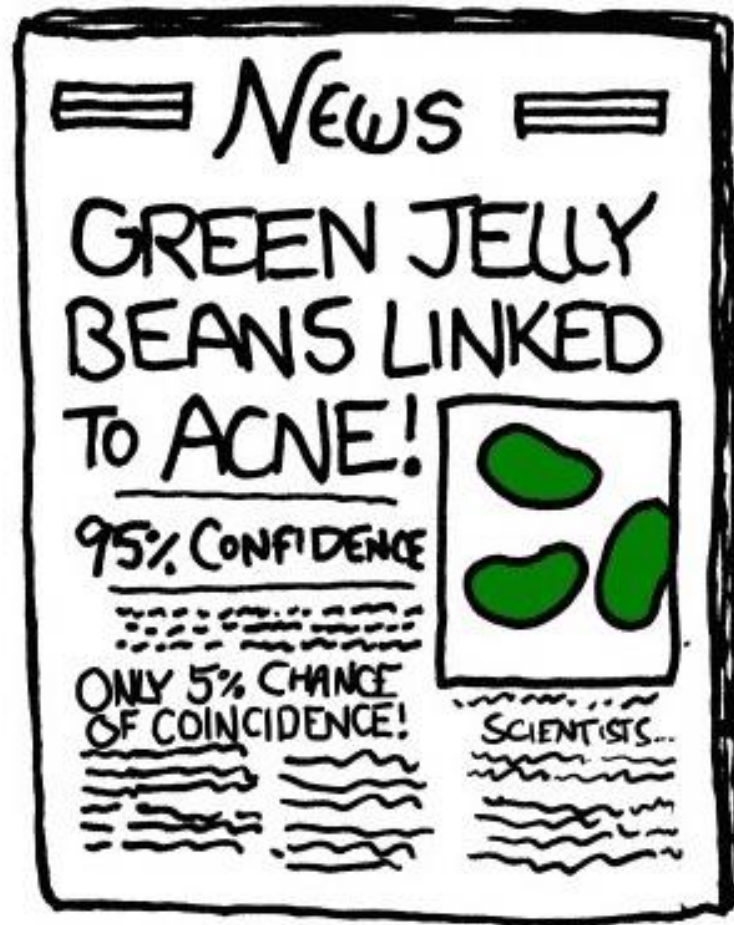


Significant (XKCD 2011)



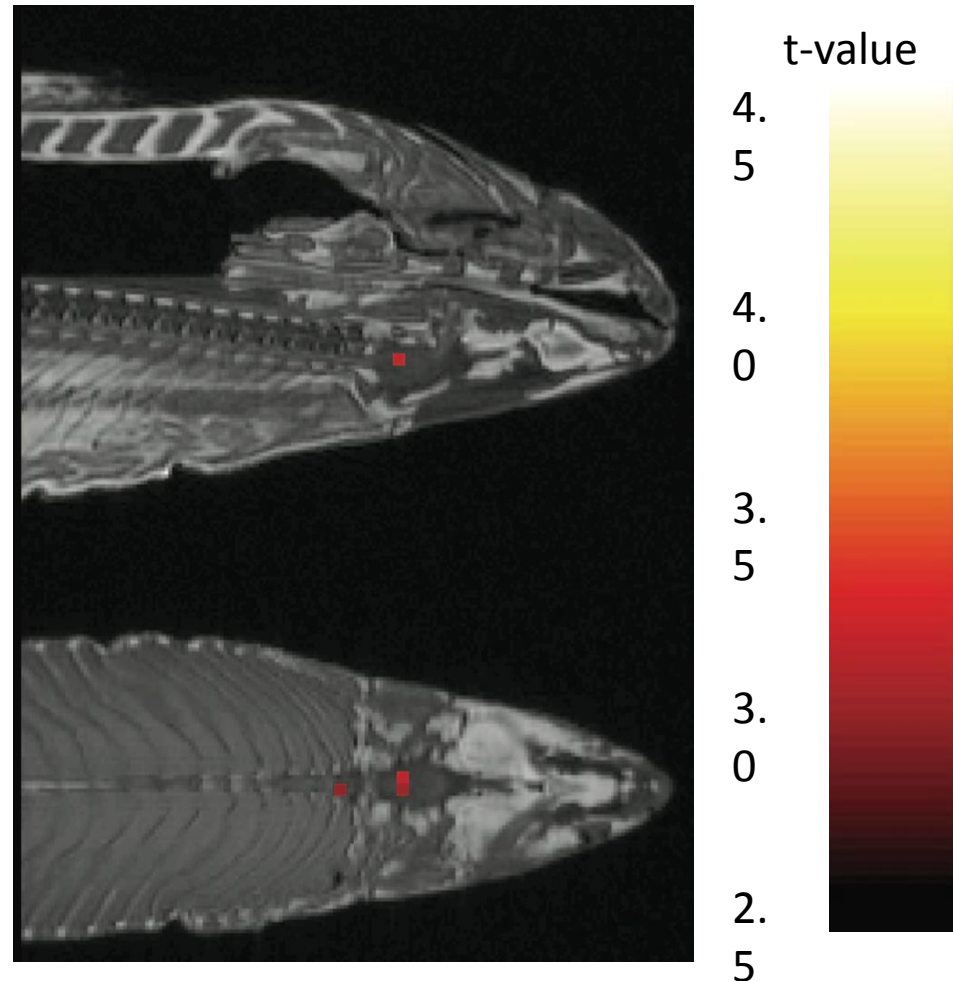






Consequences of low statistical power

- fMRI scan of an Atlantic salmon shown 15 photos of humans in social situations for 10 seconds and asked to determine the emotion being displayed
- Voxelwise statistics on the salmon data were calculated through an ordinary least-squares estimation of the general linear model (GLM)
- Areas of significant blood oxygen level changes ($p < 0.001$) shown
- The salmon was not alive at the time of the scanning



Variation in intervention quality

Quality

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- Interventions vary in their
 - ▣ Duration
 - ▣ Intensity
 - class size reduction by 20%, 30%, or 50%
 - response to intervention
 - ▣ Collateral effects
 - assignment of teachers

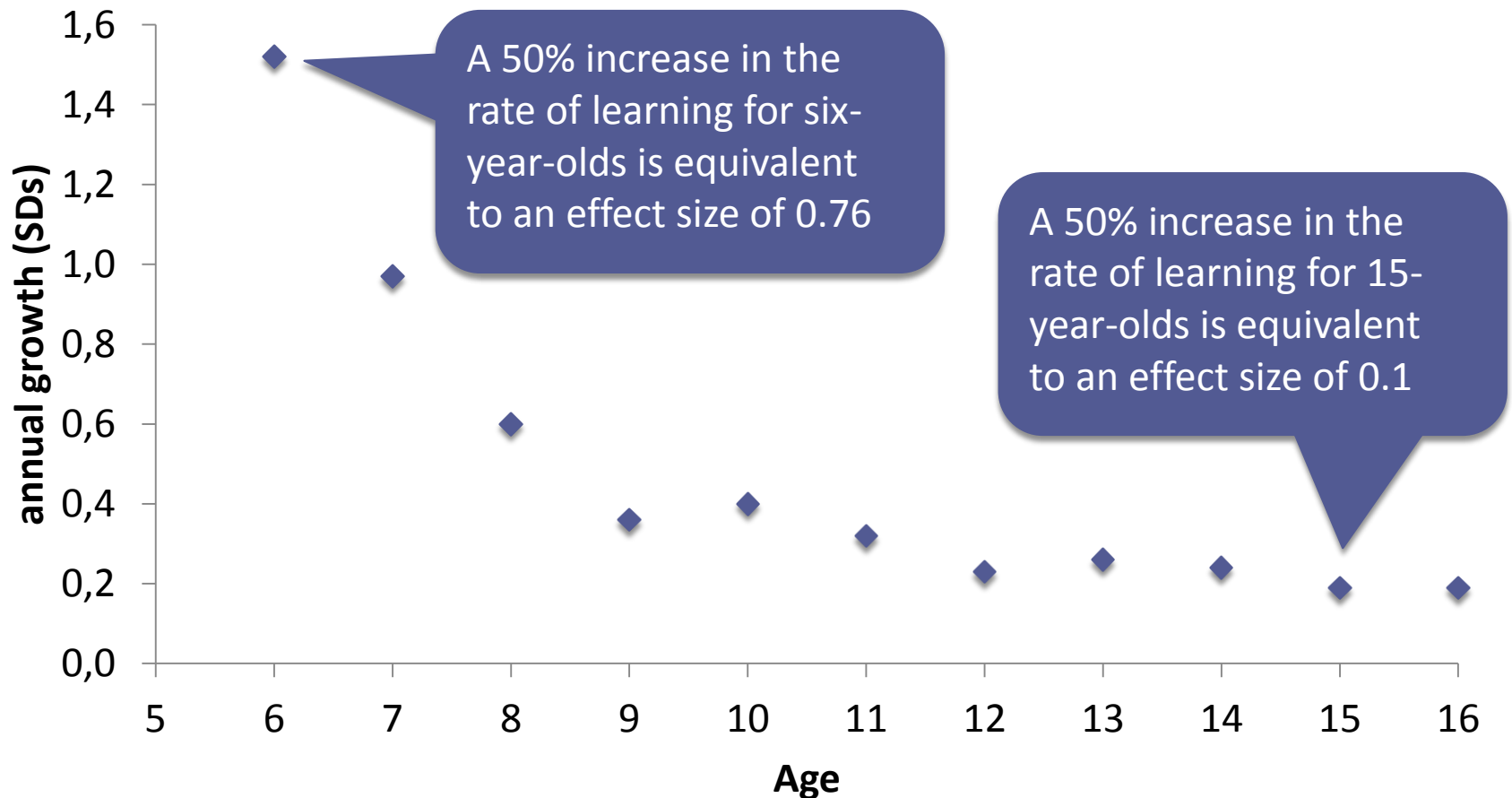


Variation in variability



Annual growth in achievement, by age

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Bloom, Hill, Black, and Lipsey (2008)



Variation in variability

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- Studies with younger children will produce larger effect size estimates
- Studies with restricted populations (e.g., children with special needs, gifted students) will produce larger effect size estimates



Selection of studies

Feedback in STEM subjects

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- Review of 9000 papers on feedback in mathematics, science and technology
- Only 238 papers retained
 - ▣ Background papers 24
 - ▣ Descriptive papers 79
 - ▣ Qualitative papers 24
 - ▣ Quantitative papers 111
 - Mathematics 60
 - Science 35
 - Technology 16



Classification of feedback studies

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1. Who provided the feedback (teacher, peer, self, or technology-based)?
2. How was the feedback delivered (individual, small group, or whole class)?
3. What was the role of the student in the feedback (provider or receiver)?
4. What was the focus of the feedback (e.g., product, process, self-regulation for cognitive feedback; or goal orientation, self-efficacy for affective feedback)
5. On what was the feedback based (student product or process)?
6. What type of feedback was provided (evaluative, descriptive, or holistic)?
7. How was feedback provided or presented (written, video, oral, or video)?
8. What was the referent of feedback (self, others, or mastery criteria)?
9. How, and how often was feedback given in the study (one time or multiple times; with or without pedagogical use)?



Main findings

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Characteristic of studies included	Maths	Science
Feedback treatment is a single event lasting minutes	85%	72%
Reliability of outcome measures	39%	63%
Validity of outcome measures	24%	3%
Dealing only or mainly with declarative knowledge	12%	36%
Schematic knowledge (e.g., knowing why)	9%	0%
Multiple feedback events in a week	14%	17%



Sensitivity to instruction



Sensitivity of outcome measures

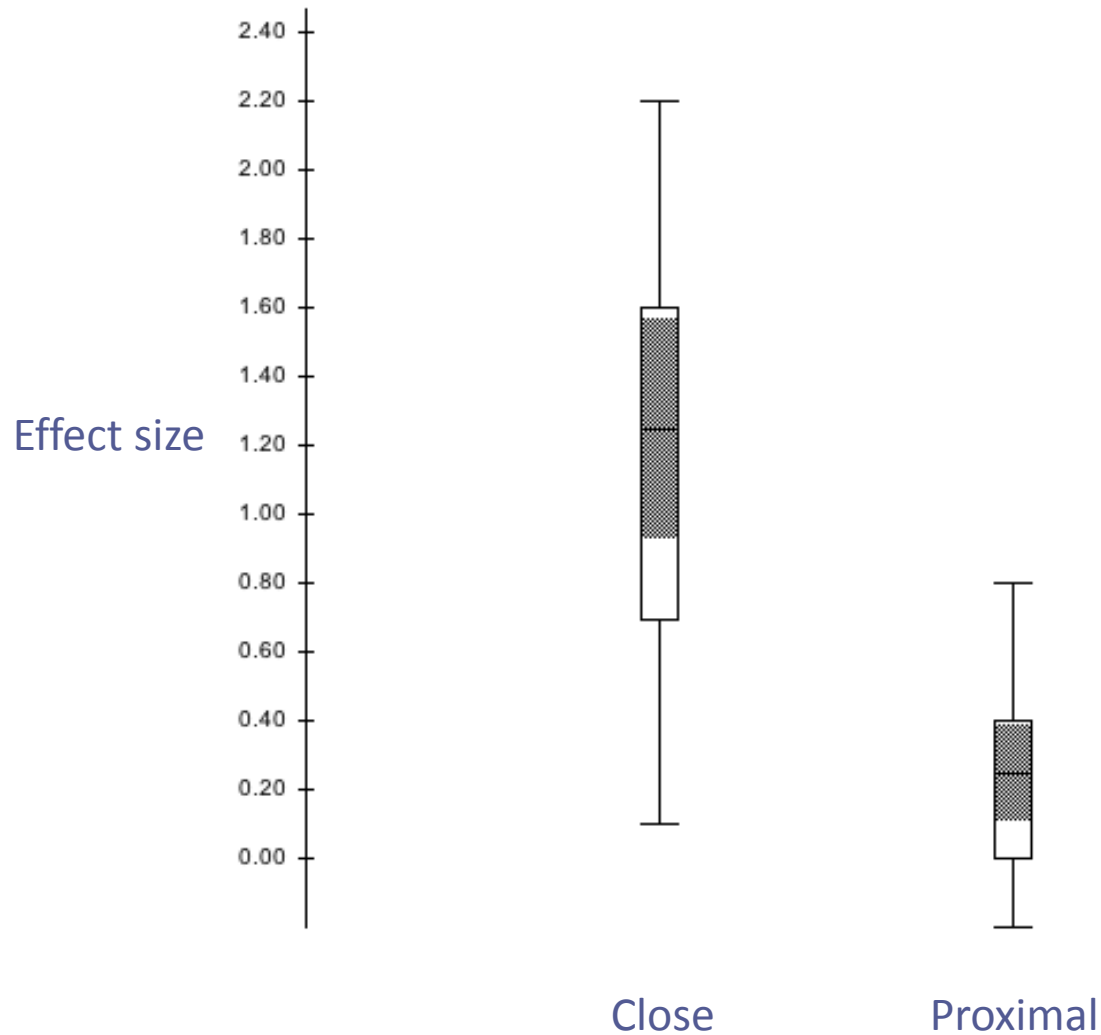
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- Distance of assessment from the curriculum
 - ▣ Immediate
 - e.g., science journals, notebooks, and classroom tests
 - ▣ Close
 - e.g., where an immediate assessment asked about number of pendulum swings in 15 seconds, a close assessment asks about the time taken for 10 swings
 - ▣ Proximal
 - e.g., if an immediate assessment asked students to construct boats out of paper cups, the proximal assessment would ask for an explanation of what makes bottles float
 - ▣ Distal
 - e.g., where the assessment task is sampled from a different domain and where the problem, procedures, materials and measurement methods differed from those used in the original activities
 - ▣ Remote
 - standardized national achievement tests.



Impact of sensitivity to instruction

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Meta-analysis in education

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- Some problems are unavoidable:
 - ▣ Sensitivity to instruction
 - ▣ Selection of studies
- Some problems are avoidable
 - ▣ File-drawer problem
 - ▣ Quality
 - ▣ Variation in variability
- Unfortunately, most of the people doing meta-analysis in education
 - ▣ don't discuss the unavoidable problems, and
 - ▣ don't avoid the avoidable ones



Best-evidence synthesis

Relevant studies

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- Fuchs & Fuchs (1986)
- Natriello (1987)
- Crooks (1988)
- Bangert-Drowns, et al. (1991)
- Kluger & DeNisi (1996)
- Black & Wiliam (1998)
- Nyquist (2003)
- Dempster (1991, 1992)
- Elshout-Mohr (1994)
- Brookhart (2004)
- Allal & Lopez (2005)
- Köller (2005)
- Brookhart (2007)
- Wiliam (2007)
- Hattie & Timperley (2007)
- Shute (2008)

Unpacking formative assessment

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	Where the learner is going	Where the learner is	How to get there
Teacher	Clarifying, sharing and understanding learning intentions	Engineering effective discussions, tasks, and activities that elicit evidence of learning	Providing feedback that moves learners forward
Peer		Activating students as learning resources for one another	
Learner		Activating students as owners of their own learning	

And one big idea

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	Where the learner is going	Where the learner is	How to get there
Teacher	<p>Using evidence of achievement to adapt what happens in classrooms to meet learner needs</p>		
Peer			
Learner			

Educational Endowment Foundation toolkit

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Intervention	Cost	Quality of evidence	Extra months of learning
Feedback	££	□□□	+8
Metacognition and self-regulation	££	□□□□	+8
Peer tutoring	££	□□□□	+6
Early years intervention	£££££	□□□□	+6
One to one tuition	££££	□□□□	+5
Homework (secondary)	£	□□□	+5
Collaborative learning	£	□□□□	+5
Phonics	£	□□□□	+4
Small group tuition	£££	□□□□	+4
Behaviour interventions	£££	□□	+4
Digital technology	££££	□□□□	+4
Social and emotional learning	£	□□□□	+4

Educational Endowment Foundation toolkit

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Intervention	Cost	Quality of evidence	Extra months of learning
Parental involvement	£££	□□□	+3
Reducing class size	£££££	□□□	+3
Summer schools	£££	□□	+3
Sports participation	£££	□□	+2
Arts participation	££	□□□	+2
Extended school time	£££	□□	+2
Individualized instruction	£	□□□	+2
After school programmes	££££	□□	+2
Learning styles	£	□□□	+2
Mentoring	£££	□□□	+1
Homework (primary)	£	□□□	+1

Educational Endowment Foundation toolkit

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Intervention	Cost	Quality of evidence	Extra months of learning
Teaching assistants	££££	□□	0
Performance pay	££	□	0
Aspiration interventions	£££	□	0
Block scheduling	£	□□	0
School uniform	£	□	0
Physical environment	££	□	0
Ability grouping	£	□□□	-1



Unpacking formative assessment

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	Where the learner is going	Where the learner is	How to get there
Teacher	Clarifying, sharing and understanding learning intentions	Engineering effective discussions, tasks, and activities that elicit evidence of learning	Providing feedback that moves learners forward
Peer		Activating students as learning resources for one another	
Learner		Activating students as owners of their own learning	

Recent meta-analytic findings

Content area	N	95% confidence interval for effect size		
		Lower	Mean	Upper
Mathematics	19	0.14	0.17	0.20
English Language Arts	4	0.30	0.32	0.34
Science	17	0.06	0.19	0.31
Total	40			

Mean effect size ≈ 0.20

A big effect size

Equivalent to a 50% to 70% increase in the rate of learning



What makes effective teacher learning?

The knowing-doing gap (Pfeffer 2000)

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Statement	We know we should do this	We are doing this
Getting ideas from other units in the chain	4.9	4.0
Instituting an active suggestions program	4.8	3.9
Using a detailed assessment process for new hires	5.0	4.2
Posting all jobs internally	4.2	3.5
Talking openly about learning from mistakes	4.9	4.3
Providing employees with frequent feedback	5.7	5.2
Sharing information on financial performance	4.3	3.8

The happiness hypothesis (Haidt, 2005)

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	+	—
The rider	Rational Good at complex analysis Focused on the long-term Thinks about the future	Weak Easily distracted Gets bogged down in detail Tires quickly
The elephant	Instinctive Compassionate Sympathetic Loyal Protective Powerful	Emotional Skittish Focused on the short-term Thinks about the present



Strategies for change (Heath & Heath, 2010)

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- Direct the rider
 - ▣ Follow the bright spots (malnutrition in Vietnam)
 - ▣ Script the critical moves (1% milk, 25 points)
 - ▣ Point to the destination (no dry holes)
- Motivate the elephant
 - ▣ Find the feeling (gloves on the table)
 - ▣ Shrink the change (five-minute room makeover)
 - ▣ Grow your people (mindset)
- Shape the path
 - ▣ Tweak the environment (popcorn study, one-click)
 - ▣ Build habits (don't tax the rider, action triggers)
 - ▣ Rally the herd (free spaces in hospitals)



A model for teacher learning

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- Content, then process
- Content (what we want teachers to change):
 - ▣ Evidence
 - ▣ Ideas (strategies and techniques)
- Process (how to go about change):
 - ▣ Choice
 - ▣ Flexibility
 - ▣ Small steps
 - ▣ Accountability
 - ▣ Support

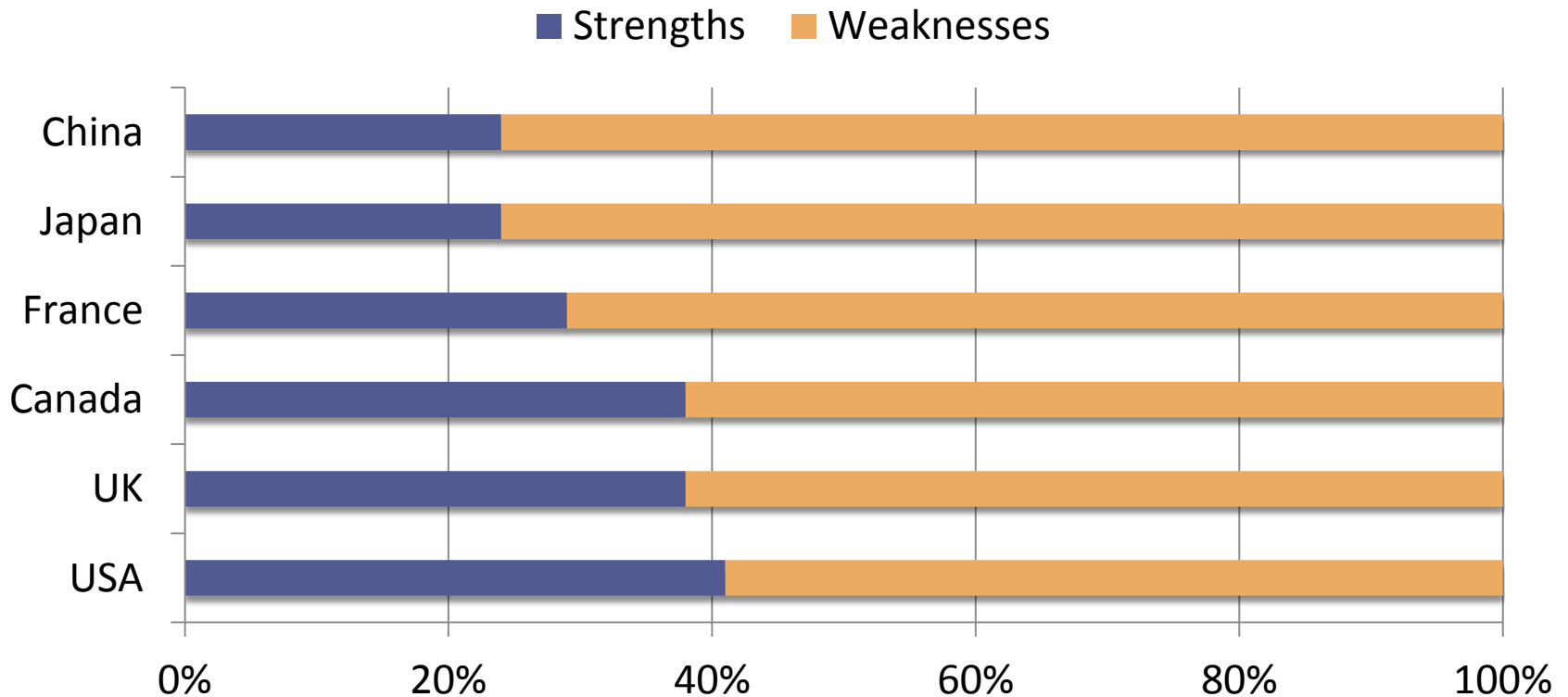


Choice

Strengths-based development

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"Which do you think will help you improve the most? Knowing your strengths or knowing your weaknesses?"



Hodges and Clifton (2004)



Teamwork

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- Belbin inventory (Management teams: Why they succeed or fail):
 - ▣ Eight team roles (defined as “a tendency to behave, contribute and interrelate with others in a particular way”):
 - Company worker; innovator; shaper; chairperson; resource investigator; monitor/evaluator; completer/finisher; team worker
 - ▣ Key ideas:
 - Each role has strengths and allowable weaknesses.
 - People rarely sustain “out-of-role” behavior, especially under stress.



Principal strengths and allowable weaknesses

	Principal strengths	Allowable weaknesses
Company worker	Disciplined, hard-working	Lack of flexibility
Chairman	Valuing contributions	Not particularly creative
Shaper	Drive	Impatience
Plant	Thinking “outside the box”	Impractical
Resource investigator	Openness to new ideas	Short attention-span
Monitor-evaluator	Hard-headed	Poor motivator
Team worker	Responsive to others	Not good in crises
Completer finisher	Detail-oriented	Obsessive



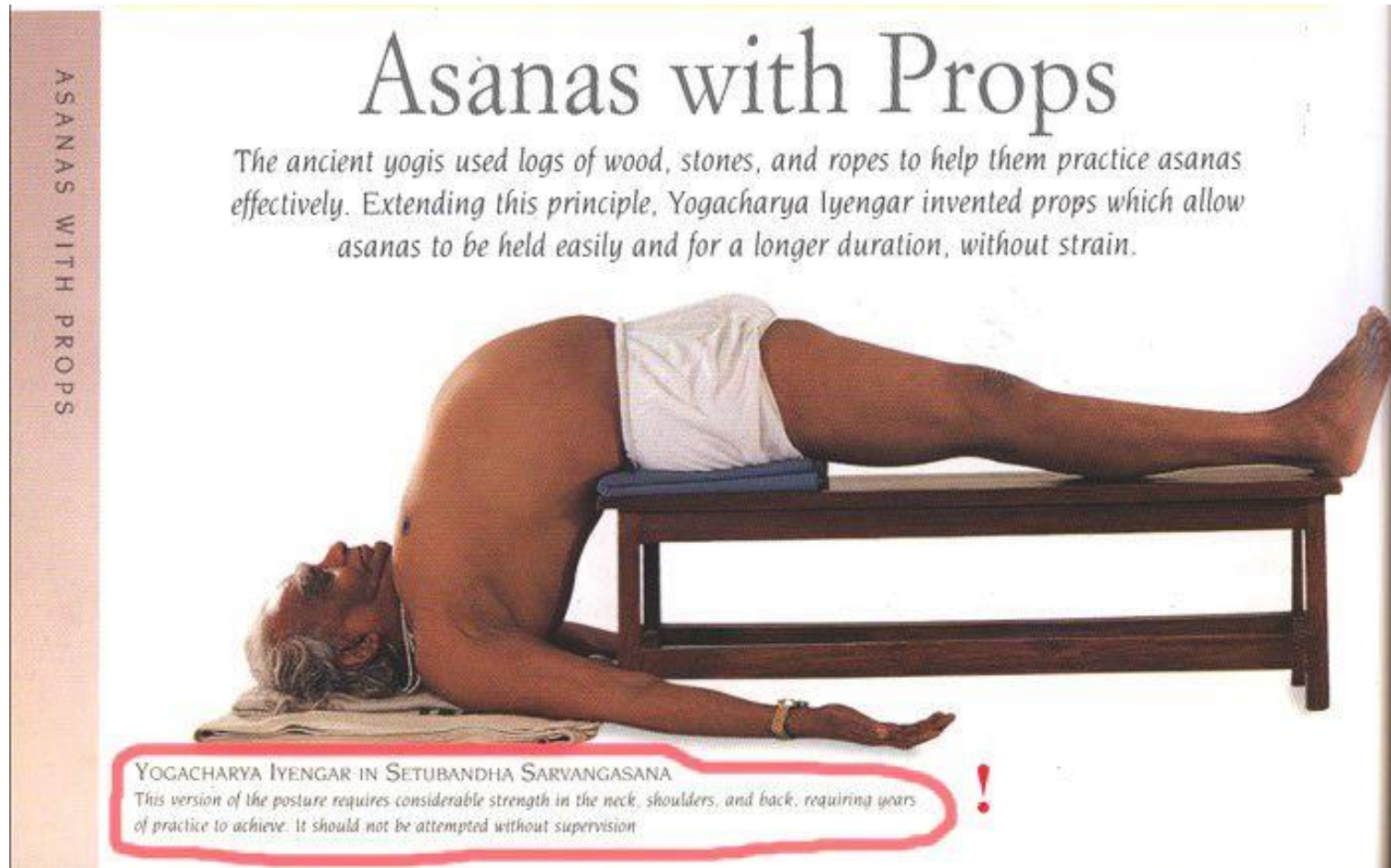
- Talent development requires attending to both strengths and weaknesses
- The question is how to distribute attention between the two:
 - For novices, attention to weaknesses is likely to have the greatest payoff
 - For more experienced teachers, attention to strengths is likely to be more advantageous



Flexibility

Context matters...

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Tight, but loose

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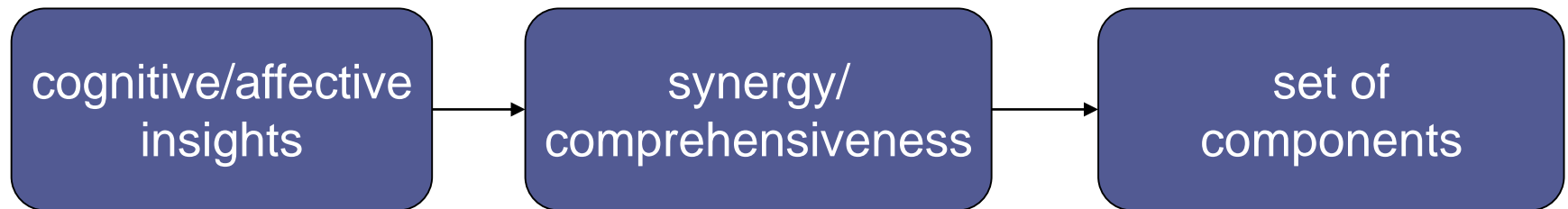
- Two opposing factors in any school reform
 - ▣ Need for flexibility to adapt to local constraints and affordances
 - Implies there is appropriate flexibility built into the reform
 - ▣ Need to maintain fidelity to the theory of action of the reform, to minimise “lethal mutations”
 - So you have to have a clearly articulated theory of action
- Different innovations have different approaches to flexibility
 - ▣ Some reforms are too loose (e.g., ‘Effective schools’ movement)
 - ▣ Others are too tight (e.g., Montessori Schools)
- The “tight but loose” formulation:
 - ▣ ... combines an obsessive adherence to central design principles (the “tight” part) with accommodations to the needs, resources, constraints, and affordances that occur in any school or district (the “loose” part), but only where these do not conflict with the theory of action of the intervention.



Design and intervention

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Our design process



Teachers' implementation process



Small steps

The role of deliberate practice

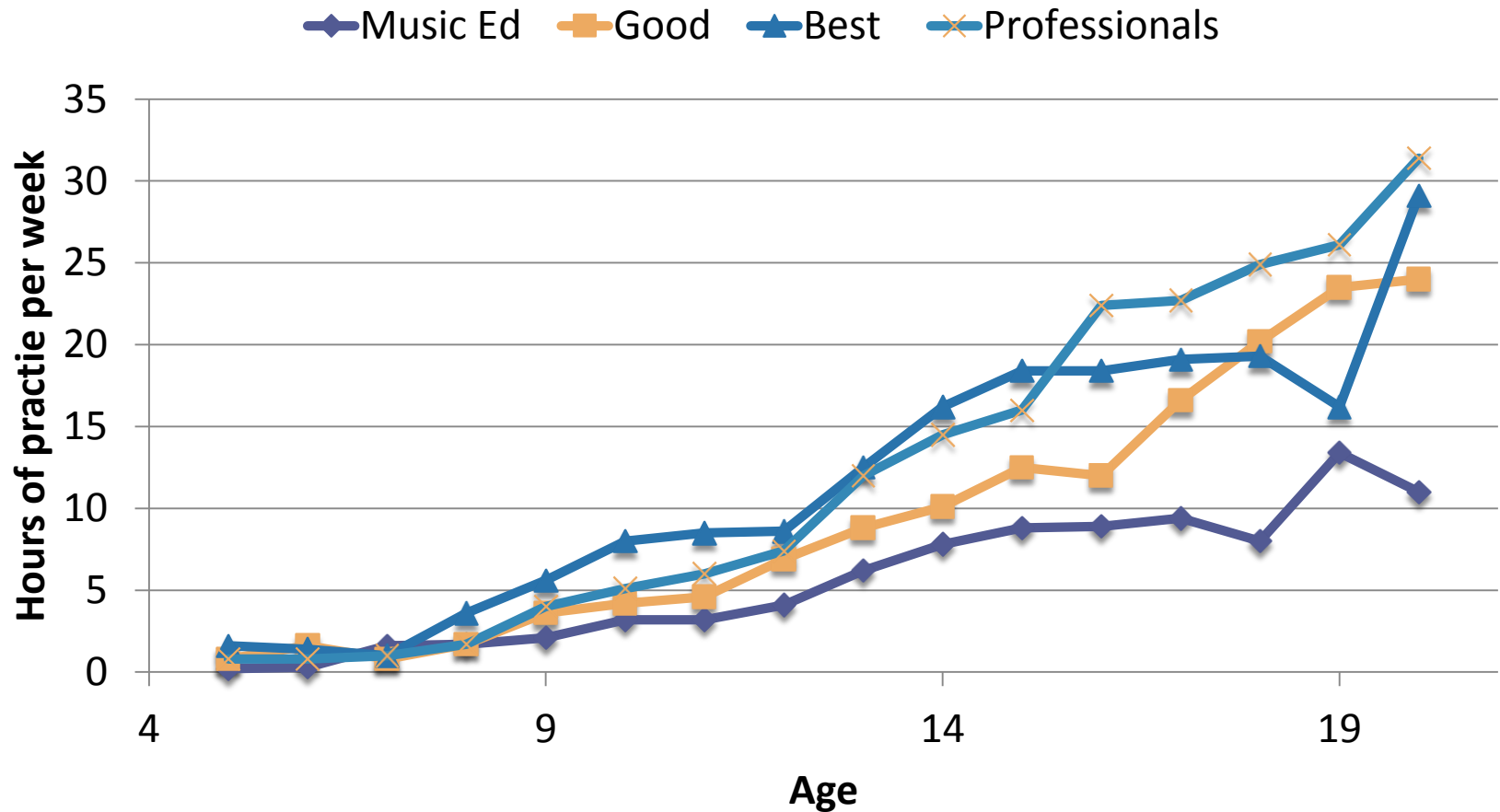
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- Music professors at the Hochschule der Kuenst (Academy of Music) Berlin identified 10 violin students who had the potential for careers as international soloists (“best” students)
- The professors also identified a sample of 10 good, but not outstanding students (“good” students)
- Researchers recruited another 10 students training to be music teachers who specialised in the violin (“Music Ed” students)
- An additional 10 middle-aged professional violinists from two local orchestras were recruited to the study
- Groups were matched in sex (7f, 3m) and for the first three groups, age



How much do violinists practice?

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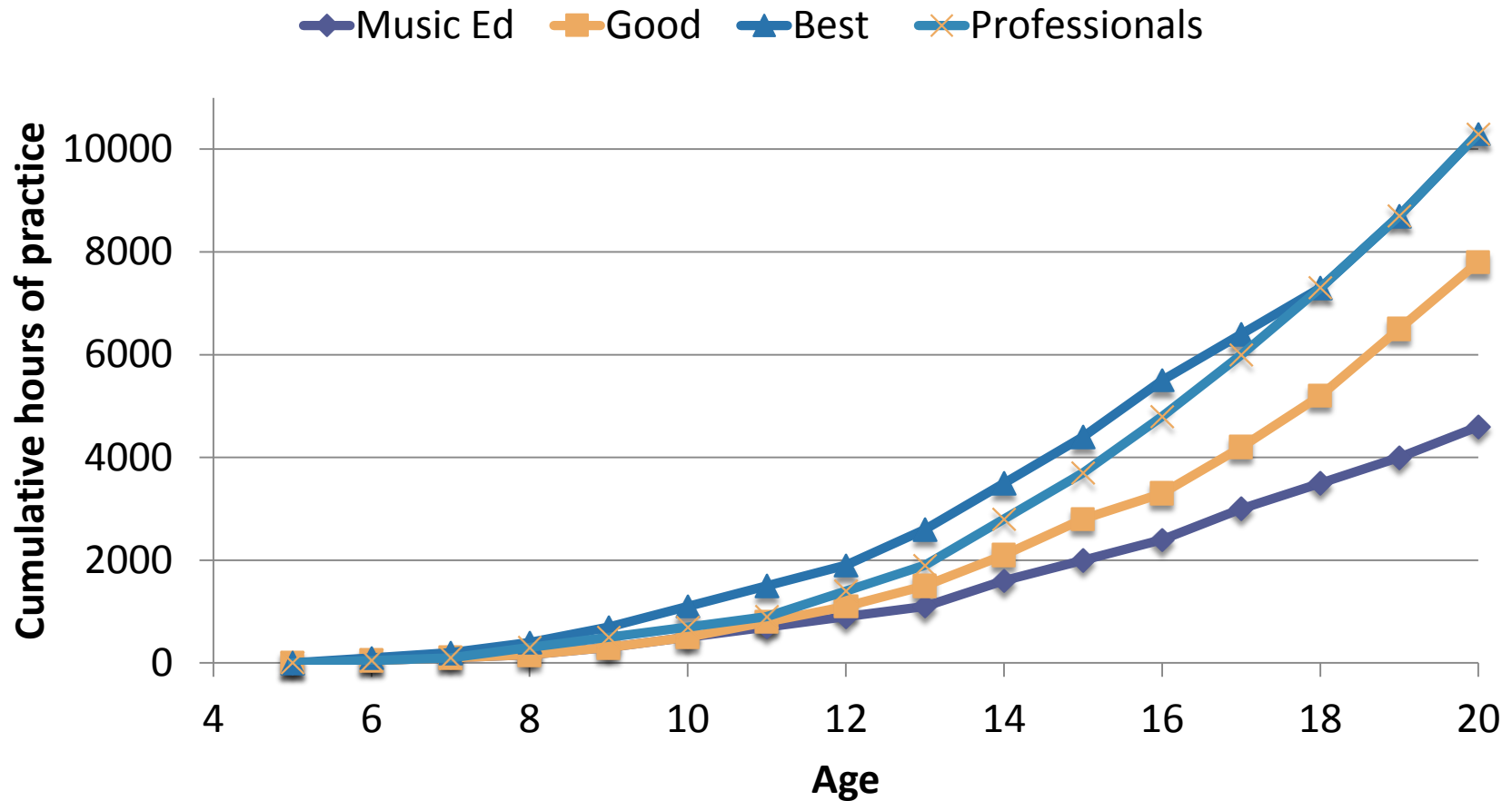


Ericsson, Krampe, & Tesch-Römer (1993)



Violinists' hours of practice (cumulative)

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These differences are substantial...

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	Hours of practice by age 18
Music Education students	3420
Good violin students	5301
Best violin students	7410
Professional musicians	7336

- By the age of 18, the best violinists have accumulated 40% more practice than good violinists
- Since the amount of deliberate practice being undertaken by the best students once they are adults is close to the maximum possible, it is, essentially, impossible for the good students to catch up to the best.

General conclusions about expertise

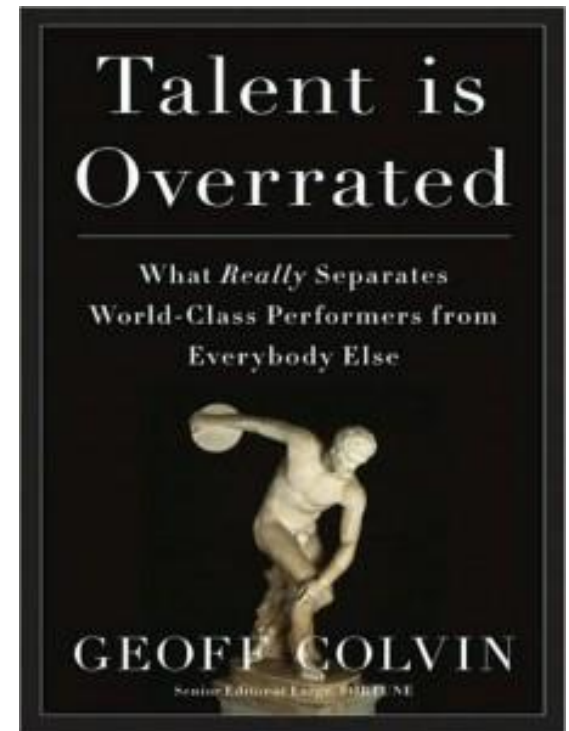
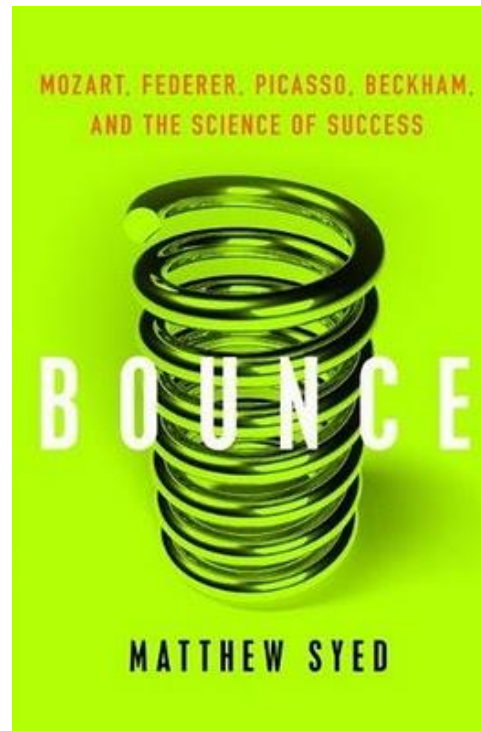
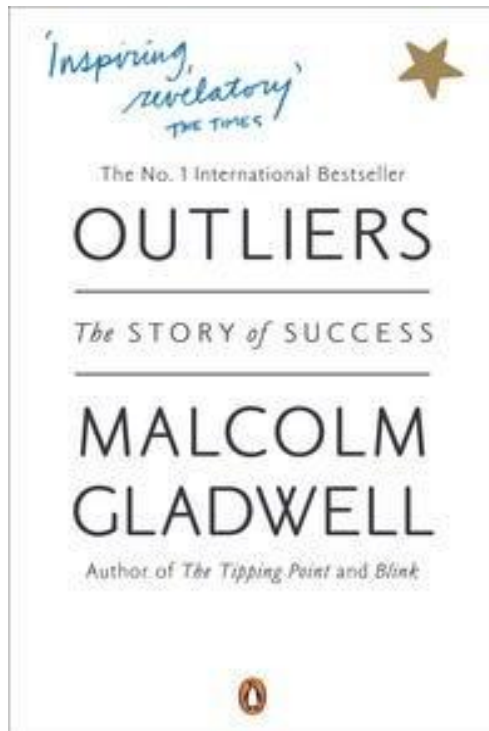
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- Elite performance is the result of at least a decade of maximal efforts to improve performance through an optimal distribution of deliberate practice
- What distinguishes experts from others is the commitment to deliberate practice
- Deliberate practice is
 - an effortful activity that can be sustained only for a limited time each day
 - neither motivating nor enjoyable—it is instrumental in achieving further improvement in performance



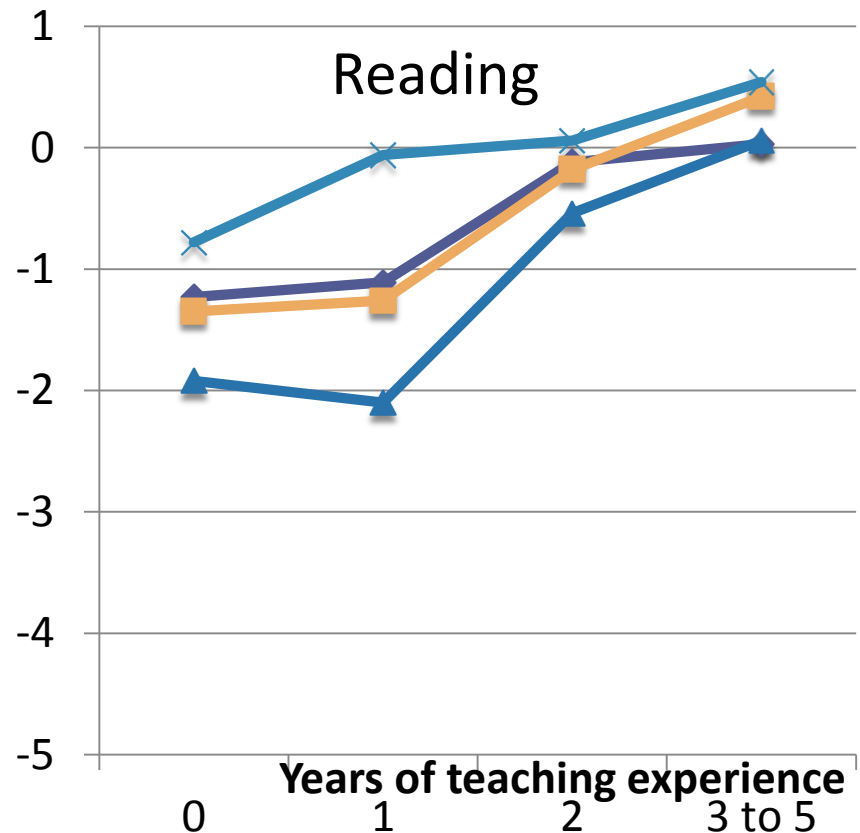
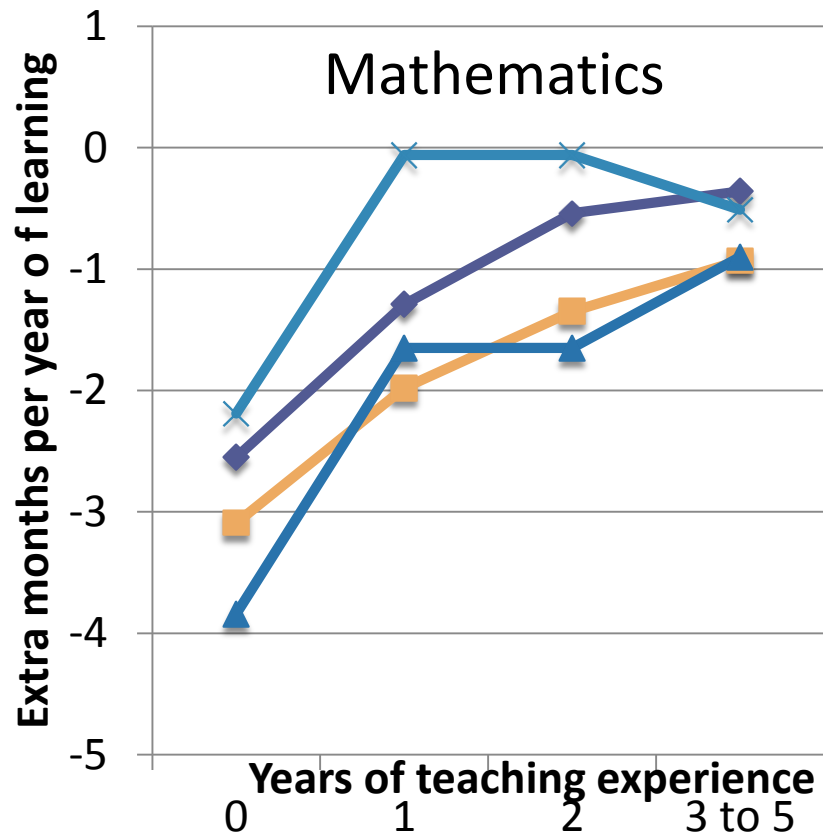
Talent is over-rated...

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Effects of experience in teaching

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Implications for education systems

- ❑ Pursuing a strategy of getting the “best and brightest” into teaching is unlikely to succeed
- ❑ Currently all teachers slow, and most actually stop, improving after two or three years in the classroom
- ❑ Expertise research therefore suggests that they are only beginning to scratch the surface of what they are capable of
- ❑ What we need is to persuade those with a real passion for working with young people to become teachers, and to continue to improve as long as they stay in the job.
- ❑ There is no limit to what we can achieve if we support our teachers in the right way



Why research hasn't changed teaching

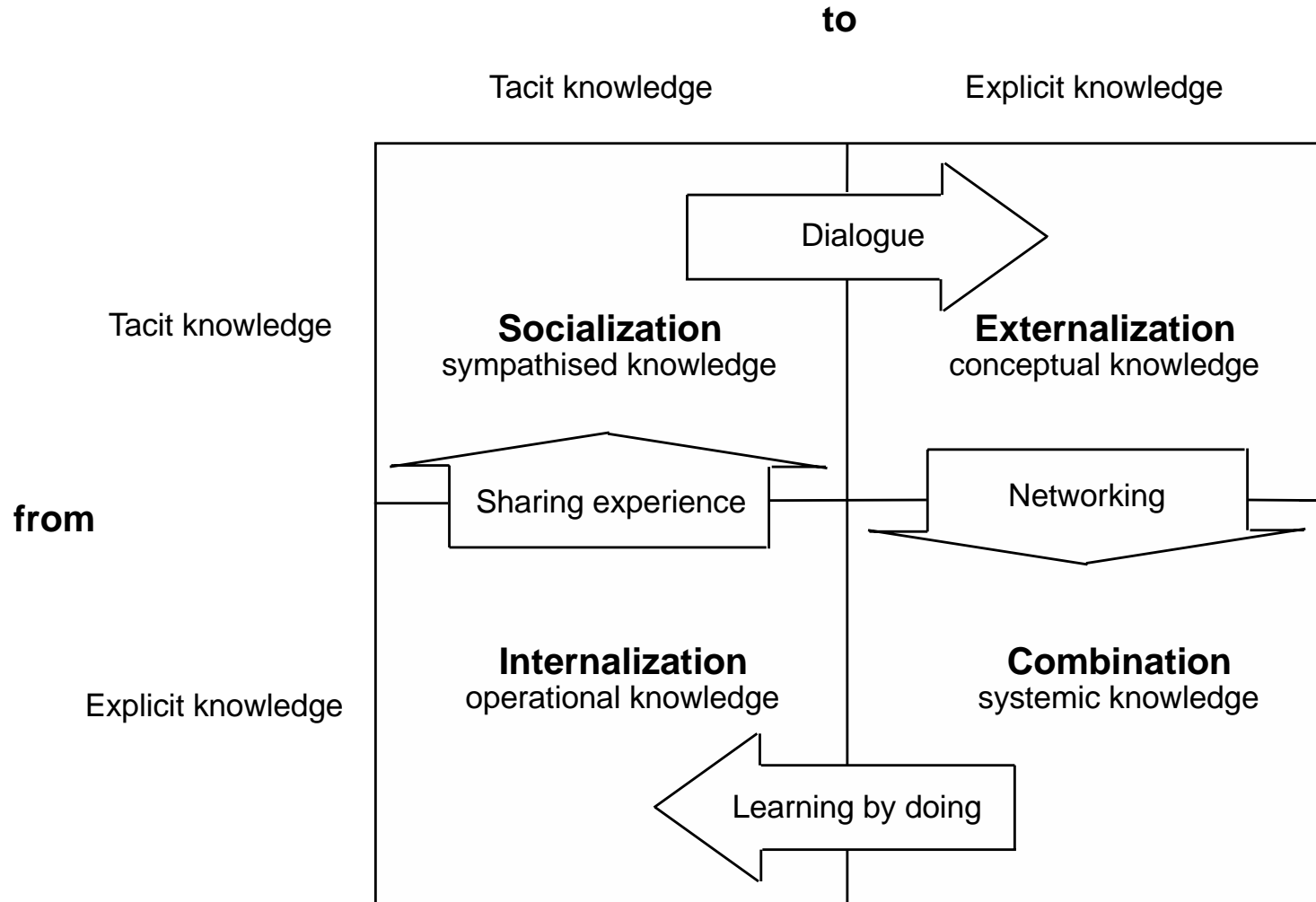
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- The nature of expertise in teaching
- Aristotle's main intellectual virtues
 - ▣ Episteme: knowledge of universal truths
 - ▣ Techne: ability to make things
 - ▣ Phronesis: practical wisdom
- What works is not the right question
 - ▣ Everything works somewhere
 - ▣ Nothing works everywhere
 - ▣ What's interesting is “under what conditions” does this work?
- Teaching is mainly a matter of phronesis, not episteme



Knowledge creation and conversion

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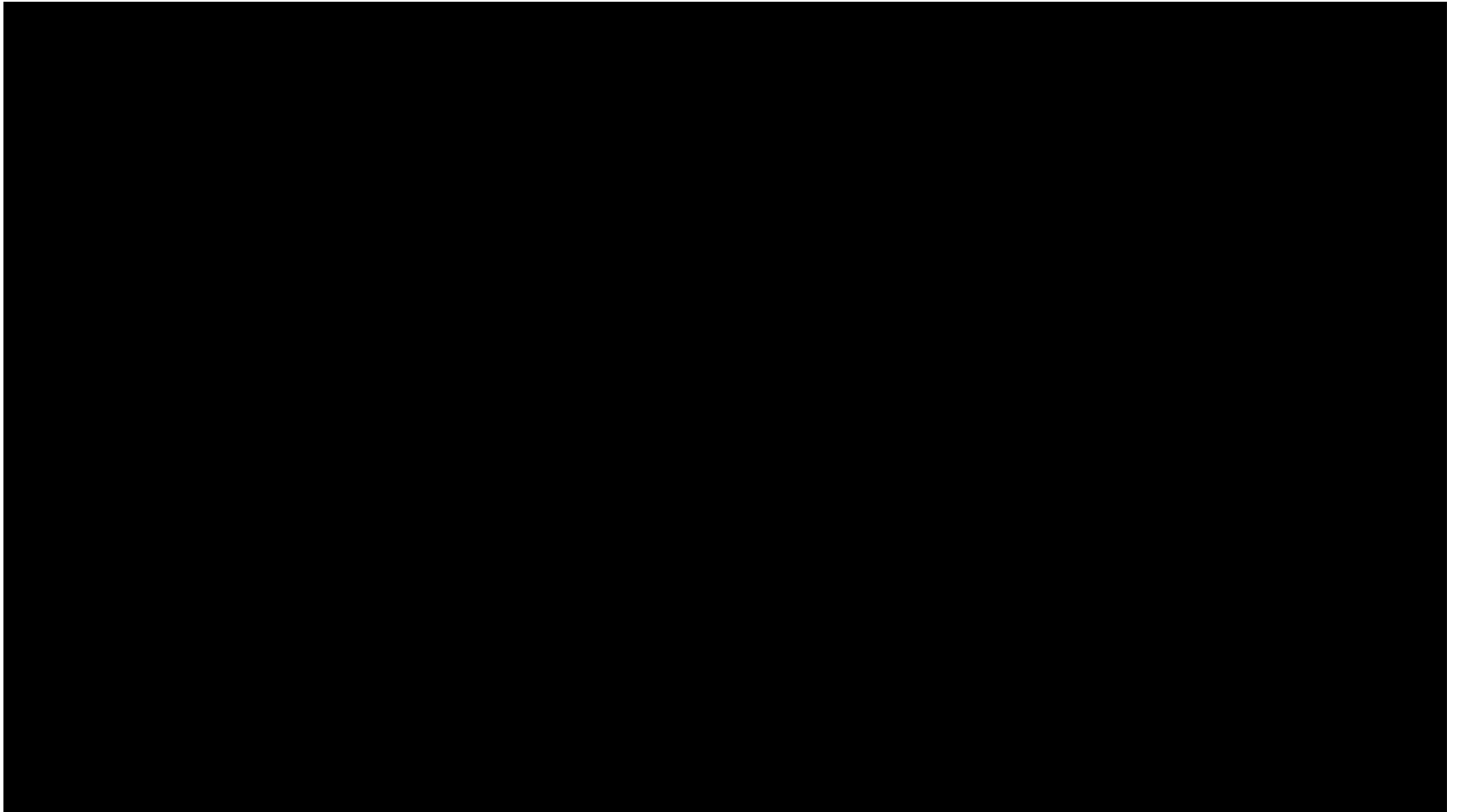
Nonaka and Takeuchi (1995)





The monkey business illusion...

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Changing, not sharing, practice

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- The knowing-doing gap
- Teachers don't need new ideas
- Teachers need support in implementing the ideas they already have



Accountability

Accountability

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- “To call for accountability is to assert a political right—to demand that a particular individual or institution assume some responsibility and demonstrate it in a certain form.” (Smith & Fey, 2000 p. 335)
- We can hold people accountable for
 - ▣ things they control (smart)
 - ▣ things they don’t control (not very smart)
- According to OECD, 6% of the variation in Swedish students’ PISA scores depends on the school they attend
- Holding teachers accountable for school results is not smart...



Support

Supportive accountability

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- What is needed from teachers:
 - ▣ A commitment to:
 - The continual improvement of practice
 - Focus on those things that make a difference to students
- What is needed from leaders:
 - ▣ A commitment to engineer effective learning environments for teachers by:
 - Creating expectations for continually improving practice
 - Keeping the focus on the things that make a difference to students
 - Providing the time, space, dispensation, and support for innovation
 - Supporting risk-taking



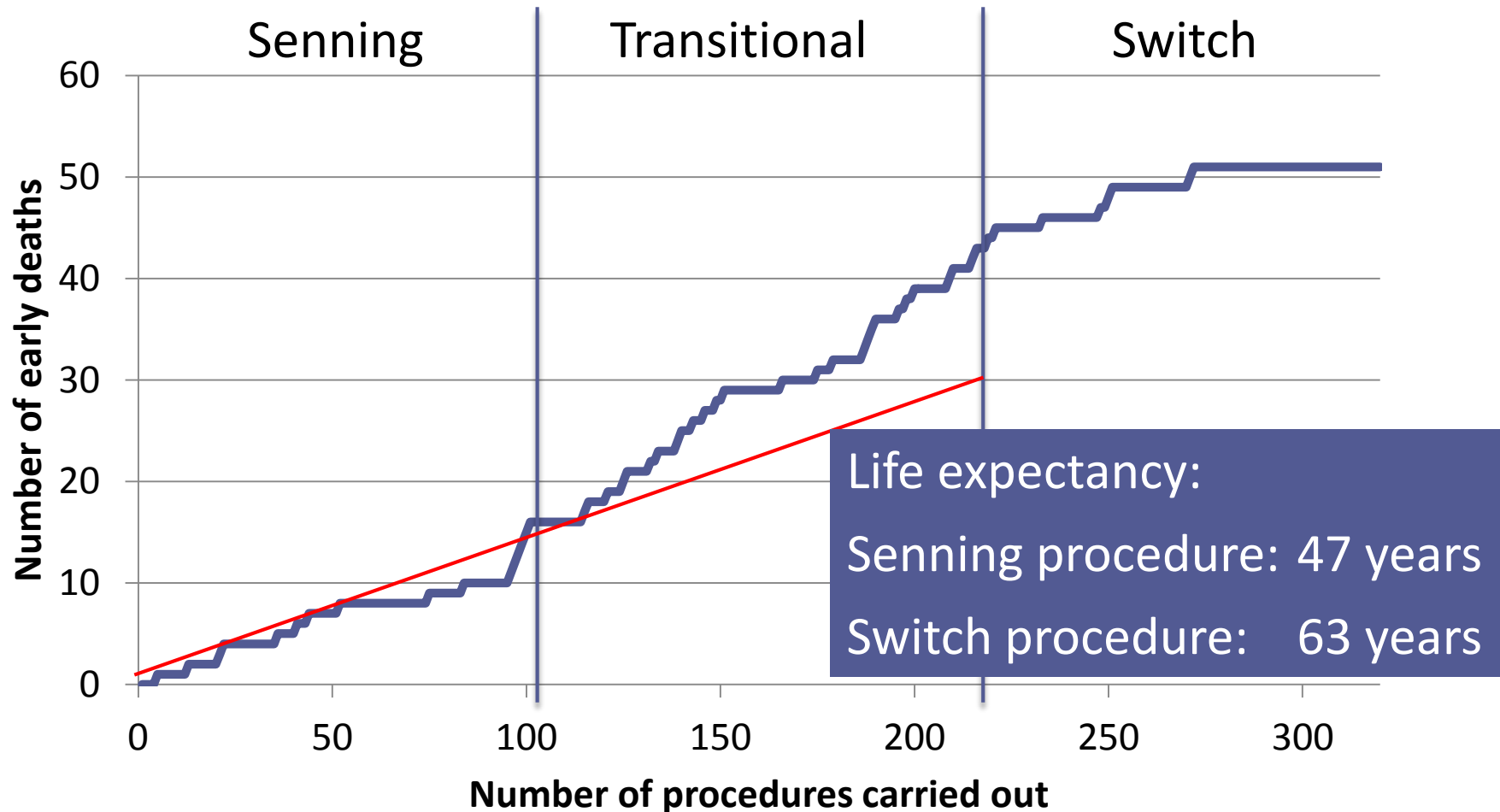
A case study in risk

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- Transposition of the great arteries (TGA)
 - A rare, but extremely serious, congenital condition in newborn babies (~25 per 100,000 live births) in which
 - the aorta emerges from the right ventricle and so receives oxygen-poor blood, which is carried back to the body without receiving more oxygen
 - the pulmonary artery emerges from the left ventricle and so receives the oxygen-rich blood, which is carried back to the lungs
 - Traditional treatment—the ‘Senning’ procedure which involves:
 - Creating a ‘tunnel’ between the ventricles, and
 - Inserting a ‘baffle’ to divert oxygen-rich blood from the left ventricle (where it shouldn’t be) to the right ventricle (where it should)
 - Prognosis
 - Early death rate (first 30 days): 12%
 - Life expectancy: 46.6 years

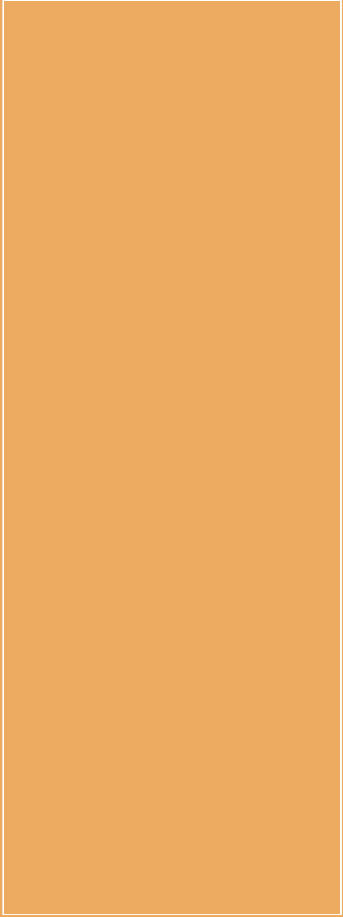


The introduction of the 'switch' procedure



Planning question:

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- 
- What are the most important things you can do to support teachers in taking risks to improve their teaching?

Professional learning communities

Be the change you want to see in the world

“Educators create a results orientation in their schools when they stop looking out the window for solutions to their problems and start looking in the mirror” (DuFour, Eaker & Du Four, 2005 p. 246)

“You control everything you need to control to make a difference in your students’ lives” (Lemov, 2010)



Why people shouldn't work on their own

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- Only 2% of high school seniors believe their leadership skills are below average (College Board, 1976/1977)
- ...and 25% of them believe they are in the top 1% in their ability to get along with others (College Board, 1976/1977)
- 93% of Americans and 69% of Swedes think they are above average drivers (Svenson, 1981)
- 94% of college professors report doing above average work (Cross, 1997)
- People think they are at lower risk than their peers for heart attacks, cancer, food poisoning, etc. (Weinstein, 1980)
- Strangers predict your IQ better than you do (Borkenau & Liebler, 1993)
- People believe they are more accurate than their peers at self-assessment (Pronin, Lin, & Ross, 2002)



What are professional learning communities?

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- Professional Learning Communities (PLCs) are “...an inclusive group of people, motivated by a shared learning vision, who support and work with each other, finding ways, inside and outside their immediate community, to enquire on their practice and together learn new and better approaches that will enhance all pupils’ learning.” (Stoll et al., 2006)
- PLCs therefore represent essentially any team-based approach to educational improvement



Defining PLCs

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- Professional
 - ▣ Decision-making under uncertainty
 - ▣ Accountable to a community of peers
- Learning
 - ▣ Focused on improvement in student outcomes
- Communities
 - ▣ Joint enterprise
 - ▣ Mutual engagement
 - ▣ Shared repertoire



Uses of school-based PLCs

- PLCs are likely to be effective for
 - ▣ Situations in which team-work is likely to be more effective than individual activity
 - Data-driven decision-making
 - Lesson study
 - ▣ Changes that require changing habits
 - Classroom formative assessment
- PLCs are likely to be less effective for
 - ▣ Changes that require acquisition of knowledge
 - ▣ Changes that are relevant to a small number of people



Complementary processes

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Instructional data teams

- Quality control
- Common assessments
- Improvement through better team work and systems
- Focus on individual outcomes for students
- Regular meetings focused on data
- 16 points on PISA (in two to three years)

Classroom FA TLCs

- Quality assurance
- Highly structured meetings
- Improvement through increased teacher capacity
- Focus on teachers' individual accountability for change
- Regular meetings focused on teacher change
- 30 points on PISA (in two to three years)

Teacher learning communities

Strategies for teacher change

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- Direct the rider
 - ▣ Follow the bright spots (volunteers vs. conscripts)
 - ▣ Script the critical moves (structured meetings)
 - ▣ Point to the destination (NCLB)
- Motivate the elephant
 - ▣ Find the feeling (the moral imperative)
 - ▣ Shrink the change (small steps)
 - ▣ Grow your people (all teachers can improve)
- Shape the path
 - ▣ Tweak the environment (time for teacher learning)
 - ▣ Build habits (create routines and structures)
 - ▣ Rally the herd (make new mistakes)



Teacher learning communities

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- Plan that the TLC will run for two years.
- Identify 10 to 12 interested colleagues:
 - ▣ Selection
 - Volunteers, or conscripts?
 - ▣ Composition:
 - Similar assignments (e.g., early years, math/science)
 - Mixed subject/mixed phase
 - Hybrid
- Secure institutional support for:
 - ▣ Monthly meetings (75–120 minutes each, inside or outside school time)
 - ▣ Time between meetings (two hours per month in school time):
 - Collaborative planning
 - Peer observation
 - ▣ Any necessary waivers from school policies



Membership of TLCs

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	Benefits	Risks
Volunteers	<p>Culture deepens quickly</p> <p>Appealing to 'keen' teachers</p>	<p>Treated as "additional" than "core"</p> <p>Non-volunteers left behind</p>
Conscripts	<p>Oppositional sub-culture less likely</p> <p>Differences in approach can be used to deepen conversations</p>	<p>'Project mentality' disconnected from practice</p> <p>Tokenistic adoption</p>



Signature pedagogies

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In Law

86



In Medicine

87



A “signature pedagogy” for teacher learning

88

- Every monthly TLC meeting should follow the same structure and sequence of activities:
 - ▣ Activity 1: Introduction and starter activity (5 minutes)
 - ▣ Activity 2: Introduction and starter activity (5 minutes)
 - ▣ Activity 3: Feedback (25–50 minutes)
 - ▣ Activity 4: New learning about formative assessment (20–40 minutes)
 - ▣ Activity 5: Personal action planning (15 minutes)
 - ▣ Activity 6: Review of learning (5 minutes)



Activities 1, 2, 3, 5, 6: “Bookends”

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- For each of these five activities, the process is exactly the same at each TLC meeting
- This provides a familiar structure for teachers to get better together
 - ▣ As the structure fades into the background,
 - ▣ The learning comes into the foreground
- Teachers come to the meeting knowing what is expected of them



Ground-rules for TLCs

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- Norms of collaboration (Garmston & Wellman, 1999)
- Seven powerful Ps
 - ▣ Pausing
 - ▣ Paraphrasing
 - ▣ Probing
 - ▣ Putting ideas on the table (and pulling them off!)
 - ▣ Paying attention to self and others
 - ▣ Presuming positive intentions
 - ▣ Pursuing a balance between advocacy and inquiry



Activity 1: Introduction

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- Sharing learning intentions for the meeting



Activity 2: Starter

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- A variety of warm-up activities to get participants' minds to the meeting:
 - Think of something you are looking forward to this year
 - 30 seconds to get “things off your chest” about what infuriates you about your job
 - 30 seconds to tell the group about something that happened within the last month and made you feel good
 - Think of something that happened in a lesson this year that made you smile
 - Think of something that one of your colleagues did last term that supported you
 - Go back to the TLC ‘ground rules’



Activity 3: Feedback

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- Routines need to be established, expectations shared, and structure maintained.
- Similar expectations regarding preparation and engagement.
 - Come to the meeting knowing you will be sharing your own formative assessment experiences.
 - Be prepared to offer constructive, thoughtfully conceived feedback to colleagues.
 - Be prepared to challenge ideas that may be good classroom practice but are not necessarily tightly related to formative assessment.



Activity 4: New learning about formative assessment

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- ‘Drip-feed’ of new ideas, to increase knowledge, and to produce variety
 - ▣ Watch videos of classroom practice
 - ▣ Book study (e.g., one chapter each month)
 - ▣ New formative assessment techniques



Activity 5: Personal action planning

95

- Each teacher updates his or her personal action plan
- Makes a specific commitment about what they will do over the coming month
- Arranges any support needed from colleagues
 - ▣ Specific date and time for peer observation



Activity 6: Wrap

96

- Did the meeting meet its intended objectives
 - ▣ If yes, great
 - ▣ If no, time to plan what to do about it



Every TLC needs a leader

97

- The job of the TLC leader(s):
 - ▣ To ensure that all necessary resources (including refreshments!) are available at meetings
 - ▣ To ensure that the agenda is followed
 - ▣ To maintain a collegial and supportive environment
- But most important of all:
 - ▣ It is not to be the formative assessment “expert.”



Peer observation

98

- Run to the agenda of the observed, not the observer:
 - ▣ Observed teacher specifies focus of observation:
 - E.g., teacher wants to increase wait time.
 - ▣ Observed teacher specifies what counts as evidence:
 - Provides observer with a stopwatch to log wait times.
 - ▣ Observed teacher owns any notes made during the observation.



Making time to “sharpen the saw”

A case study in one district

100

- Cannington
 - ▣ Urban school district serving ~20,000 students
 - ▣ Approximately 20% of the population non-white
 - ▣ No schools under threat of re-constitution, but all under pressure to improve test scores

- Funding for a project on “better learning through smarter teaching”
 - ▣ Focus on mathematics, science and modern foreign languages (MFL)
 - ▣ Commitment from Principals in November 2007
 - ▣ Initial workshops in July 2008



Progress of TLCs in Cannington

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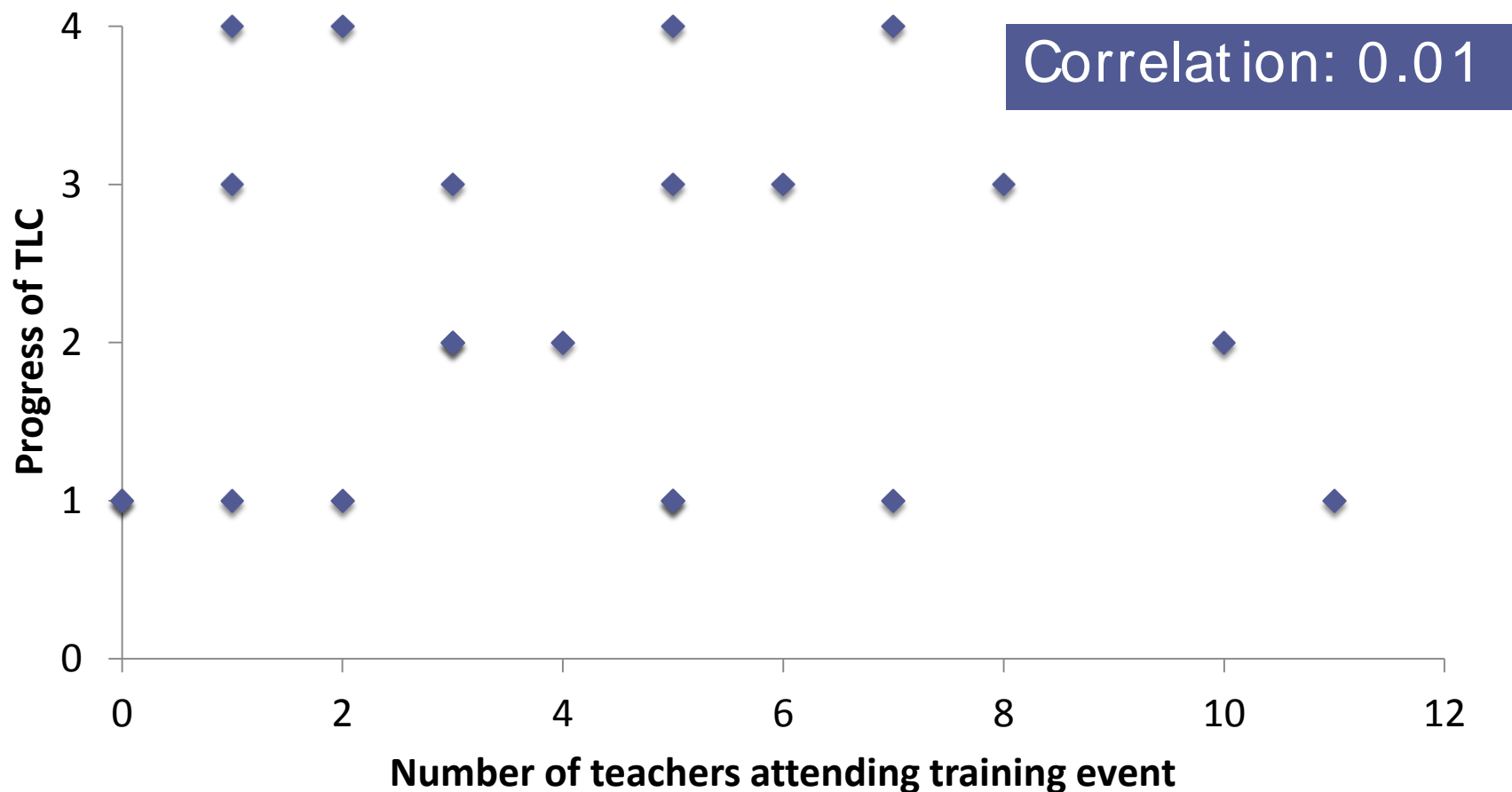
	Maths	Science	MFL
Ash	1 —	1 —	0 —
Cedar	5 ■	1 ■	3 ■■
Hawthorne	4 ■■	10 ■■	5 ■■■■
Hazel	7 —	12 —	2 —
Larch	1 ■■■■	0 ■	0 ■
Mallow	6 ■■■	7 ■	3 ■■
Poplar	11 ■	3 ■■■	1 ■■■
Spruce	7 ■■■■	8 ■■■	5 ■■■
Willow	2 ■	5 ■	2 ■■■■
Totals	44	47	21

Black nos. show teachers attending launch event; blue bars show progress of TLC



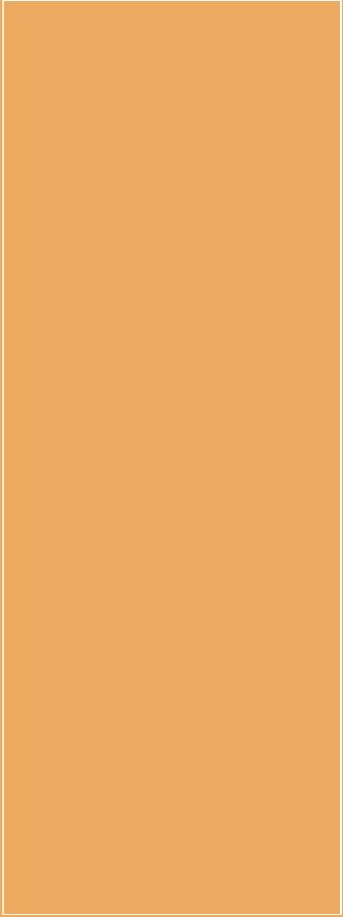
Progress of TLCs in Cannington

102



Planning Question:

103

- 
- What activities within your control will you give up or do less of to make formative assessment a priority?

How will we know if it's working?

We'll know when it's working when...

105

- Leading indicators of success
 - ▣ Teachers are given time to meet, and do so
 - ▣ Teachers increasingly act as “critical friends” to others
 - ▣ The prevalence of classroom formative assessment practices is increasing
 - ▣ Students are more engaged in classrooms
 - ▣ Teachers modify the techniques in appropriate ways, indicating an understanding of the underlying theory
 - ▣ There is a shift in the ownership of the reform
- Lagging indicators of success
 - ▣ Increased student achievement



Possible foci for “Learning walks”

106

Foci	Rating
<ul style="list-style-type: none">❑ Clear, valuable learning intentions for lesson❑ Success criteria understood by students❑ Students chosen at random❑ Questions that make students think❑ Students, not teacher, dominate discussions❑ At least 80% students involved in answering questions❑ All-student response system used❑ Teacher waits three seconds after question❑ Students support each others' learning❑ Students take responsibility for own learning❑ Teacher gives oral formative feedback❑ Evidence of comments that advance learning❑ Teacher finds out what students learned❑ Teaching adjusted after data collection	<ul style="list-style-type: none">❑ Exemplary practice❑ Good practice❑ Seen, but weak❑ Non-existent❑ Used inappropriately

Key stakeholders' reactions

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- Departmental sub-cultures
- Unions
- Professional associations
- Teaching assistants
- Parents
- School Board members
- Community leaders



Managing disappointments

108

- ❑ Failure: opportunity for learning or blame
- ❑ Falling down: failing or learning?
- ❑ High-reliability organizations embrace failure
- ❑ \$1m dollar club
- ❑ “A complaint is a gift”
- ❑ Group-work is hard for teachers, ... and for teachers of teachers...



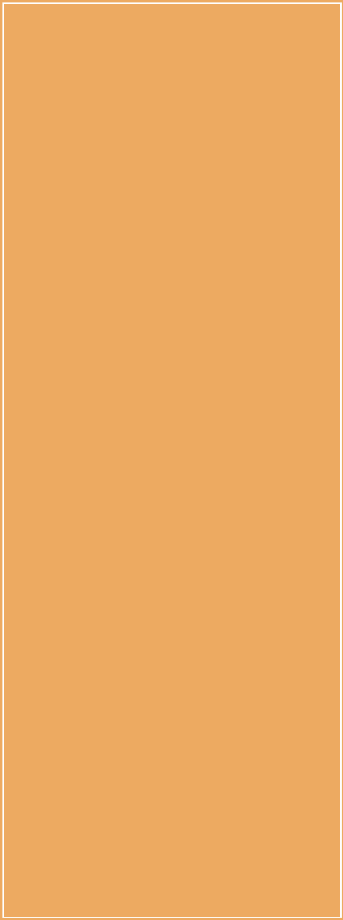
Planning Question:

109

- 
- What will you do to assess how this is working?

Final Planning Question:

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- 
- **Pulling all your conversations together, what critical action steps will engage staff in this work? Where do you want to start?**

Thank You

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