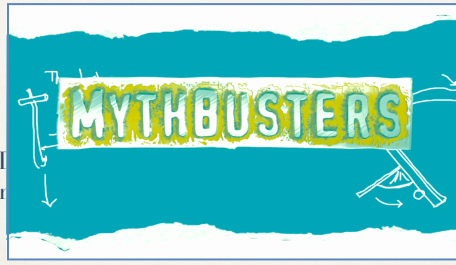




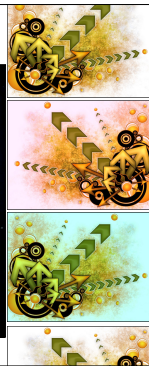
Curiosity and Powerful Learning

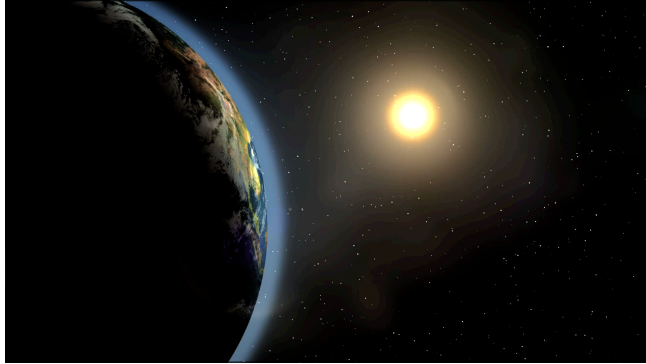
Professor David Hopkins



Exploding the Myths: Art or Science?

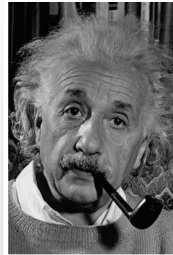
The Right Direction





Curiosity matters...academic success...
job performance...
relationships...
life satisfaction...
problem-solving...
longevity...

“Curiosity is a delicate little plant,
which aside from stimulation,
stands mainly in need of freedom”



If we want our students to be **CURIOUS**,
we have to teach them



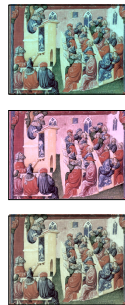
Curiosity and Powerful Learning

Professor David Hopkins

THE CHALLENGES OF THE FUTURE



1350 - Classroom at the University of Bologna, Laurentius de Voltolina





To meet the needs of our students, we need to do better



Privatised, atomised practice cannot be improved at scale



The workload associated with improved practice is too great for individual teachers

THE CHALLENGES OF THE FUTURE

THE CHALLENGES OF THE FUTURE

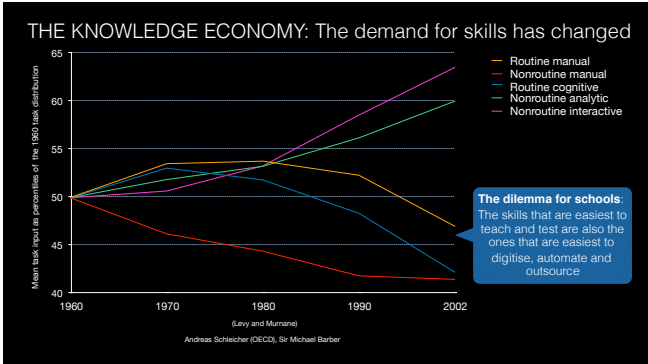
A new perspective is required..what does effective learning mean today

Learning in School, University and Work
Formal: When, where, how and with whom is predetermined
Individual: We demonstrate our understanding and skills alone
Linear: Learners follow a "sequential" program according to the curriculum
Just in case: Knowledge acquisition precedes actions
Tutor-to-student: One expert, few learners
Transmissive: Teacher transmits (usually through lectures), students receive

Learning Socially
Informal: We learn when, where and with whom we please
Social: We study and demonstrate our understanding in groups
Non-linear: Learners follow non-sequential routes according to interests
Just in time: Knowledge is gained as the task demands
Networked: The expertise is in the crowd
Experiential: Meaning is made and shared by experience

Achievement AND Growth?







LIFESCRIPTS...
our story to make sense of the world

In childhood we start to create stories about our lives, what they have been and what they will be

Over time we develop a narrative about what we can and will do

Life scripts can be very detailed or very vague

They can be **very empowering**, yet they can also **severely limit our lives**



LIFESCRIPTS

our story to make sense of the world

Understanding life scripts gives us the ability to change them

The aptitudes and skills of powerful learners are the tools for change





POWERFUL LEARNERS...

POWERFUL LEARNERS...

- **acquire** useful and important bodies of knowledge
- **become** powerful learners by expanding and making articulate their repertoire of learning strategies
- **become** fine, caring and principled citizens

POWERFUL LEARNERS...

- **integrate** prior and new knowledge
- **acquire and apply** a range of learning skills
- **solve problems** individually and in groups
- **learn** from their successes AND failures
- **evaluate** conflicting evidence
- **think** critically
- **accept** uncertainty and difficulty

How would we rate the "typical" student at our school on:

OUR STUDENTS AS POWERFUL LEARNERS...

- **integrating** prior and new knowledge - what is the evidence?
- **acquiring and applying** a range of learning skills - what are the learning skills and how do students acquire them?
- **solving problems** individually and in groups - how much problem solving is done individually and in groups?
- **learning** from their successes AND failures - how do we celebrate success and failure?
- **evaluating** conflicting evidence - what structures do we have in place to support our students in this area?
- **thinking** critically - is our work on critical thinking effective?
- **accepting** uncertainty and difficulty - what structures do we have in place to support our students in this area?



"What these high performing systems (and schools) do is focus relentlessly on:
ensuring high instructional quality
 while
reducing variability in the quality of instruction for every student"





The same high-quality learning experiences...
 EVERY classroom...
 EVERY day...
 EVERY school

THE INSTRUCTIONAL ROUNDS PROCESS WORKS LIKE THIS

Rounds visit to focus on teaching and learning in the school

Small groups visit a rotation of classes and descriptive evidence is gathered

Analyse evidence taking into account school context

Develop Theories of Action

Visitors provide structured feedback to school and teachers

Host school uses the Theories of Action as a basis for planning ongoing professional development.

FIVE LESSONS FROM INSTRUCTIONAL ROUNDS

- 1 **Similar Theories of Action** are defined and implemented in **most schools**, despite differences in schooling phases and contexts
- 2 This is not a **"pick and mix"** approach. It's necessary to integrate all Theories of Action into a teacher's professional repertoire
- 3 All Theories of Action are characterised by teaching approaches with **inquiry at their centre**
- 4 Some Theories of Action are about the **whole school**, and some are about the **individual practice** of teachers
- 5 All Theories of Action have a high level of **empirical support** in the research literature.



THE STORY OF OUR INSTRUCTIONAL ROUNDS

Instructional Rounds

02

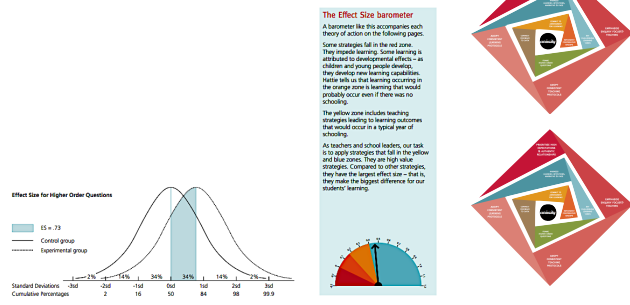
FIVE LESSONS FROM INSTRUCTIONAL ROUNDS

- 1 **Similar Theories of Action** are defined and implemented in **most schools**, despite differences in schooling phases and contexts
- 2 Not '**pick and mix**' approach - all Theories of Action are part of a teacher's professional repertoire
- 3 **Inquiry is central** to all the Theories of Action
- 4 Some Theories of Action are about the **whole school**, and some are about the **individual practice** of teachers
- 5 All Theories of Action have a high level of **empirical support** in the research literature.

As a result of our “inside-out” work on Instructional Rounds we have identified ten Theories of Action for the Teacher

- Promote curiosity, Enquiry, Expectations & Authentic Relationships
- Emphasise Enquiry Focused Teaching
- Adopt Consistent Teaching Protocols
- Adopt Consistent Learning Protocols
- Harness Learning Intentions, Narrative & Pace
- Set Challenging Learning Tasks
- Frame Higher Order Questions
- Connect Feedback to Data
- Commit to Assessment for Learning
- Implement Cooperative Groups

CURIOSITY & POWERFUL LEARNING: EFFECT SIZE



Four Whole School Theories of Action

Prioritise High Expectations & Authentic Relationships
 If schools and teachers prioritise high expectations and authentic relationships, then curiosity will flourish

Emphasise Enquiry Focused Teaching
 If enquiry is a defining characteristic of a school's culture, then the level of student achievement and curiosity will increase

Adopt Consistent Teaching Protocols
 If we adopt consistent teaching protocols, then student behaviour, engagement, learning and curiosity will be enhanced

Adopt Consistent Learning Protocols
 If we adopt consistent learning protocols in all classes, then all students will experience an enhanced capacity to learn, and to develop skills, confidence and curiosity

Effect Size
The Effect Size for high expectations is 0.33 - in the zone of teacher effect.

Effect Size
The Effect Size for enquiry focused teaching is 0.25 - in the zone of teacher effect.

Effect Size
The Effect Size for consistent teaching protocols is 0.25 - in the zone of teacher effect.

Effect Size
The Effect Size for consistent learning protocols is 0.25 - in the zone of teacher effect.

Effect Size
The Effect Size for learning intentions is 0.18 - in the zone of teacher effect.

Effect Size
The Effect Size for narrative & pace is 0.25 - in the zone of teacher effect.

Effect Size
The Effect Size for challenging tasks is 0.25 - in the zone of teacher effect.

Effect Size
The Effect Size for higher order questions is 0.25 - in the zone of teacher effect.

Effect Size
The Effect Size for feedback to data is 0.25 - in the zone of teacher effect.

Effect Size
The Effect Size for assessment for learning is 0.25 - in the zone of teacher effect.

Effect Size
The Effect Size for cooperative groups is 0.25 - in the zone of teacher effect.

Six Theories of Action for the Teacher

Harness Learning Intentions, Narrative & Pace
 If we harness learning intentions, narrative and pace so students are more secure about their learning, and more willing to take risks, then achievement and understanding will increase and curiosity will be enhanced

Set Challenging Learning Tasks
 If learning tasks are purposeful, clearly defined, differentiated and challenging, then all students will experience powerful, progressive and precise learning

Frame Higher Order Questions
 If we systematically employ higher order questioning, then levels of student understanding will deepen and levels of achievement will increase

Connect Feedback to Data
 If we connect feedback to data about student actions and performance, then behaviour will be more positive, progress will accelerate, and curiosity will be enhanced

Commit to Assessment for Learning
 If we commit to peer assessment, and assessment for learning, then student engagement, learning and achievement will accelerate

Implement Cooperative Groups
 If we implement cooperative group structures and techniques to mediate between whole class instruction and students carrying out tasks, then the academic performance of the whole class will increase

How students think and learn		
Number	Principle	Curiosity & Powerful Learning
1	Students' beliefs or perceptions about intelligence and ability affect their cognitive functioning and learning	Moral purpose
2	What students already know affects their learning	Learning intentions, challenging tasks
3	Students' cognitive development and learning are not limited by general stages of development	Learning intentions, challenging tasks
4	Learning is based on context, so generalising learning to new contexts is not spontaneous but instead needs to be facilitated	Inquiry, challenging tasks, assessment for learning, feedback to data

How students think and learn



Number	Principle	Curiosity & Powerful Learning
5	Acquiring long-term knowledge and skill is largely dependent on practice	<i>Teaching and learning protocols</i>
6	Clear, explanatory, and timely feedback to students is important for learning	<i>Connect feedback to data, assessment for learning</i>
7	Students self-regulation assists learning, and self-regulatory skills can be taught	<i>Learning protocols</i>
8	Student creativity can be fostered	<i>Inquiry, challenging tasks, assessment for learning, feedback to data</i>

CURIOSITY AND POWERFUL LEARNING

DAVID HOPKINS AND WAYNE CRAIG with the authors

Select strategies

02

Assessment against theories of action
Teaching and Learning Protocols

THEORIES OF ACTION	No systematic whole school adoption	Limited, opportunistic whole school adoption	Some systematic whole school adoption & review	Systematic whole school adoption & review	WHAT IS THE EVIDENCE?
PROMOTE HIGH EXPECTATIONS & AUTHENTIC RELATIONSHIPS WHEN schools & teachers promote high expectations & authentic relationships THEN consistency will flourish					
EMPHASISE INQUIRY WHEN inquiry is a defining characteristic of a school's culture THEN the level of student achievement & curiosity will increase					
ADOPT CONSISTENT TEACHING PROTOCOLS WHEN we adopt consistent teaching protocols THEN student behaviour, engagement, learning & curiosity will be enhanced					
ADOPT CONSISTENT LEARNING PROTOCOLS WHEN we adopt consistent learning protocols in all classes THEN all students will experience an enhanced capacity to learn, & to develop skills, confidence, & curiosity					

THEORIES OF ACTION

Free teachers know, use & review this practice

Some teachers know, use & review this practice

Most teachers know, use & review this practice

All teachers know, use & review this practice

WHAT IS THE EVIDENCE?

HARNESS LEARNING INTENTIONS, NARRATIVES, & RACE
WHEN we harness learning intentions, narratives, & race so teachers are more aware about their learning, & more willing to take risks
THEN achievement & understanding will increase & curiosity will be enhanced

SET CHALLENGING LEARNING TASKS
WHEN learning tasks are purposeful, cognitively-demanding, & open-ended
THEN all students will experience powerful, purposeful & precise learning


FRAME HIGHER ORDER QUESTIONS
WHEN we systematically employ higher order questioning
THEN levels of student understanding will increase & levels of achievement will increase

CONNECT FEEDBACK TO DATA
WHEN we connect feedback to data about student actions & performance
THEN behaviour and learning practices will be enhanced & curiosity will be enhanced

COMMIT TO ASSESSMENT FOR LEARNING
WHEN we commit to peer assessment, & assessment for learning
THEN student engagement, learning, & achievement will be enhanced

IMPLEMENT COOPERATIVE GROUPS
WHEN we implement cooperative group structures & techniques to provide frequent high-quality interaction
THEN the academic performance of the whole class will increase

Assessment against the six teacher theories of action



Our Theories of Action

The key to precise practice

Common Practice



Idiosyncratic	What and when (but not how) planned in teams	Colleagues a major influence particularly in the early years
Delivered by individuals	Significantly influenced by how the teacher was taught	On the job learning (from mistakes)
Limited use of evidence base	Minimally impacted by teacher training	Limited and haphazard use of technology

THEORIES OF ACTION ARE...

tactics

teacher behaviours that have a direct and precise impact on student learning

specific actions that respond to specific classroom circumstances



MODELS OF PRACTICE...

describe the approach for an entire lesson or curriculum unit

Abridge to PRECISION

✓ Based on research

✓ Highly effective

- assures knowledge growth
- effect sizes of 0.7+

Models of Teaching

Models of Practice

Tools for Teaching

Models for Learning

✓ Provide students with lifelong learning tools

- Whole Class Instruction
- Cooperative Group Work
- Inductive Teaching
- Mnemonics
- Concept Attainment
- Synectics

✓ Precise and new ways of using technology

Models of Teaching

Models of teaching simultaneously define:

- the nature of the content
- the learning strategies
- the arrangements for social interaction that create the learning environments of students

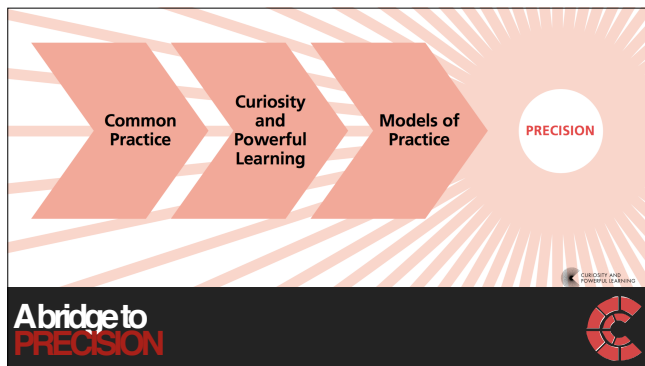
and

Models of Learning

Models of teaching are also models of learning

How teaching is conducted has a large impact on students' abilities to educate themselves

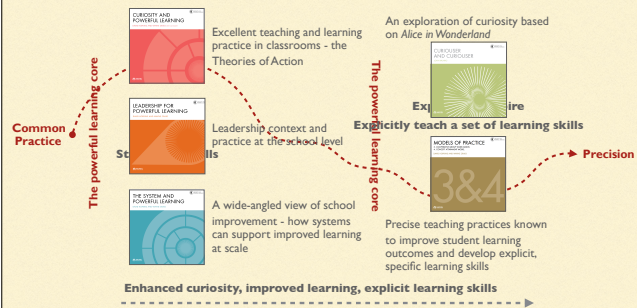
Model of Practice	Learning Skills
Direct Instruction	<i>Extracting information and ideas from lectures and presentations</i>
Cooperative Group Work	<i>Working effectively with others to initiate and carry out cooperative tasks</i>
Inductive Teaching	<i>Building hypotheses and theories through classification</i>
Mnemonics	<i>Memorising information</i>
Concept Attainment	<i>Attaining concepts and how to invent them</i>
Syntectics	<i>Using metaphors to think creatively</i>





TECHNICALLY SIMPLE...
we know what works







SOCIALLY COMPLEX...
most teachers, most of the time, most
classrooms, most schools?

Circles of Competence




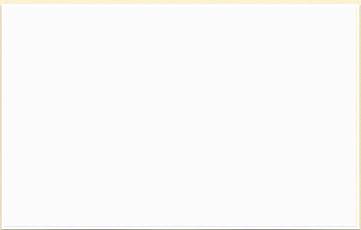
NON-TECHNICAL PROFESSION
NON-TECHNICAL PROFESSION
NON-TECHNICAL PROFESSION
NON-TECHNICAL PROFESSION
STRATEGY

The Ring of Confidence

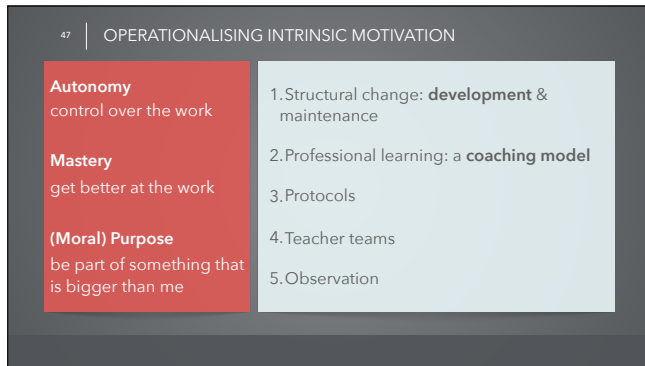


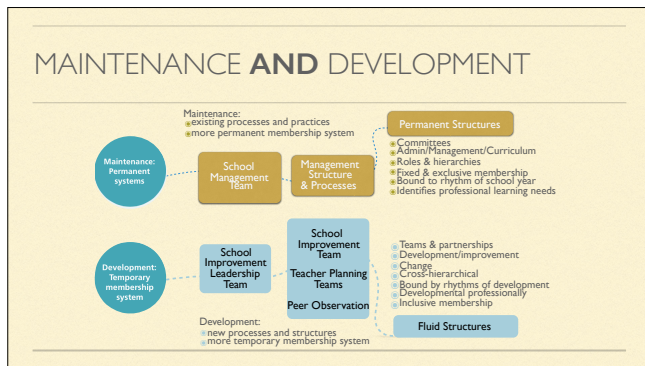
BUILDING EFFECTIVE PRACTICE...
intrinsic motivation as the catalyst

INTRINSIC MOTIVATION
DAN PINK (DRIVE, 2009)















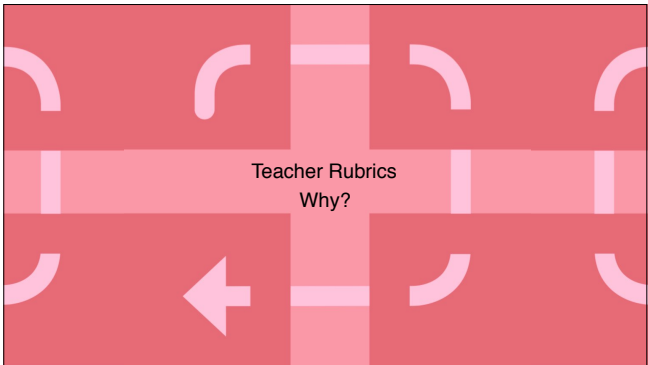



PROFESSIONAL LEARNING: A COACHING MODEL

PROFESSIONAL LEARNING: EFFECT SIZES FOR TRAINING OUTCOMES BY TRAINING COMPONENT

Training components and combinations	Knowledge	Skills	Transfer of training
Information	0.63	0.35	0.00
Theory	0.15	0.50	0.00
Demonstration	1.65	0.26	0.00
Theory + Demonstration	0.66	0.86	0.00
Theory + Practice	1.15		0.00
Theory + Demonstration + Practice		0.72	0.00
Theory + Demonstration + Practice + Feedback	1.31	1.18	0.39
Theory + Demonstration + Practice + Feedback + Coaching	2.71	1.25	1.68

Adapted from Joyce and Showers, 1995





Teacher Rubrics

Four purposes for teachers

- Clearly set out the habits, behaviours, and performance expectations of high quality teaching
- Support personal reflection by teachers about where their practice falls on the continuum
- Provide a common reference point and language for teachers and school leaders when discussing teaching practice and performance
- Inform planning for professional learning and development

Three outcomes for students

ENSURING MASTERY	Teachers plan with an unrelenting focus on high standards to ensure all students achieve mastery
CONTINUAL DEVELOPMENT	Every action and every communication is focussed on the individual student's ability to constantly grow and improve
LONGEVITY	All students set and achieve their goals, and all students are ready for post-school education and employment

THE RUBRICS ARE FLEXIBLE

We encourage teachers and school leaders to adapt the rubrics to suit changing circumstances

THE RUBRICS ARE ABOUT PROFESSIONAL DEVELOPMENT

The rubrics provide tools for situating and evaluating current practice and mapping a pathway for productive improvement


THE RUBRICS ARE TOOLS FOR ACHIEVING PROFESSIONAL MASTERY

Using a common language and structure, the rubrics support professional conversations and collective inquiry

THE RUBRICS ARE ABOUT PROFESSIONAL PRACTICE

They are about what we do as teachers
And they are realistic

Teacher Rubrics



Teacher is aware of strategies that create challenge in the classroom.

- Tasks allow many students to extend challenge while still meeting success criteria.
- Teacher uses subject specific language to explain concepts.
- Some students use subject specific language to explain concepts.
- Some students use their position and display of task behaviour.
- A majority of students engage in higher level cognitive tasks.

CHALLENGING TASKS

- Teacher sets low level cognitive tasks that are addressing repeat, reproduce, recall, or identify.
- Students are occasionally asked to develop or apply their thinking.

Teacher uses teaching strategies that are usually reserved to meet students' needs.

- Most tasks are differentiated and are within the 2SD for all students.
- All students demonstrate mastery through task choice.
- Students are able to negotiate between their current performance and the desired performance.

Teacher uses well-judged and often inspirational teaching strategies. Students learn independently and interdependently.

- All tasks are precisely targeted.
- Each student makes progress from expected progress.
- All students understand the desired learning outcome and regulate their performance against it.
- Students are engaged by, and able to complete, tasks that require them to find contradictions or tensions or knowledge and to resolve assumptions in knowledge.
- Students know subject specific language and use it to show their thinking.
- Students confidently discuss ideas, challenge and generate new knowledge.
- Students know the accuracy and expertise to monitor their learning. They ask questions and work independently on increasingly complex tasks.

Teacher matches teaching strategies to most students' needs.

- Most tasks are differentiated and are within the 2SD for all students.
- All students demonstrate mastery through task choice.
- Students are able to negotiate between their current performance and the desired performance.
- Students are encouraged and supported to use subject-specific language to monitor their thinking.
- Students are able to perform high level cognitive tasks, such as analysing, justifying, applying, and evaluating.

Teacher Rubrics Challenging Tasks

TEACHER TEAMS

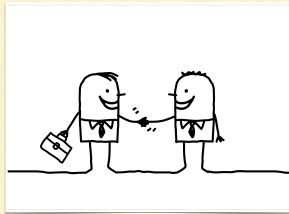


Teams of teachers responsible for cohorts of students rather than individual teachers responsible for one class

Planning the “how” of teaching rather than just the “what” and “when”

TEACHER TEAMS

- Teacher - student relationships are much stronger and *teacher effectiveness is enhanced*
- Professional development occurs as part of the planning and teaching process and is *visible to all*
- There is built-in *accountability*
- There is greater *flexibility* to accommodate individual student needs
- Planning is *more effective*

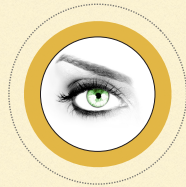


TEACHER TEAMS



Teacher Observation...

peers

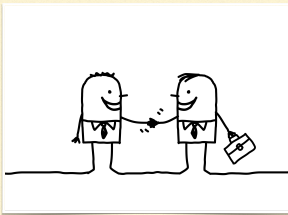


Teacher Observation...

The problems with observation

- It usually becomes personal
- We absolutely know what we like
- Strong emotional response to particular behaviours/styles is hard to over-rule
- We focus on observable proxies for learning
- Learning is invisible
- Preferences for particular pedagogies are widely shared, but evidence and understanding of their effectiveness is limited
- We think learning depends on what the teacher does
- We assume that if you can do it, you can spot it
- We don't believe observation can miss so much

PEER OBSERVATION



Teams of teachers developing professional practices that:

- emphasise non-judgmental peer observation
- support through triads

AND

- are disciplined by clear definitions and protocols
- will develop professional practices that have a predictable impact on student learning and achievement

FIVE CONDITIONS FOR BUILDING INTRINSIC MOTIVATION AMONG TEACHERS

Our School

1 Maintain structures for scaffolding teacher development

Not in place 0 1 2 3 4 In place

2 Make peer coaching ubiquitous

Not in place |-----|-----|-----|-----| In place

3 Create protocols for both teaching and learning

Not in place |-----| In place

4 Incentivise teacher teams

Not in place |-----| In place

5 Ensure classroom observation focuses on learning

Not in place |-----|-----|-----|-----| In place

ADAPTIVE
Leadership & US

CURIOSITY
& POWERFUL LEARNING



David Hopkins

David Hopkins is Professor Emeritus at the Institute of Education University College London and Chair of Educational Leadership at the University of Bolton.

He is a Trustee of Outward Bound and the charity 'Adventure Learning Schools'. David holds visiting professorships at the Catholic University of Santiago, the Chinese University of Hong Kong and the Universities of Cumbria, Edinburgh, Melbourne and Wales and consults internationally on school reform. Between 2002 and 2005 he served three Secretaries of States as the Chief Adviser on School Standards at the Department for Education and Skills.

Previously, he was Chair of the Leicester City Partnership Board and Dean of the Faculty of Education at the University of Nottingham. Before that again he was a Tutor at the University of Cambridge Institute of Education, a Secondary School teacher and an Outward Bound Instructor.

David is also an International Mountain Guide (retired) who despite two new knees still climbs and skis in the Alps and Himalayas. His recent book *Exploding the Myths of School Reform*, completes his school improvement trilogy; the previous two books being, *Every School a Great School* and *School Improvement for Real*. David was recently ranked the 16th most influential educator in the world by the American based Global Gurus organisation.

