A Summary of Professor John Hattie's Visible Learning Research & its Implications for Teaching Practice

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Session Aims:

By the end of this introductory session participants will:

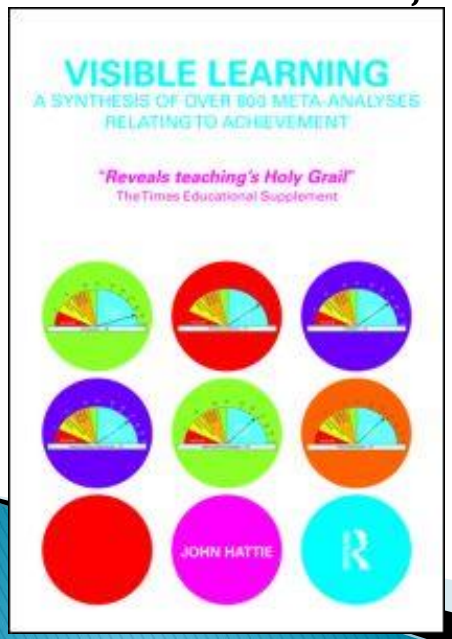
- Understand in general terms the methodological basis of Professor Hattie's research (e.g., Meta-analysis).
- Appreciate the importance of evidence based or informed knowledge to inform applied practice.
- Know and understand some of the key findings from Professor Hattie's research.
- Have begun the process of reflecting on some of the implications of the findings for their teaching practice.

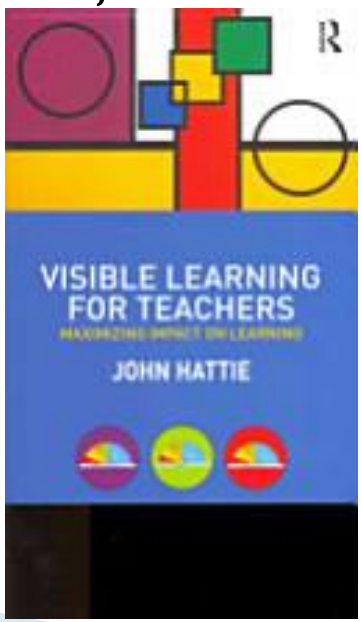
Michael Fullan

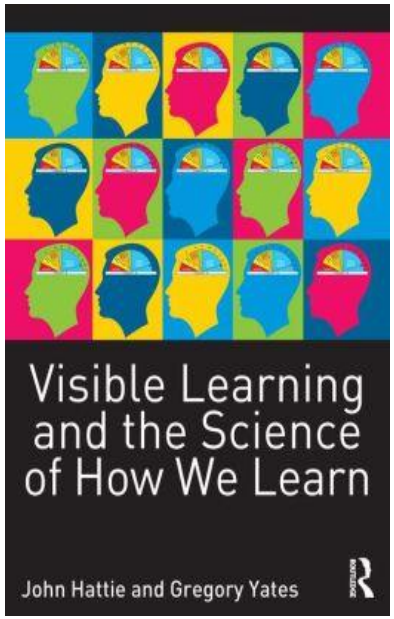
According to noted change-theory expert Michael Fullan, one of the most critical problems our schools face is 'not resistance to innovation, but the fragmentation, overload and incoherence resulting from the uncritical and uncoordinated acceptance of too many different innovations (1991).

Visible Learning

- Visible Learning
- Dr. John Hattie
- Professor of Education and Director of the Melbourne Education Research Institute at the University of Melbourne, Australia,







Professor John Hattie

- John Hattie has been Director of the Melbourne Educational Research Institute at the University of Melbourne, Australia, since March 2011.
- Before, he was Project Director of asTTle and Professor of Education at the University of Auckland, New Zealand.
- He holds a PhD from the University of Toronto, Canada.

What is Visible Learning?

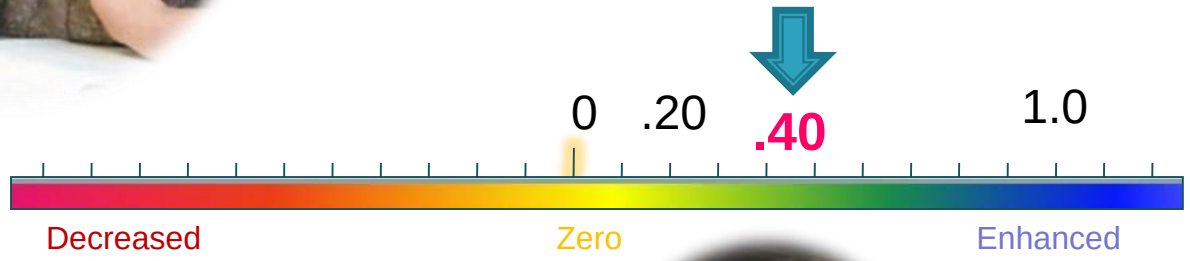
- **Visible Learning** is the result of over 15 years' of research and synthesises of over 800 meta-analyses (about 50,000 individual studies) relating to the **influences on achievement in school-aged students**.
- It presents the largest ever collection of evidence-based research into what actually works in schools to improve learning (and what doesn't).

Meta-analysis & Effect Size

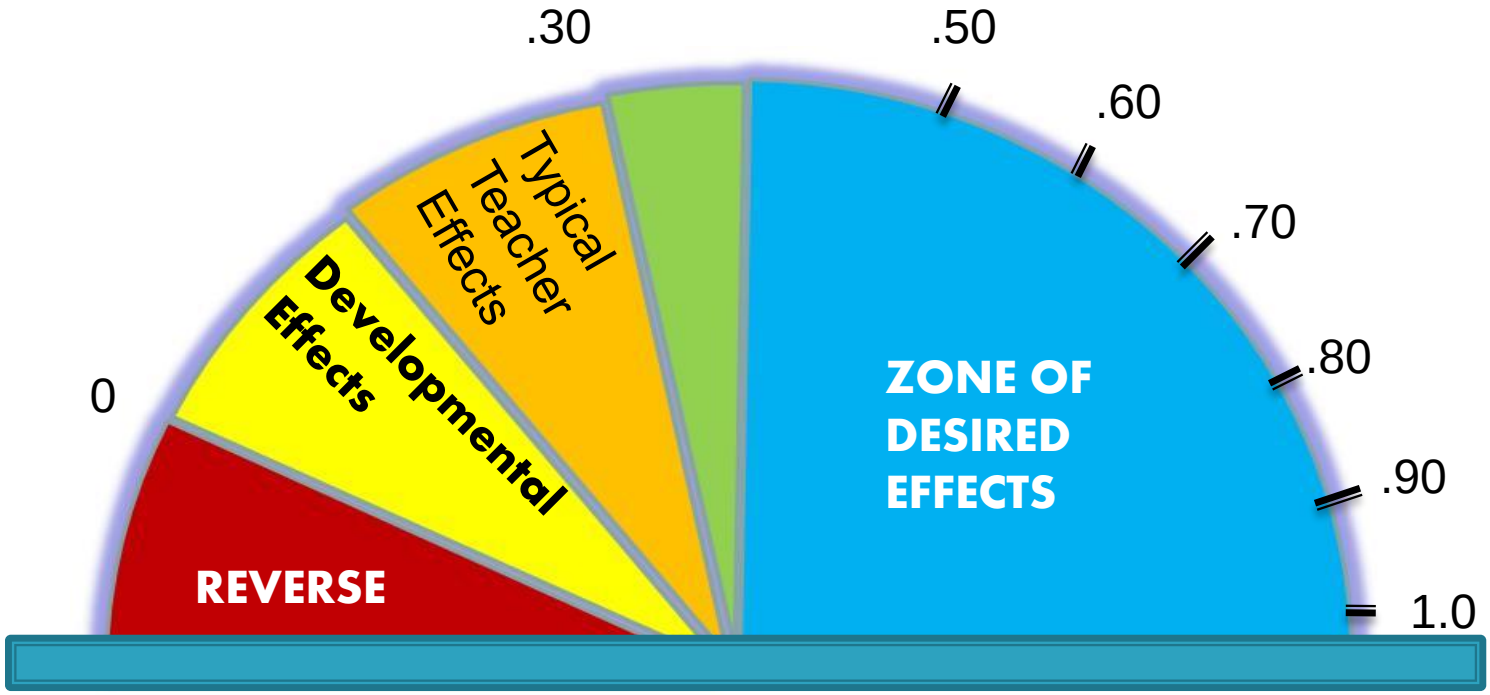
- The vast majority of innovations or educational strategies can be said to 'work' because they can be shown to have a positive effect.
- But a student left to work on their own, with the laziest supply teacher, would be likely to show some improvement over a year.
- In 1976 **Gene Glass** introduced the notion of meta-analysis – whereby the effects of each study are converted to a common measure or **Effect Size.**
- An effect size of **1.0** would improve the rate of learning by 50% and would mean that, on average, students receiving that approach or intervention would exceed 84% of students not receiving that treatment.
- At least half of all students can and do achieve an effect size of **0.4** in a year (the so-called 'hinge point'), so anything with an effect size of over 0.4 is likely to be having a **visible effect**.

Effect on Achievement over time?

Typical Effect Size



Influences on Achievement



EFFECT SIZE greater than 0.40

is seen as above the norm and leading towards a more-than-expected growth over a year.

Influences on Student Learning

Expectations	Mastery Learning
Homework	Challenge of Goals
Feedback	Aims & Policies (School)
Ability Grouping	Peer Tutoring
Teacher-Student Relationships	

Diamond Nine Activity

- With a partner discuss these nine factors that influence student achievement.
- Place them in a diamond shape, in order of how great you think their positive influence is (on average).
- Think about why they have this effect?

Mastery Learning:

All children can learn when they focus on mastering tasks in a collaborative environment.

Appropriate learning conditions in the classroom include:

- High levels of co-operation between classmates;
- Focused teacher feedback that is both frequent and diagnostic;
- Variable time and space allowed to reach levels of attainment.

Influences on Student Learning

Feedback

Teacher-Student Relationships Mastery Learning

Challenge of Goals Peer Tutoring

~~Expectations~~

Homework Aims & Policies of the School

Ability Grouping

Influences on Student Learning

John Hattie 1999–2009 – research from 180,000 studies covering almost every method of innovation

	Effect Size
Feedback	0.73
Teacher–Student Relationships	0.72
Mastery Learning	0.58
Challenge of Goals	0.56
Peer Tutoring	0.55
Expectations	0.43
Homework	0.29
Aims & Policies of the School	0.24
Ability Grouping	0.12

If feedback is so important, what kind of feedback should be taking place in our classrooms?

Discuss in pairs for 2 minutes

'The most powerful single influence enhancing achievement is feedback'

- **Quality** feedback is needed, not more feedback.
- Much of the feedback provided by the teacher to the student is not valued and not acted upon.
- If the learning environment encourages students to embarrass and welcome feedback then they are more likely to use it to improve their own performance.
- Oral feedback is much more effective than written.
- The most powerful feedback is provided **from the student to the teacher (e.g., are they learning, are they engaged and understanding, have they got it!).**

How could we obtain more feedback from students?

How can we ensure we act on this feedback to raise achievement?

Discuss in pairs

Expectations

- *What do we base our expectations on of student learning?*

Duesk and Joseph 1983 said:

- Attractiveness.
- Prior conduct of child/young person.
- Cumulative information about child/young person.
- Social class!
- Weinstein (2002) has shown that students know that they are treated differently and that teachers have higher expectations of some than others!
- **WE KNOW WE ARE ALL GUILTY BUT AT LEAST WE CAN BE AWARE. We need to prepare to be surprised! We need to stop negative expectations in their tracks.**

Expectations: Tracking & Mind-sets

- **Tracking**: There are differences in classes where teachers aim to select talent for different pathways (such as schools with tracking) compared with those where achievement cultures aim to develop talent in each child.
- **Fixed & Growth Mindsets**: There are also differences in classes where teachers believe that achievement (and intelligence) is difficult to change because it is fixed and innate compared to teachers who believe achievement (and intelligence) is changeable (Carol Dweck 2006).
- **'Be prepared to be surprised'** seems to be the mantra to avoid negative expectation effects.

Setting Goals

- There is strong evidence that constructively challenging, achievable and 'reality tested' goals influence achievement, **provided the individual is involved in setting them.**
- Locke and Latham (1990) found that achievement is enhanced to the degree that teachers set challenging, rather than 'do your best' goals, **relative** to the students' present competencies or baseline. **There is a direct linear relationship between the degree of goal difficulty and performance** .
- Goals have a self-energizing effect if they are appropriately challenging as they can motivate students to exert effort in line with the difficulty or demands of the goal.
- Commitment to the goals helps, but is not necessary for goal attainment – except for Special Educational Needs students, where commitment makes a major difference.

Setting Goals – Personal Bests

- Martin (2006) argued that a good method to assist students in setting task-specific and situation-specific goals was to use the notion of 'personal bests'.
- He found that setting **personal bests had high positive relationships to educational aspirations, enjoyment of school, participation in class and persistence on the task.**

Are your students fully involved in setting goals?

Are their goals as high as possible while still being attainable?

Discuss in pairs

Mastery Learning:

All children can learn when they focus on mastering tasks in a collaborative environment.

Appropriate learning conditions in the classroom include:

- High levels of cooperation between classmates;
- Focused teacher feedback that is both frequent and diagnostic;
- Variable time allowed to reach levels of attainment.

Is our classroom climate truly attuned to Mastery Learning?

What could we be doing to provide more opportunities for Mastery Learning?

Teacher – Student Relationships

- Developing a **warmer socio-emotional climate** in the classroom, fostering effort and thus engagement for all students, requires teachers to enter the classroom with certain conceptions about progress, relationships and students.
- It requires them to believe **that their role is that of a change agent – that all students can learn and progress, that achievement for all is changeable and not fixed, and that demonstrating to all students that they care about their learning is both powerful and effective.**

Visible Learning P.128, The Contributions from the Teacher – J.Hattie 2009

- In a study by Russell Bishop students, parents/carers, management and teachers were asked what are the major influences on student achievement.

- WHAT DO YOU THINK EACH ANSWERED?

ANSWERS

- All except the teachers said the relationships between the teachers and the students!!!!
- Teachers thought:
- Child's attitude and disposition.
- Child's home background.
- Working conditions of the school.
- OR that pupils who are not learning are deficient in some way.
- How can we combat this attitude in ourselves?

Ability Grouping

- 88% of children placed in sets or streams at age 4 remain in the same groupings until they leave school *(*Annabelle Dixon, Forum 2002)

Ability Grouping

- Effect sizes of whole class ability grouping (0.12) and within class ability grouping (0.16) are uniformly low.
- Expectations and goal setting become even more important if children are grouped by ability.

DfES Standards Site (Gifted & Talented section)

- 'If schools continue to use predominantly mixed-ability settings, they should be able to demonstrate high pupil attainment relative to other, similar schools‘.
- Why no similar warning to schools that persist in using rigid setting procedures, when research shows that these systems do not raise achievement?

Creating Independent Learners

You need two things:
Great schools
Specialist (Expert) teachers

Great Schools

- Create an ethos or whole school climate that demands that all are responsible for the progress of all of the students.
- Use information openly and intelligently.
- Adopt a shared problem-solving framework.
- Use research-based and/or informed evidence.
- Collaborate to improve learning.
- Develop specialist (expert) teachers

Building Teacher Quality – John Hattie, University of Auckland 2003

What are some differences between experienced teachers and specialist (expert) teachers?

Discuss in pairs for 2 minutes

As a Specialist (Expert) Teacher:

You meet with colleagues regularly to discuss:

- **Evidence** of progress of your and their students.
- How to improve your teaching practice (thinking and actions).
- How to change your teaching practice (thinking and actions).
- How to do this in the light of evidence that what you are doing at present is not having the effect that you want.

Building Teacher Quality (The difference between experienced teachers & expert teachers)- John Hattie, University of Auckland 2003

The Teacher:

- ‘Not all teachers are effective, not all teachers are specialists (experts) and not all teachers have powerful effects on students. It is teachers’ variability in effect that is critical.
- SPECIALIST (EXPERT) TEACHERS ARE DISTINGUISHED BY 3 DIMENSIONS:
- **Challenge.**
- **Deep Representation.**
- **Monitoring and feedback.**
- Do you have a powerful effect on your pupils and how do you know? – Discuss in pairs

Do you feel psychologically safe to discuss:

- Successes and failures in **your classroom.**
- How to improve **your teaching** (not the pupils, not the curriculum, not the resources, not the class size, not the conditions….).
- What assessment says about what **you are doing** (not the pupils).

Discuss in pairs for two minutes

Influences on student learning – Transition Issues

'The greatest single issue facing the further enhancement of student achievement is the need for teachers to have a **common perception of progress**. When a student moves from one teacher to another, there is no guarantee that he or she will experience increasingly challenging tasks, have a teacher with **similar (hopefully high) expectations of progress**, or work with a teacher who will grow the student from where he or she is, as opposed to where the teacher believes he or she should be at the start of the year.'

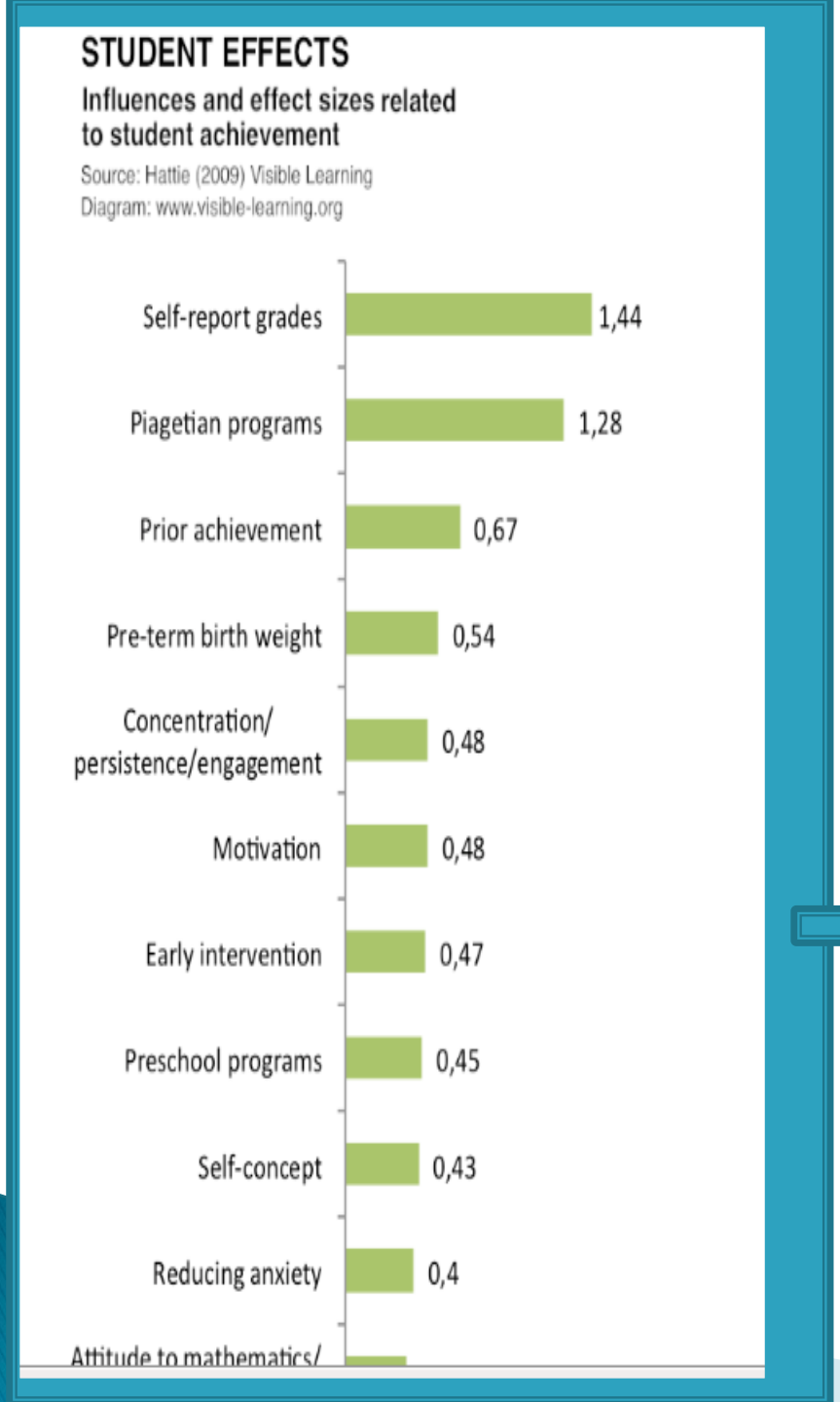
Visible Learning by Professor John Hattie (2009)

How could we improve transition from one teacher to another to ensure we provide increasingly challenging tasks for every child?

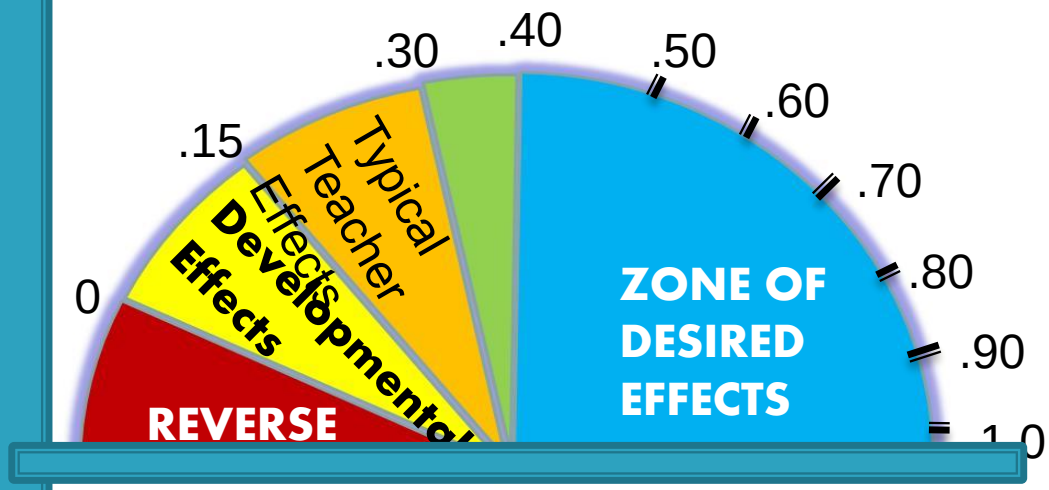
- Discuss for two minutes

John Hattie on the 'Art of Teaching'

- '…the act of teaching reaches its epitome of success after the lesson has been structured, after the content has been delivered, and after the classroom has been organised. The art of teaching, and its major successes, relate to 'what happens next' – the manner in which the teacher reacts to how the student interprets, accommodates, rejects and/or reinvents the content and skills, how the student relates and applies the content to other tasks, and how the student reacts in light of success and failure apropos the content and methods that the teacher taught. **Learning is spontaneous, individualistic, and often earned through effort. It is a timeworn, slow, gradual, fits-and-starts kind of process, which can have a flow of its own, but requires passion, patience, and attention to detail (from the teacher and the student)'.** John Hattie, 2009, p.2

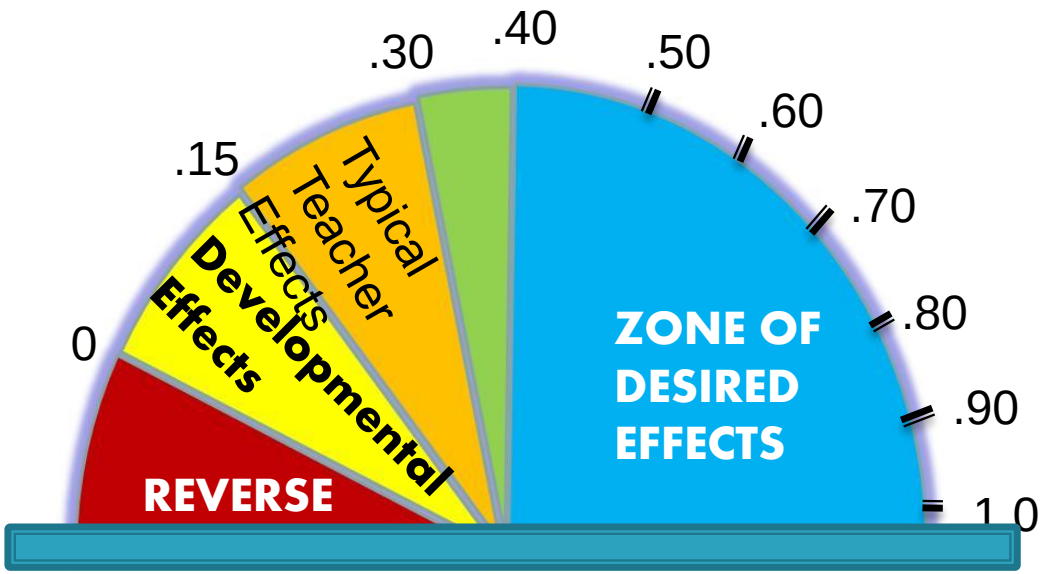


Student Domain

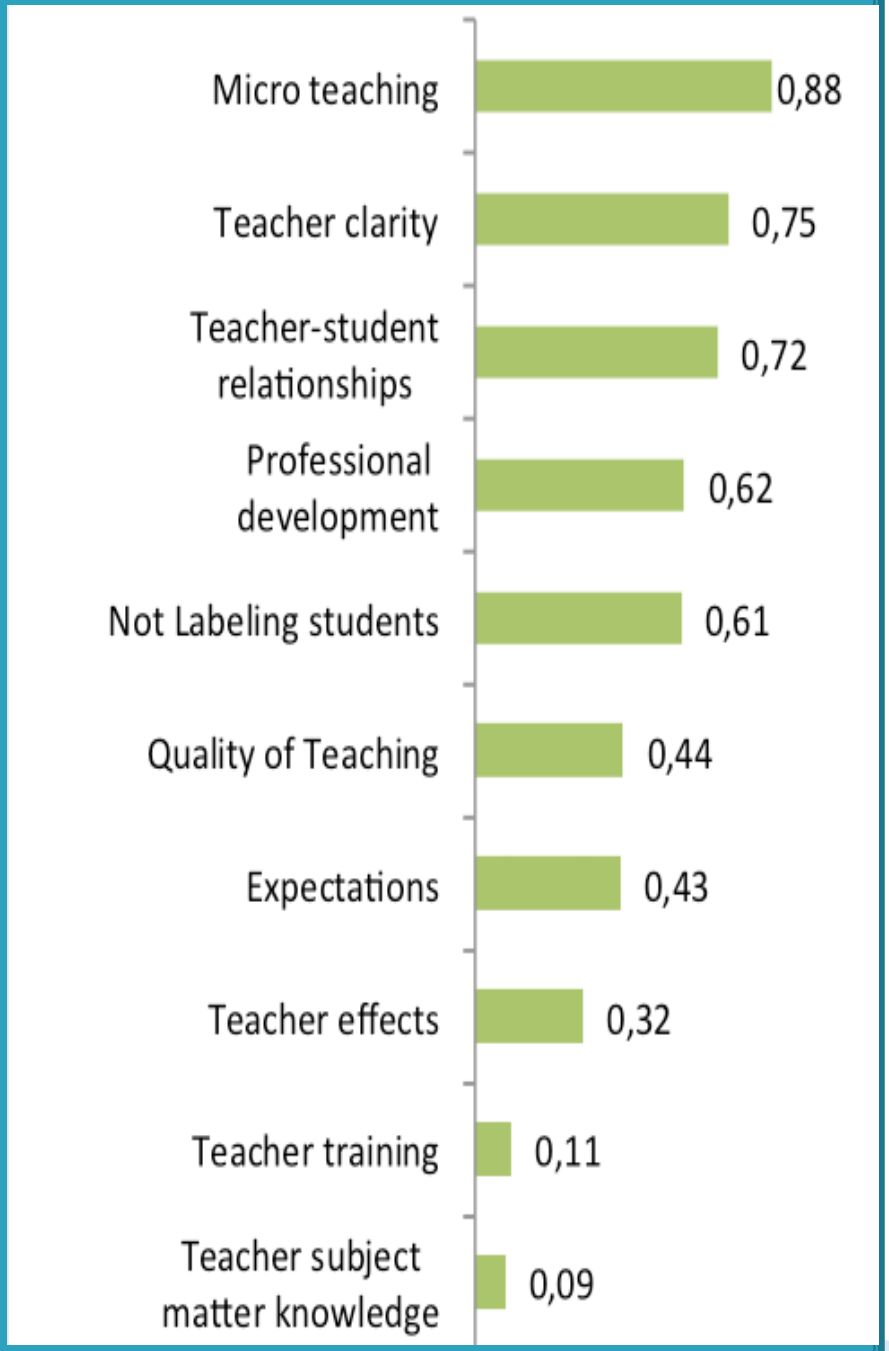


1.44
Self-report Grades

Teaching Domain



.9 Formative Evaluations
.77 Interventions
.74 Reciprocal Teaching
. 73 Feedback



Teacher Effects

.88 Micro teaching

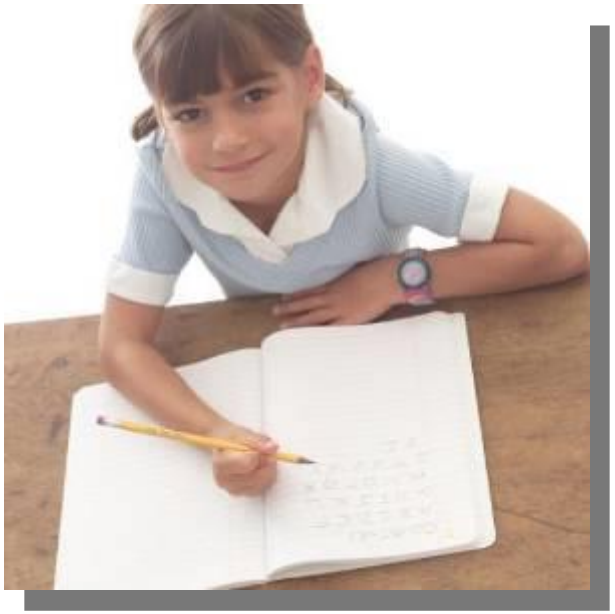
.75 Teacher Clarity

.72 Teacher-Student Relationship

.62 Professional Development

Students …

- Understand learning intentions.
- Are challenged by success criteria.
- Develop a range of learning strategies.
- Know when they are not progressing.
- Seek feedback.
- Visibly teach themselves.



Teachers

- Clear learning intentions.
- Challenging success criteria.
- Range of learning strategies.
- Know when students are not progressing.
- Providing feedback.
- Visibly learns themselves.

Teachers Make the Difference!

YOU make an IMPACT!

Resources

www.education.auckland.ac.nz/webdav/site/education/shared/hattie/docs/EARLI-presentation-by-john-hattie.ppt

http://visible-learning.org/

http://visiblelearningplus.com/

Dr. Jeremy J. Monsen

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SUMMARY OF General Findings:

- 1. The biggest determinant of student achievement is what they bring to school (i.e. genetics, intelligence, health and wellbeing).

- 2. The second biggest determinant is the **quality of teaching**.

A summary of John Hattie's research: four categories of effectiveness

- 1. Not effective
- 2. Of little effect
- 3. Effective
- 4. Highly effective

Not Effective

- Retention, or making children repeat a grade=0.16
- Gender class =0.12
- Ability grouping =0.12
- Multi-age classes =0.04
- Student control over learning =0.04

- Two very alarming statistics-
- Moving schools continuously =-0.10
- 10 plus hours of television per week =-0.18

Of Little Effect

- Testing =0.34
- Homework =0.29
- Home visits =0.29
- Individualised instruction =0.23
- Class size =0.21
- Team teaching =0.19
- Mentoring =0.15

Effective

- Tactile stimulation programs =0.58
- Peer tutoring =0.55
- Parental involvement =0.51
- Play programs =0.50
- Small group learning =0.49
- Co-operative learning =0.41
- Advanced organisers =0.41
- Social skills programs =0.40

Highly Effective

- Self reported grades =1.44
- Piagetian programs =1.28
- Formative evaluation =0.90
- Acceleration =0.88
- Feedback =0.73
- Teacher/student relationships =0.72
- Spaced practice =0.71
- Vocabulary programs =0.67
- Teacher professional development =0.62
- Phonics instruction =0.60

Typical ‘Average Teacher’ Territory …

Rank	Category	Influence	Studies	Effects	ES
70		Finances	189	681	.23
69		Summer school	105	600	.23
68		Competitive learning	831	203	.24
67		Programmed instruction	464	362	.24
66		Within class grouping	148	297	.25
65		Mainstreaming	150	370	.28
64		Desegregation	335	723	.28
63		Exercise/relaxation	227	1971	.28
62		Audio-based teaching	146	48	.28
61		Home visiting by teachers	71	52	.29

Close to Average

Rank	Category	Influence	Studies	Effects	ES
60		Reducing anxiety	69	904	.30
59		Principals/school leaders on student achievement	344	1008	.30
58		Ability grouping for gifted students	125	202	.30
57		Homework	261	275	.31
56		Inquiry based teaching	205	420	.31
55		Simulations and gaming	342	449	.32
54		Reading: Exposure to reading	145	324	.36
53		Bilingual programs	128	666	.37
52		Teacher positive expectations	635	745	.37
51		Computer assisted instruction	4481	8079	.37

Average …

Rank	Category	Influence	Studies	Effects	ES
50		Enrichment on gifted	214	543	.39
49		Integrated curriculum programs	61	80	.39
48		Adjunct aids	138	323	.41
47		Hypermedia instruction	46	143	.41
46		Behavioral organisers/adjunct questions	577	1933	.41
45		Self-concept on achievement	324	2113	.43
44		Frequent/effects of testing	323	1077	.46
43		Early intervention	1627	9050	.47
42		Motivation on learning	322	979	.48
41		Small group learning	78	155	.49

Getting there …

Rank	Category	Influence	Studies	Effects	ES
40		Questioning	214	342	.49
39		Cooperative learning	2285	1519	.49
38		Reading: Second/third chance programs	52	1395	.50
37		Play programs	70	70	.50
36		Visual based/audio-visual teaching	468	3860	.51
35		Outdoor programs	187	429	.52
34		Concept mapping	91	105	.52
33		Peer influences	12	122	.53
31		Reading: Phonics instruction	407	5950	.53

Let's have them ....

Rank	Category	Influence	Studies	Effects	ES
30		Reading: Visual-perception programs	762	5244	.55
29		Parental Involvement	694	1761	.55
28		Peer tutoring	767	1200	.55
27		Goals - challenging	454	671	.56
26		Mastery learning	369	284	.57
25		Social skills programs	540	3068	.57
24		Socio-economic status	499	957	.57
23		Home environment	35	109	.57
22		Providing worked examples	62	151	.57
21		Reading: Comprehension programs	365	2416	.58

Exciting ….

Rank	Category	Influence	Studies	Effects	ES
20		Direct instruction	304	597	.59
19		Time on task	64	100	.59
18		Study skills	656	2446	.59
17		Acceleration of gifted	60	412	.60
16		Problem solving teaching	221	719	.61
15		Teacher professional development on student achievement	450	1790	.64
14		Reading: Repeated reading programs	54	156	.67
13		Reading: Vocabulary programs	301	800	.67
12		Meta-cognition strategies	43	123	.67
11		Teaching students self-verba[illegible]tion	92	1061	.67

The Winners …

Rank	Category	Influence	Studies	Effects	ES
1		Self-report grades	209	305	1.44
2		Absence of disruptive students	140	315	.86
3		Classroom behavioural	160	942	.80
4		Quality of teaching	141	195	.77
5		Reciprocal teaching	38	53	.74
6		Prior achievement	3387	8758	.73
7		Teacher-student relationships	229	1450	.72
8		Feedback	1276	1928	.72
9		Providing formative evaluation to teachers	21	21	.70
10		Creativity programs	658	814	.70