

Thinking and Acting Locally and Globally: Teacher Education for a Changing Environment

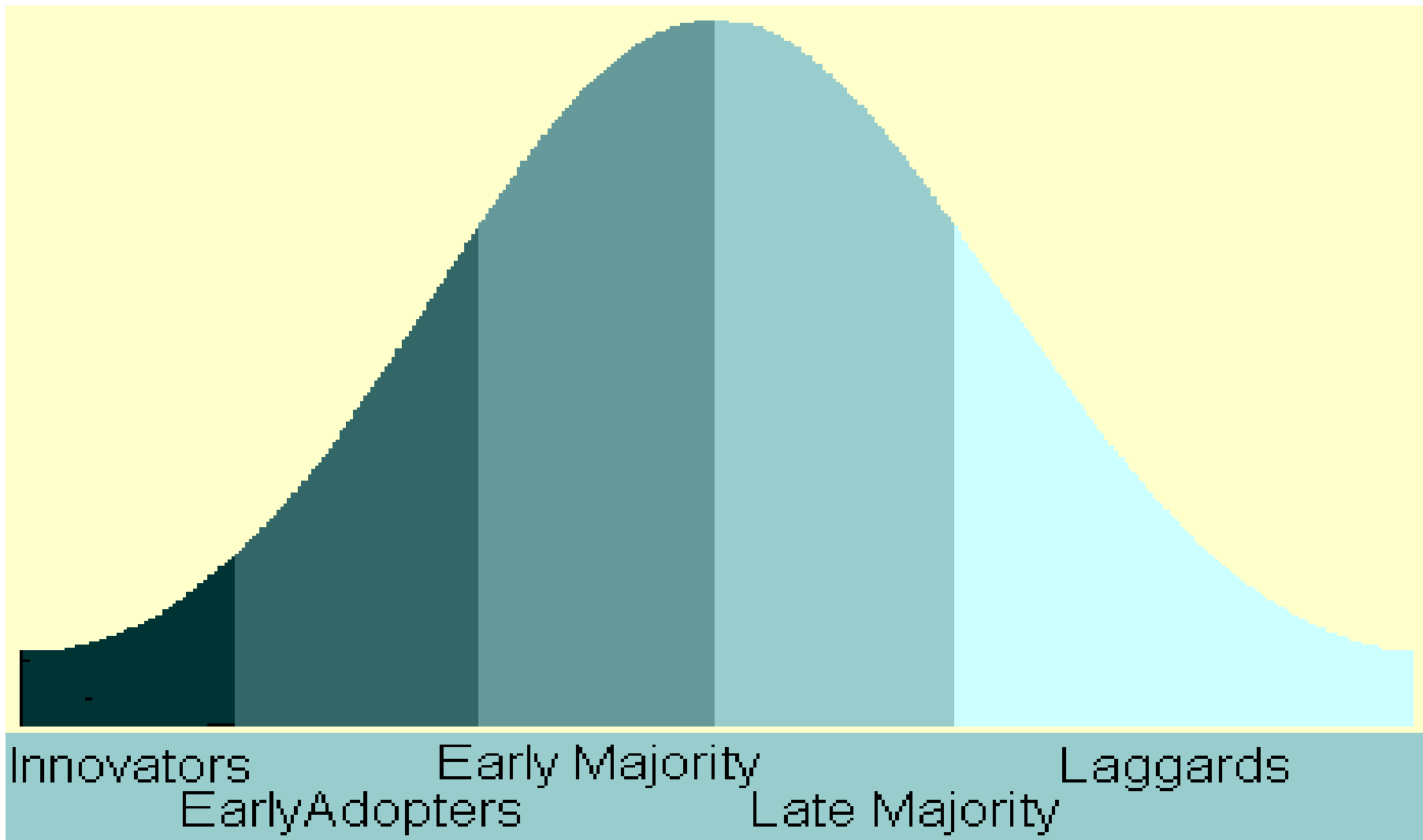
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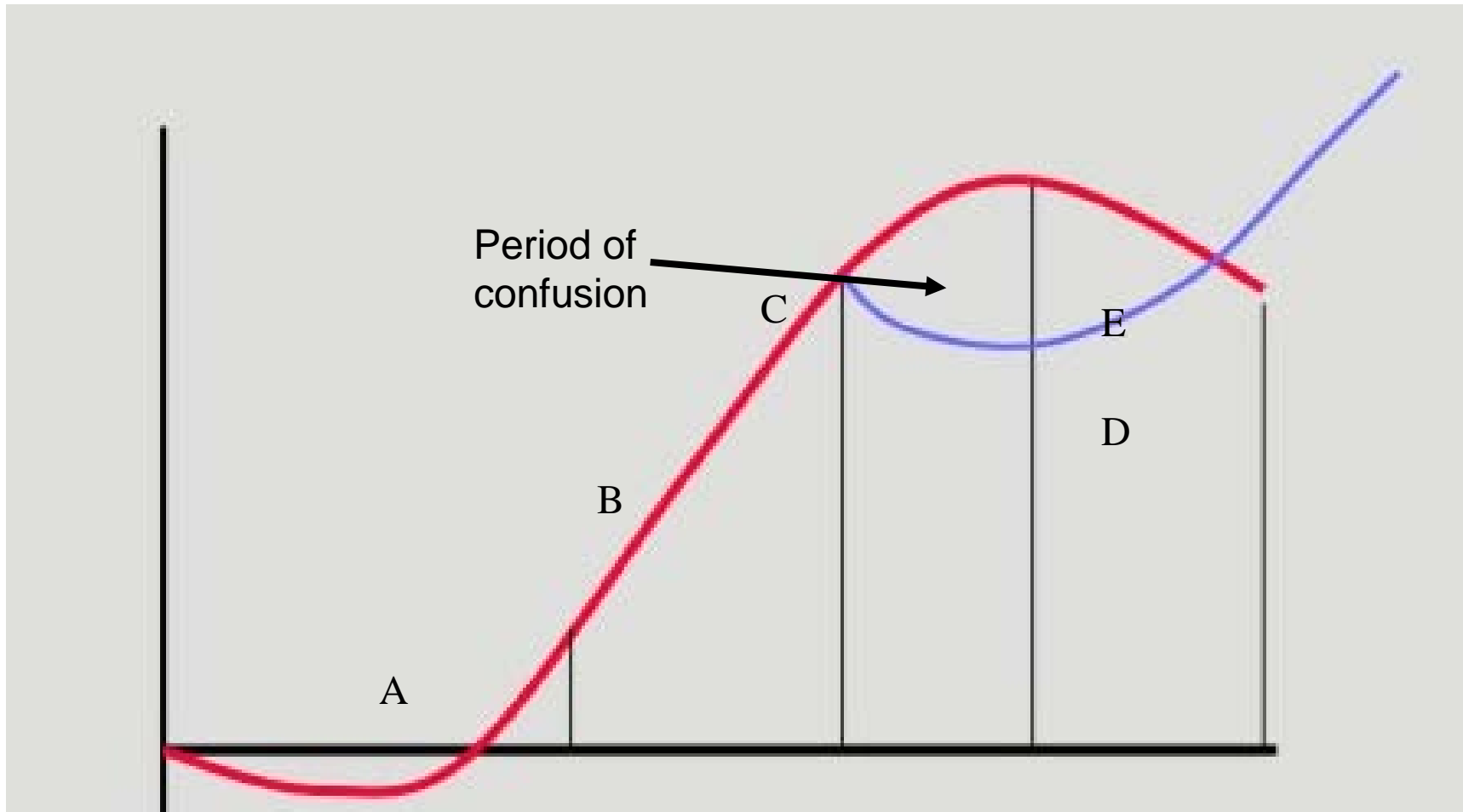


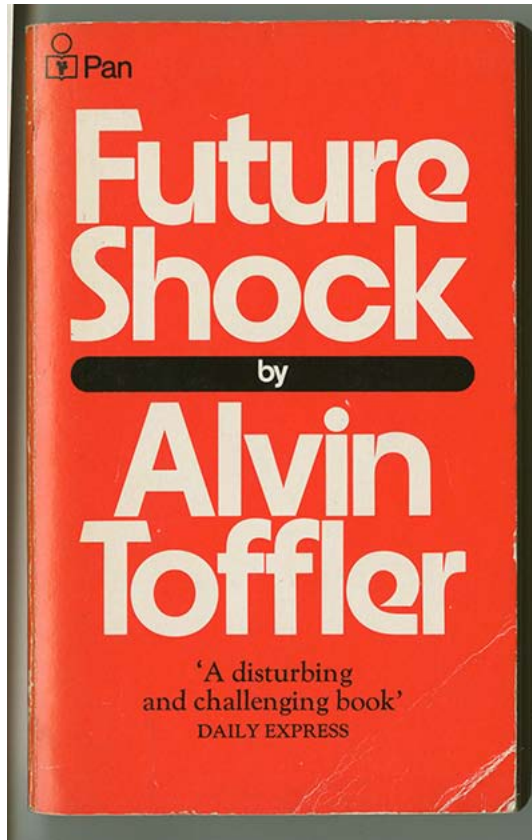
Every few hundred years in western history there occurs a sharp transformation. We cross... a divide. Within a few short decades society rearranges itself, its world view; its basic values; its social and political structure; its arts; its key institutions. Fifty years later, there appears a new world...we are currently living through such a transformation.

THE PACE AND FLOW OF CHANGE



The S (Sigmoid) Curve (Handy 2004)





I coined the term ‘future shock’ to describe the shattering stress and disorientation that we induce in individuals by subjecting them to too much change in too short a time.

The new 'Accountability Game'

There is now an accountability process that exists at all levels:

- Internationally (your country and other countries)
- Nationally (your authority and other authorities)
- System-wide (your school and other schools)
- Locally (your class and other classes)

	TIMSS		PISA	TIMSS		PISA	TIMSS		PISA		
	Gr 4	Gr 8	15	Gr 4	Gr 8	15	Gr 4	Gr 8	15		
Asia/M.East				Europe			Europe				
Armenia	✓	✓		Denmark	✓	✓	Serbia		✓	✓	
Bahrain		✓		England	✓		Slovak Republic		✓	✓	
Bulgaria		✓		Estonia		✓	Slovenia	✓	✓	✓	
Chinese Taipei	✓	✓		Finland		✓	Spain			✓	
Hong Kong	✓	✓	✓	France		✓	Sweden		✓	✓	
Indonesia		✓	✓	Germany		✓	Switzerland			✓	
Iran	✓	✓		Greece		✓	Turkey			✓	
Israel		✓		Hungary	✓	✓	United Kingdom			✓	
Japan	✓	✓	✓	Iceland		✓	Africa				
Jordan		✓		Ireland		✓	Botswana		✓		
Korea		✓	✓	Italy	✓	✓	Egypt		✓		
Lebanon		✓		Latvia	✓	✓	Ghana		✓		
Macao-China			✓	Liechtenstein		✓	Morocco	✓	✓		
Malaysia		✓		Lithuania	✓	✓	South Africa		✓		
Palestinian		✓		Luxembourg		✓	Tunisia	✓	✓	✓	
Philippines	✓	✓		Macedonia		✓	The Americas				
Saudia Arabia		✓		Moldova	✓	✓	Brazil			✓	
Singapore	✓	✓		Netherlands	✓	✓	Canada			✓	
Thailand			✓	Norway	✓	✓	Chile		✓		
Europe				Poland		✓	Mexico			✓	
Austria			✓	Portugal		✓	United States	✓	✓	✓	
Belgium	✓	✓	✓	Romania		✓	Uruguay			✓	
Cyprus	✓	✓		Russian Fed.	✓	✓	Pacific				
Czech Republic	✓		✓	Scotland	✓	✓	Australia	✓	✓	✓	
							New Zealand	✓	✓	✓	

TIMSS Grade 4 Mathematics Performance 1999-2003

	1999	2003		1999	2003
Singapore	590	(594)	Australia	495	(499)
Japan	567	(565)	Scotland	493	(490)
Hong Kong*	557	(575)	Ont. Canada*	489	(511)
Que. Canada*	550	(506)	England*	484	(531)
Netherlands*	549	(540)	Norway *	476	(451)
Hungary	521	(529)	New Zealand*	469	(496)
USA	518	(518)	Cyprus *	475	(510)
Latvia*	499	(533)	Slovenia*	462	(479)
			Iran	387	(389)

* Significant improvement * significant decline

TIMSS Grade 4 Science Performance 1995-2003

	1995	2003		1995	2003
Singapore*	523	565	Australia	521	521
Japan*	553	543	Scotland*	514	502
Hong Kong*	508	542	Ont. Canada*	516	540
Que. Canada*	529	500	England*	528	540
Netherlands	530	525	Norway *	504	466
Hungary*	486	530	New Zealand*	505	523
USA	542	536	Cyprus *	450	480
Latvia*	486	530	Slovenia*	464	479
			Iran*	380	414

* Significant improvement * significant decline

TIMSS Grade 8 Mathematics Performance 1995-2003

	1995	2003		1995	2003		1999	2003
Singapore	609	(605)	Australia	509	(505)	Ch. Taipei	585	(585)
Japan*	581	(570)	New Zealand	501	(494)	Malaysia	519	(508)
Korea*	581	(589)	Norway*	498	(461)	Italy	493	(491)
Hong Kong*	569	(586)	England	498	(498)	Moldova	469	(460)
Ont. Canada	556	(543)	Slovenia	494	(493)	Israel*	466	(496)
Belgium- Flem*	550	(537)	Scotland*	493	(498)	Tunisia*	448	(410)
Bulgaria*	545	(479)	USA*	492	(504)	Macedonia*	447	(435)
Sweden*	540	(499)	Latvia*	488	(505)	Jordan	428	(424)
Hungary	537	(543)	Romania	474	(475)	Indonesia	403	(411)
Slovak Rep.*	534	(508)	Lithuania*	472	(502)	Philippines*	345	(378)
Netherlands	529	(536)	Cyprus*	468	(459)	Chile	392	(397)
Russian Fed.*	524	(508)	Iran	418	(411)			
Que. Canada*	510	(531)	Sth Africa	264	(275)			

* Significant improvement * significant decline

TIMSS Grade 8 Science Performance 1995-2003

	1995	2003		1995	2003		1999	2003
Singapore	580	(578)	Slovak Rep.*	514	(520)	Ch. Taipei	569	(571)
Japan	554	(552)	Norway*	514	(494)	Italy	493	(491)
Sweden*	553	(524)	USA*	513	(527)	Malaysia*	492	(510)
Korea*	549	(558)	New Zealand	511	(520)	Israel*	468	(488)
Bulgaria*	545	(479)	Que. Canada*	510	(531)	Philippines	345	(377)
Netherlands	541	(536)	Scotland	501	(512)	Jordan	450	(475)
Hong Kong*	530	(536)	Ont. Canada	496	(533)	Indonesia*	435	(420)
Slovenia*	514	(520)	Latvia*	476	(513)	Chile	420	(413)
Hungary	537	(543)	Romania	471	(470)	Tunisia*	430	(404)
England	533	(544)	Lithuania*	464	(519)	Moldova*	459	(472)
Belgium- Flem*	533	(516)	Iran *	463	(453)	Macedonia	458	(449)
Russian Fed.	523	(514)	Cyprus*	452	(441)			
Australia *	514	(527)	Sth Africa	243	(244)			

* Significant improvement * significant decline

PISA Scores 2006

READING		MATHEMATICS	SCIENCE		
Korea	556	Taipei	549	Finland	563
Finland	547	Finland	548	Hong Kong	542
Hong Kong	536	Hong Kong	547	Canada	534
Canada	527	Korea	547	Taipei	532
Japan	522	Netherlands	531	Estonia	531
New Zealand	521	Switzerland	530	Japan	531
Ireland	517	Canada	527	New Zealand	530
Australia	513	Macao	527	Australia	527
Liechtenstein	510	Liechtenstein	536	Netherlands	525
Poland	508	Japan	523	Liechtenstein	522
Sweden	507	New Zealand	522	Korea	522
Netherlands	507	United Kingdom	495	United Kingdom	515
United Kingdom	495	Ireland	501	Ireland	508
OECD Average	492	OECD Average	498	OECD Average	500

Pisa 2006 (Mean scores)

	reading	mathematics	science
England	495	495	516
Scotland	499	506	515
Wales	481	484	505
Northern Ireland	495	494	508
UK Total	495	474	515
Rep. of Ireland	517	501	508
OECD	492	498	500
Finland	547	548	567

A league table to worry us all, Guardian, Tuesday 8 January 2008

The decline of the UK's Pisa scores raises questions about the direction of educational policy in England, says Peter Mortimore



The results of the third phase of Pisa (Programme for International Student Assessment) make interesting reading. Every three years, Pisa tests 400,000 15-year-olds from 54 countries in reading, maths and science. Like all international assessments, Pisa has methodological and statistical limitations. The Organisation for Economic Cooperation and Development (OECD), however, uses elaborate procedures to ensure that the sampling of students and schools is fair and that like is being compared with like. The tests are not related to any specific curricula but are based on the knowledge and skills young people need in the modern world.

Scotland sits with Third World nations

News | Published in TESS on 12 December, 2008 | **By: Neil Munro**

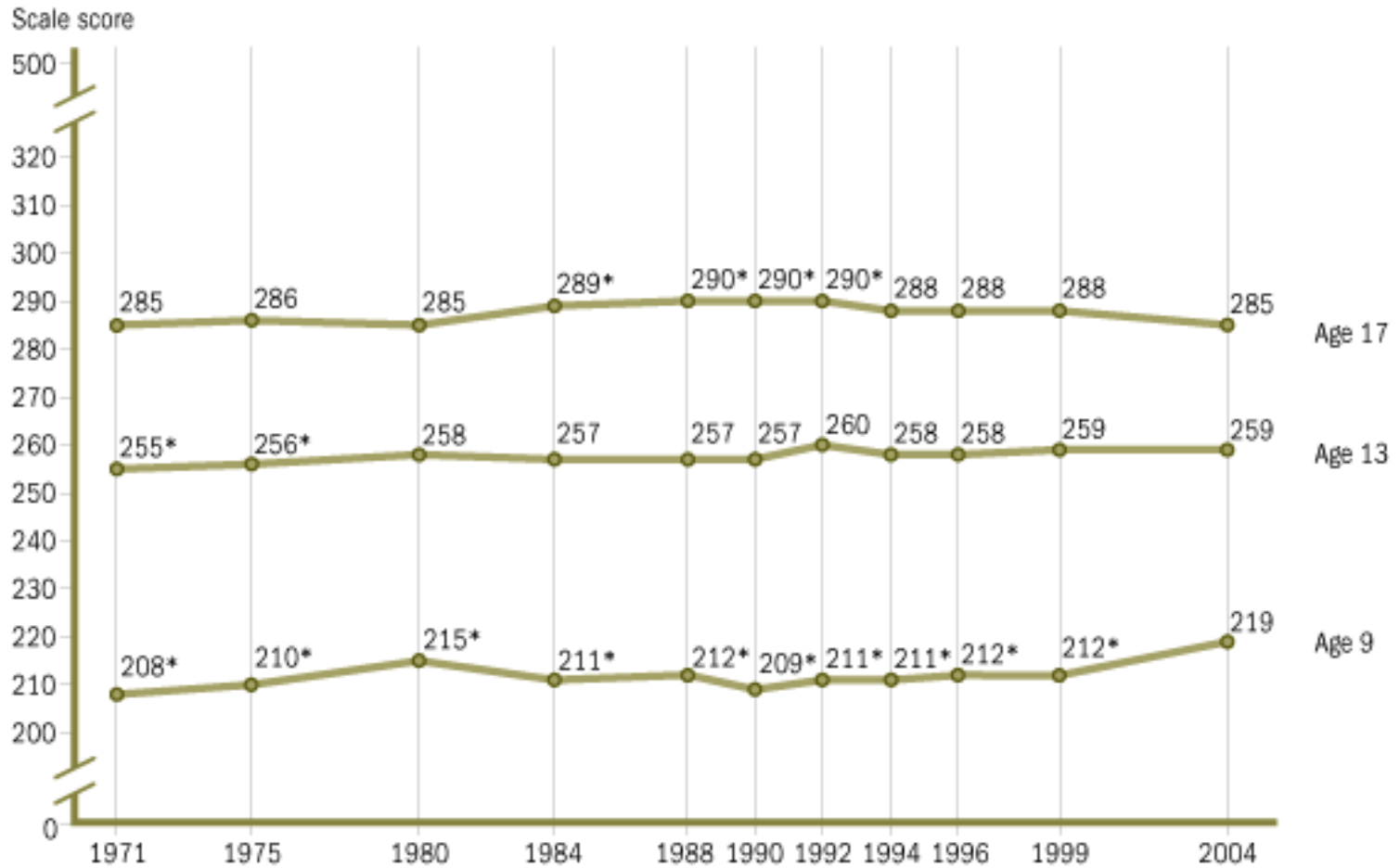
Scotland is languishing in the company of Third World countries when it comes to the performance of 10- and 14-year-olds in maths and science.

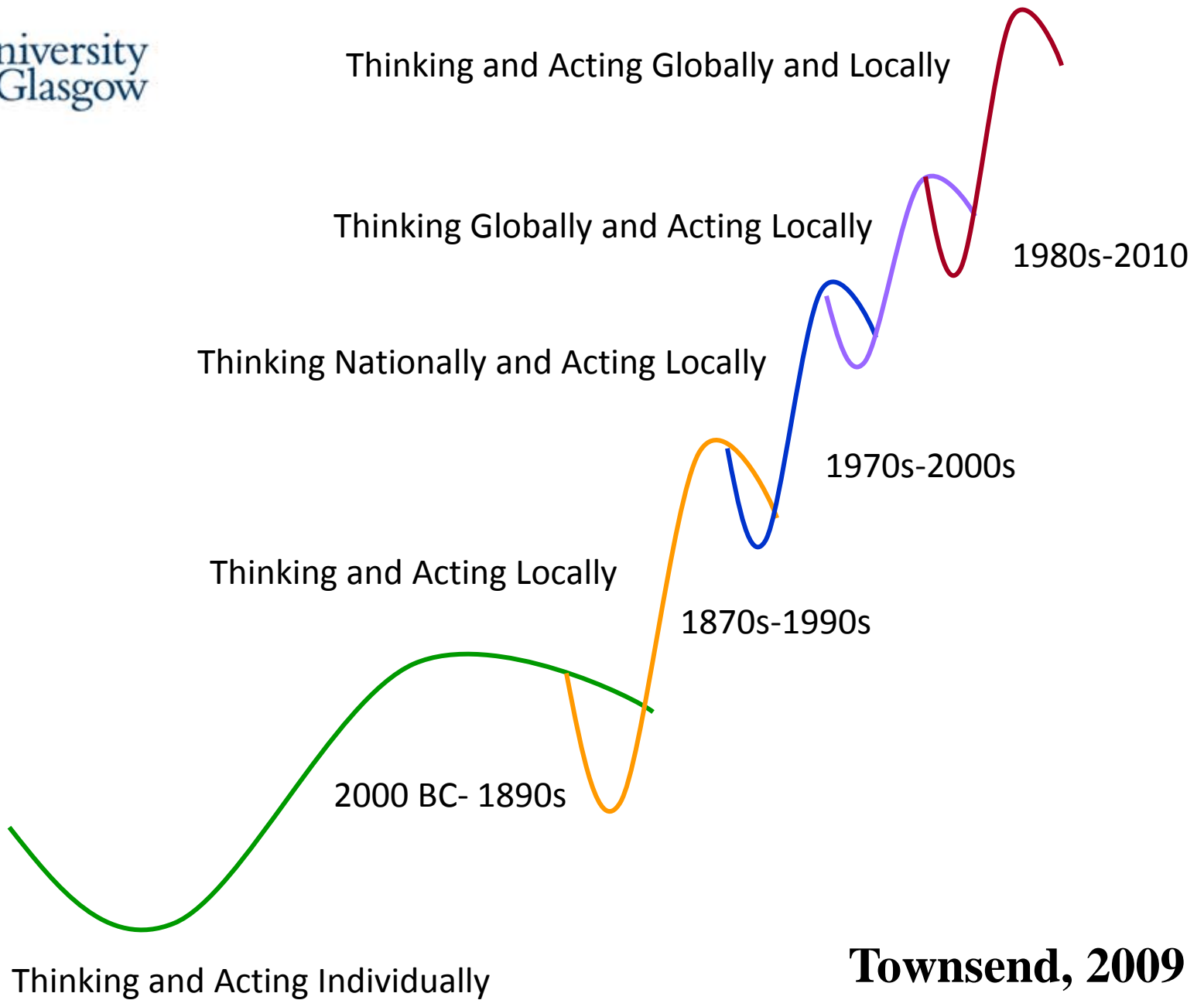
Landmark findings from the 2007 Trends in International Mathematics and Science Study (TIMSS) could well spell the end of the self-congratulatory mantra that “Scottish schools perform well by international standards.”

Scotland was placed 20th out of 36 countries in maths performance in P5, and 22nd in science. In S2, Scotland was 14th out of 49 countries in maths and 15th in science. This is below the TIMSS average on all counts except for P5 science, where Scottish pupils were on the average...

It is now possible to track change in reading performance over a six-year period. The results suggest that, across the OECD area, reading performance has generally remained flat between PISA 2000 and PISA 2006. This needs to be seen in the context of significant rises in expenditure levels. Between 1995 and 2004 expenditure per primary and secondary student increased by 39% in real terms, on average across OECD countries.

Trends in average reading scale scores : 1971–2004 (USA, NAEP Scores)



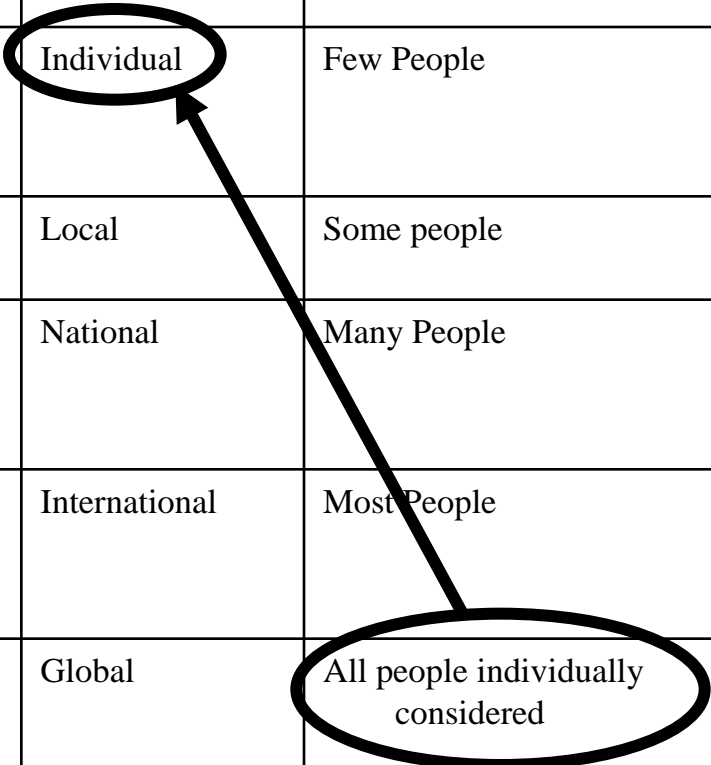


Adding to Beare's (1998) Metaphors for Education

- Prior to the 1870's: the pre-industrial metaphor ('for the **few and the privileged**', p 5)
- 1870's-1980's: the industrial metaphor ('bureaucracies which characterised **factory production**', p6)
- 1980's-1990's: the post industrial metaphor ('schools are being talked of as if they are **private businesses or enterprises**', p10)
- 2000s: the accountability metaphor (competition, choice and the **education market**).
- The future: the social justice metaphor (age where governments accept their **legal and moral responsibility to educate all of the world's people**).

The S-curve summary

Period	Focus of delivery	Those effectively educated	Dominant Paradigm of the age
000-1890 AD	Individual	Few People	Thinking and acting individually
1870-1990 AD	Local	Some people	Thinking and acting locally
1970-2000 AD	National	Many People	Thinking nationally and acting locally
1980-2010 AD	International	Most People	Thinking globally and acting locally
2010-onwards	Global	All people individually considered	Thinking and acting both locally and globally



Education Policy

Thinking Globally

Recognition that the world has changed quite substantially since the development of schools. World's best practice needs to be conducted if education systems are to keep up with these changes.

Acting Locally

Education systems use what they have learned from other systems, adapting what they have learned to the local circumstances. International comparative data are used to drive local school improvement.

Thinking and Acting Locally and Globally

There is a reassessment of the purpose and delivery of education in a rapidly changing world. There is recognition that education need not be a competitive process, but instead world's best practice should be freely shared for the benefit of all. The available technology is utilised to ensure that the available knowledge and skill is translated into practice.

Accountability Versus Responsibility

Accountability

to count, compute
*(something done
to schools)*



Responsibility

to be responsive;
response-ability
*(an internal drive for
continuous improvement)*

School Level Change

Thinking Globally

Recognition that the level of success of an individual school is a complex mixture of the characteristics of the students, families and local community on the one hand and the skills, values and development of the teachers and school leaders.

Acting Locally

Self-managing systems of education provide opportunities for the individual schools and their communities to respond in unique ways to the directives and guidelines laid down by the system. Schools compete for students.

Thinking and Acting Locally and Globally

Recognition that not all school communities are able to operate at the level required for universal student success. Systems establish mechanisms where highly capable schools and individuals provide support to those less capable as a means of improving the system as a whole.

The Core-plus School

The Core-Plus school has a **Core** responsibility of educating the children in its care, and a **Plus** responsibility of supporting the achievement of the educational aspirations of the community in which it is located.

Tony Townsend, 1994

What Helps Students Learn?

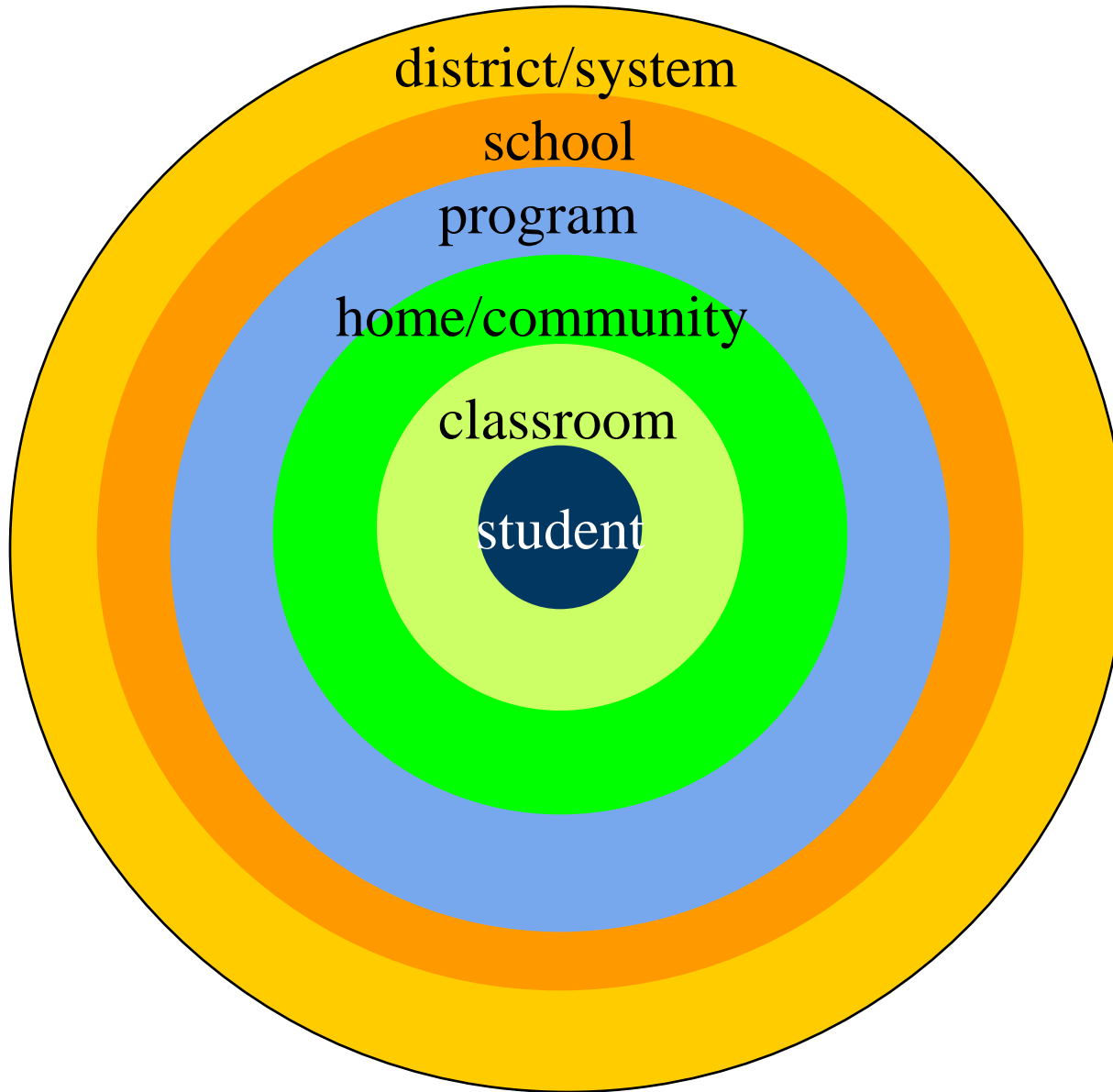
Wang, M.C., Haertel, G.D. and Walberg, H.J.
(1993/1994, *Educational Leadership*, pp 74-79)

Analyzed 179 chapters, conducted 91 research syntheses, interviewed 61 educational researchers, considered 11,000 findings. Identified 28 areas grouped into 6 categories

What Helps Students Learn?

1. Classroom Management
2. Metacognitive processes
3. Cognitive processes
4. Home Environment/Parental Support
5. Student/Teacher social interactions
6. Social/behavioural attributes
7. Motivational/Affective attributes
8. Peer Group
9. Quantity of Instruction
10. School Culture
11. Classroom Climate
12. Classroom Instruction
13. Curriculum Design
14. Academic Interactions
15. Classroom Assessment
16. Community Influences
17. Psychomotor skills
18. Teacher/Administrator Decision Making
20. Parent Involvement Policy
21. Classroom Implementation and Support
22. Student demographics
23. Out of Class Time
24. Program Demographics
25. School Demographics
26. State Level Policies
27. School Policies
28. District Demographics

What helps students learn?



Influences on Student Achievement

Prof John Hattie (Auckland University): Meta-analysis of over 50,000 studies

What are the effect sizes of various aspects of student learning? What are the most important things we can do to change student learning?

- *Reference:* Hattie, J. (2003). ‘Teachers Make a Difference: What is the Research Evidence?’, <http://www.leadspace.govt.nz/leadership/articles/teachers-make-a-difference.php>

Influences on Student Achievement

Influence	Effect Size	Source
Feedback	1.13	Teacher
Student's Prior Cognitive Ability	1.04	Student
Instructional Quality	1.00	Teacher
Direct Instruction	.82	Teacher
Remediation/feedback	.65	Teacher
Student's disposition to learn	.61	Student

Influences on Student Achievement

Influence	Effect Size	Source
Class environment	.56	Teacher
Challenge of goals	.52	Teacher
Peer tutoring	.50	Teacher
Mastery learning	.50	Teacher
Parent involvement	.46	Home
Homework	.43	Teacher
Teacher style	.42	Teacher
Questioning	.41	Teacher
Peer effects	.38	Peers
Advance organisers	.37	Teacher
Simulations and games	.34	Teacher
Computer-assisted instruction	.31	Teacher
Testing	.30	Teacher
Instructional media	.30	Teacher
Aims and policy of school	.24	School
Affective attributes of students	.24	Student

Moderate

Influences on Student Achievement

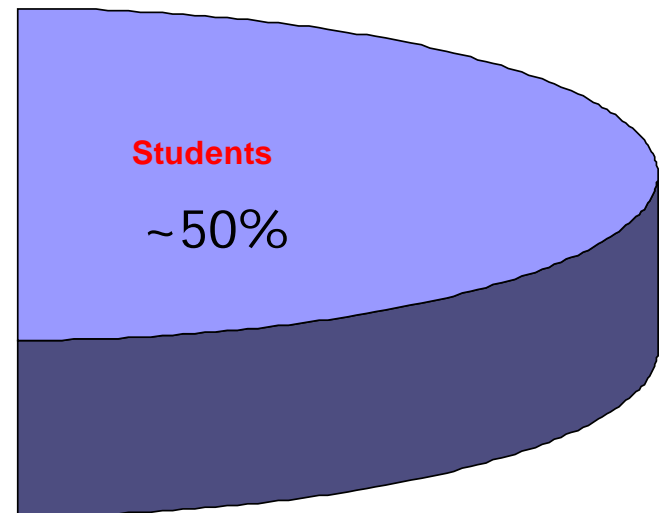
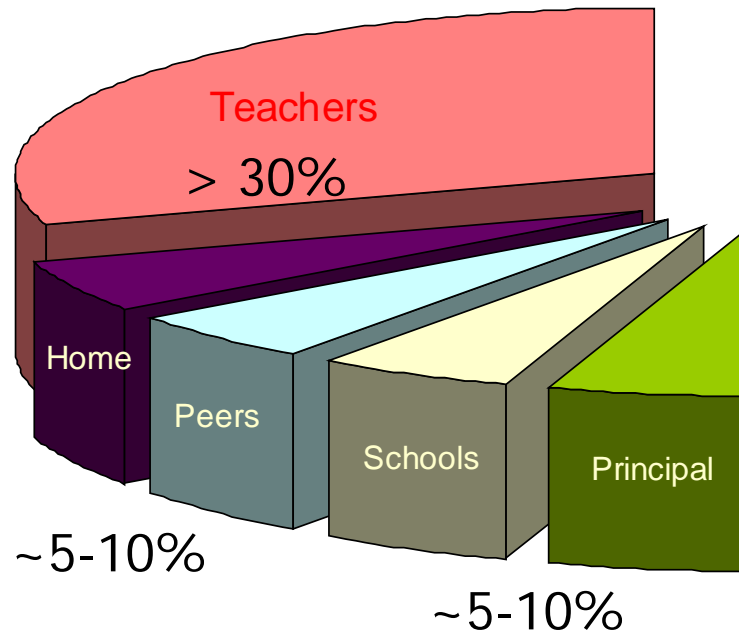
Influence	Effect Size		Source
Programmed instruction	.18		Teacher
Ability grouping	.18		School
Audio-visual aids	.16	<i>Small/Weak</i>	Teacher
Individualisation	.14		Teacher
Finances/money	.12		School
Behavioural objectives	.12		Teacher
Team teaching	.06		Teacher
Physical attributes (class size)	-.05		School
Television	-.12	<i>None/negative</i>	Home
Retention	-.15		School

See also:

Hattie, J. (2007). 'Developing Potentials for Learning: Evidence, assessment, and progress', EARLI Biennial Conference, Budapest, Hungary.

http://www.education.auckland.ac.nz/uoa/education/staff/j.hattie/j.hattie_home.cfm

The Effects of Quality Teaching: accounting for variance in student achievement



What Helps Students Learn?

Hattie (2003):

It is what teachers know, do, and care about which is very powerful in this learning equation.

It's the Teacher ...

‘... the most important factor affecting student learning is the teacher. ... The immediate and clear implication of this finding is that seemingly more can be done to improve education by improving the effectiveness of teachers than by any other single factor’.

Wright, S.; Horn, S. & Sanders, W. (1997). 'Teacher and Classroom Context Effects on Student Achievement: Implications for Teacher Evaluation', *Journal of Personnel Evaluation in Education*, 11, pp. 57-67.

What helps students learn?

1. Classroom Management
2. Metacognitive processes
3. Cognitive Processes
4. Home environment/parental support
5. Student/Teacher social interactions

What helps students learn?

1. The curriculum and how it is presented, the classroom and how it is managed
2. The ability of the student to think and to decide what they think about
3. The relationships that are established between the teacher and the student, the parent and the student, the parent and the teacher and the student and learning

Curriculum

Thinking Globally

Recognition that in the international market, students need to have high levels of education in order to be successfully employed. All students should complete a full school program.

Acting Locally

Strong focus on those elements of curriculum associated with preparing them for further education, including the basic skills and a set of socially acceptable values.

Thinking and Acting Locally and Globally

Recognition that not all students will go on to university and that other skills are necessary for those that will not. As well as the academic program, schools will cater for those who wish to go into the world of work or other types of activity.

Core-plus curriculum

The Core-Plus curriculum is made up of the **Core**, which is the knowledge, skills and attitudes that the education system says are important for everybody and the **Plus**, which are those things that local communities say are important for young people in their community.

Tony Townsend, 1994

The Four Pillars of the Global Classroom

- Education for Survival
- Understanding our place in the world
- Understanding community
- Understanding our personal responsibility

What are the skills we want our students to acquire?

- Inquirer
- Thinker
- Communicator
- Risk-Taker
- Knowledgeable
- Principled
- Caring
- Open-Minded
- Well-Balanced
- Reflective

Primary Years Program, International Baccalaureate

Pedagogy

Thinking Globally

Classroom effectiveness is more important than school effectiveness when it comes to student achievement. Better qualified and more committed teachers lead to higher levels of student achievement.

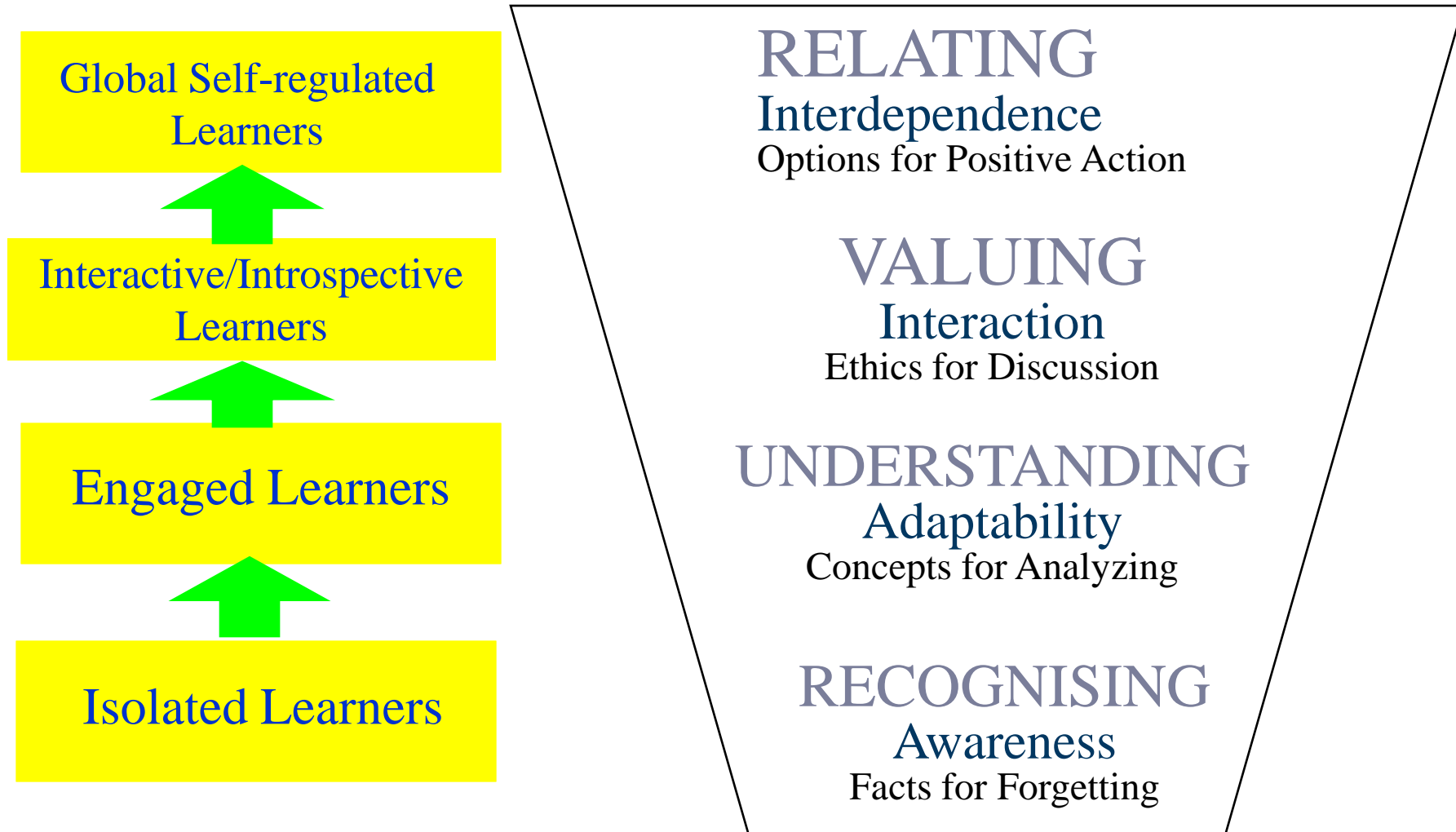
Acting Locally

Strong focus on teaching to the test, especially for students who are struggling. Most teacher professional development focuses on basic skills and ‘proven techniques’ of imparting them.

Thinking and Acting Locally and Globally

Recognition that a recipe approach to teaching will not lead to success for all students. Teachers are given the skills to build strong relationships with students and making the curriculum relevant through a variety of different teaching techniques.

The Relational Learning Model (Otero and Sparks, 2000)



Assessment

Thinking Globally

Recognition that being internationally competitive involves understanding how well students are learning in comparison to others, both locally and globally.

Acting Locally

Strong focus on those elements of the curriculum that are easily measured and are likely to be part of an international testing program. This has led to a higher values being given to some subjects than to others.

Thinking and Acting Locally and Globally

Recognition that to be a fully functioning human being takes more than a particular score on a standardized test. As well as 'valuing what we measure' steps are taken to ensure that we learn to measure other human skills that are equally valued.

Asking Questions to Better Serve Students

- How are we doing?
- What are we doing well?
- How can we amplify our successes?
- Who isn't learning?
- Who aren't we serving?
- What can we do to improve?
- How do we know if it worked?
- What do we do if they don't learn?

What helps students learn?

1. The curriculum and how it is presented, the classroom and how it is managed
2. The ability of the student to think and to decide what they think about
3. The relationships that are established between the teacher and the student, the parent and the student, the parent and the teacher and the student and learning

The Three Dimensions of learning

- The types of materials we use for learning (ie curriculum)
- The way in which these materials are presented (ie pedagogy)
- The climate in which these materials are presented (ie the assessment regime)

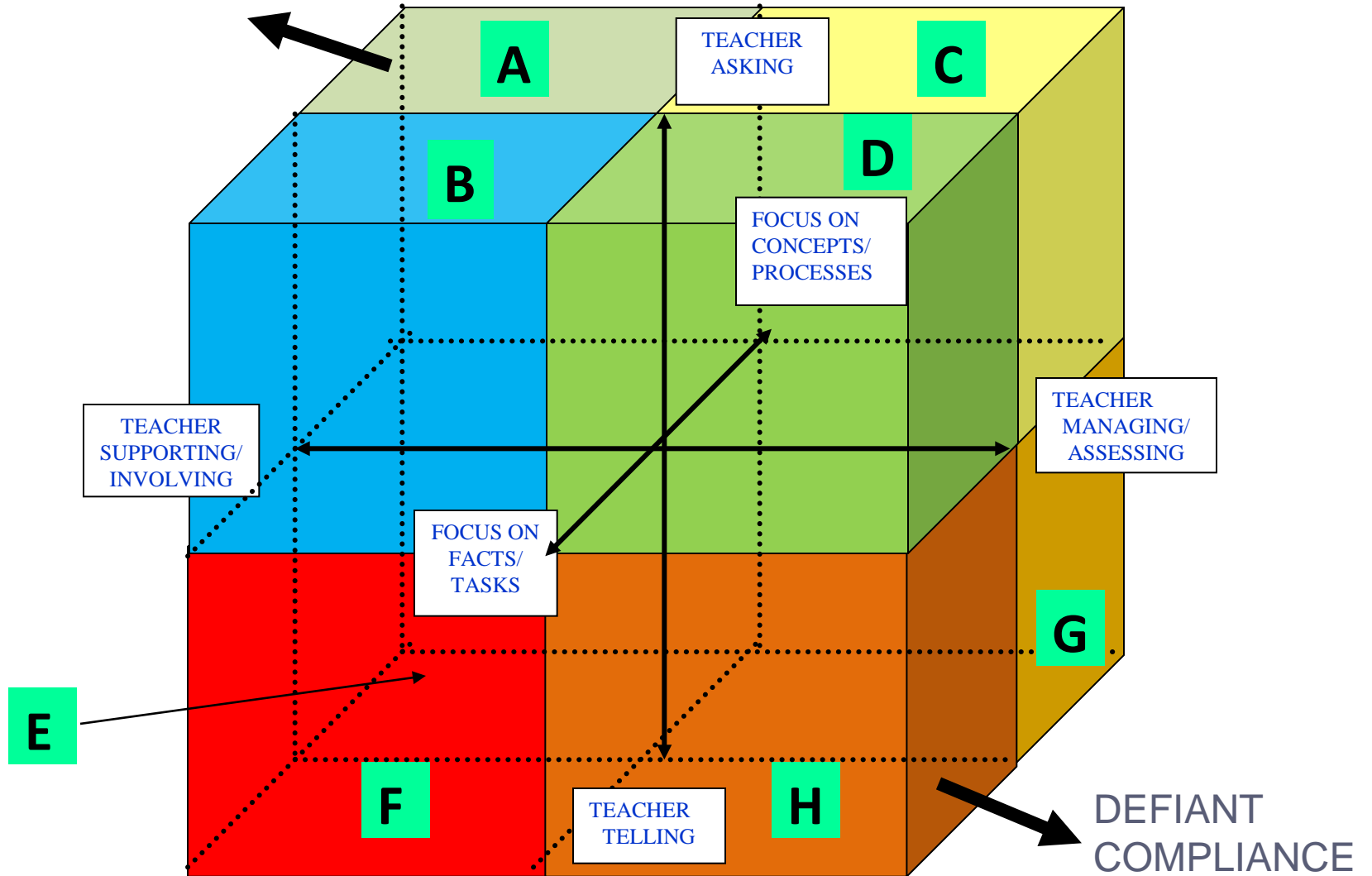
There are two types of teachers, the tellers and the askers.

Teacher Behaviours and Student Responses

	Management	Teacher's approach	Content Focus	Student Response
A	Teacher asking	Teacher supporting	Focus on concepts/processes	Understanding
B	Teacher asking	Teacher supporting	Focus on facts/tasks	Knowledge
C	Teacher asking	Teacher managing	Focus on concepts/processes	Self-doubt
D	Teacher asking	Teacher managing	Focus on facts/tasks	Guilt
E	Teacher telling	Teacher supporting	Focus on concepts/processes	Self-belief
F	Teacher telling	Teacher supporting	Focus on facts/tasks	Clarity
G	Teacher telling	Teacher managing	Focus on concepts/processes	Unquestioned belief
H	Teacher telling	Teacher managing	Focus on facts/tasks	Memorisation

Teacher Behaviours and Student Responses

COOPERATIVE LEARNING



Teachers

Thinking Globally

Recognition that teachers are the most important factor in student learning, apart from the student themselves. An effective school has more effective classrooms and teachers than a school that is less effective.

Acting Locally

Teachers face more and more pressure to achieve student outcomes. Strong focus on improving the quality of teaching through competency approaches. Teachers are expected to have specific measurable skills and to focus on those elements of the curriculum that are likely to boost student outcomes.

Thinking and Acting Locally and Globally

Recognition that a student that does not enjoy being at school and is afraid or unhappy in the classroom will not perform well and that in times of rapid changes teachers need skills for the future rather than those learned in the past. Teachers need to establish the capabilities required to have strong positive relationships and teach in ways that will build student confidence in themselves to be successful learners.

Capacity

Capacity building is concerned with creating the conditions, opportunities and experiences for collaboration and mutual learning

Harris (2001)

From Effective Schools to Effective Teachers

Modern Teachers need to be developed as capable which is seen as moving ‘beyond’ initial competencies. The Capable Teacher is what we should be seeking to develop, encourage and honour as the hallmark of our profession.

Cairns, 1998: 1

Competence and Capability

- Competent teachers can be trained in specific tasks and understandings and can be tested by their level of memorisation of this information. Individual competencies are things that were learned in the past but can be tested in the present. They give no consideration for how the future might change what we need to know or do.
- Capable teachers need to be educated to be able to work in an unknown future. They need adaptability, leadership and decision-making skills. Capabilities are the attitudes and skills that we have today that will help us to succeed in the future.

Capability Learning Model

Three intertwined elements:

- **Ability** (describes both competence and capacity)
- **Values** (the ideals that govern the use of ability)
- **Self-efficacy** (the way people judge their capability to carry out actions effectively)

Teacher Education

Thinking Globally

Recognition that teachers will teach in classrooms that will contain students from all over the world, or alternatively may be trained in one country and end up teaching in another country for most of their career. Teachers will be teaching for a future in which rapid and complex change continues.

Acting Locally

Multiculturalism is taught in teacher education programmes, but the strong focus on having all students reach the identified state or national standards means that most of the time is spent on the basic skills. Teacher education programmes are largely competency based approaches to teacher development.

Thinking and Acting Locally and Globally

Recognition that all students need to be literate and numerate, but that will only happen if teachers can form strong relationships between students, the teacher and the curriculum and each other. Teacher education programmes should encourage all students to have an international teaching experience and focus on expanding teacher capabilities for an unknown future.

Issues for Teacher Capability

- Internationalism (we need to understand that our teachers may have to work with students from any country in the world and may also teach in other countries – this skill is improved by consideration of the values and understandings of cultural differences)
- Ability (improved by structured **professional activity**)
- Values (improved by establishing a common code of values - **professionalism**)
- Self-efficacy (improved by providing teachers with **professional support**)

Leadership

Thinking Globally

International recognition that the role of the school leader is becoming increasingly important in establishing the conditions of high levels of student learning. Leaders now have to respond to rapidly changing economic, social and environmental conditions.

Acting Locally

Strong focus on those elements of management that promote instructional leadership, including the need to understand the law, finance, policy, data analysis and personnel development.

Thinking and Acting Locally and Globally

Recognition that an outstanding leader relies upon the people that he works with and that managing the school can only be successful if team leadership and relationship skills are also developed. Leaders think and act strategically to develop appropriate actions that support school, student and staff development.

Does leadership make a difference? This is a silly question. It is what leaders actually do that matters.

Strategic Intent (Hamel and Prahalad, 1989)

A sense of direction: In many organisations staff do not share a sense of purpose above and beyond the short-term unit performance, because most organisations are over-managed and under-led. Strategic intent provides clarity about ends, but is unspecific about means.

Strategic Intent (Hamel and Prahalad, 1989)

A sense of discovery: Strategic intent offers staff an enticing spectacle of a new destination. It is broad enough to leave room for considerable experimentation in how to reach the destination. It constrains the ‘where’ but not the ‘how’, so creativity is unbridled.

Strategic Intent (Hamel and Prahalad, 1989)

A sense of destiny: The goal must be worthwhile to command the respect and allegiance of all the staff. Strategic intent must stimulate the passion that the staff can make a real difference. It represents an ambition that stretches beyond current resources and capabilities.

Leadership Preparation

Thinking Globally

Recognition that the job of school leader is now too complex and difficult for a single person to achieve. There are now a number of international research activities comparing school leadership in various countries. Changing technology and demographic conditions make the task of school leadership increasingly complex.

Acting Locally

Formal educational leadership preparation programs focus on developing school leaders that are capable of operating within the school system that trains them. Training is mostly associated with preparing formal school leaders that manage their schools and the operations within them.

Thinking and Acting Locally and Globally

School leadership programs offer opportunities for a range of leadership development activity from junior staff to senior leaders in an effort to both spread the responsibility for leading the school and to establish a succession planning model in schools. School leaders are trained to think strategically about how best to ensure universal student success.

Nutrients for a hospitable learning culture

- being valued
- being encouraged
- being noticed
- being trusted
- being listened to
- being respected

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