EFF	ECTS ? +++ = very positive	e ++ quite positive	0 no effect
– ne	egative quite negative	very negative	
1.	<b>Mentoring under-aspir</b>	ring teens	
2.	Five years' help to 'at a	risk' teens	
3.	<b>Summer camps for 'at</b>	risk' teens	
4.	<b>Reducing Class size fro</b>	om 35 to 20	
5.	<b>Computer Assisted Ins</b>	truction	
6.	<b>Cross-age Tutoring</b>		
7.	Increased time on basi	cs	
8.	<b>Teaching assistants</b>		
9.	<b>Integrated Learning Sy</b>	stems ILS	
10.	<b>Driver training progra</b>	mmes	
It's the DATA that counts!			



#### What is our task?

## To make a BETTER WORLD

## Who else ... if not educators....

....who deliver, to every child,

15,000 hours of compulsory treatment?





#### Short summary: Results of **DfES mistakes:**



E.g. One student to another:" Do you want help?Tell her you are a C/D borderline"

#### **DfES mistakes (continued):**

2) Incorrect value added calculations: *Ignoring subject difficulties!*- This

enhances the League Table position of schools that put students in for examinations in easy subjects

and mislabels as 'below average' schools with strong maths, science, and Foreign Languages

Net effect: decreased in enrolments in maths., science and FL. - - a national crisis. 'melt down'..

#### **Subject difficulties**

Our conclusions, based on 1993 data from ALIS were **confirmed** by **Dearing report** using three years' **1993, 1994 and 1995** of the entire national data for England, held by the DfEE Sir Ron Dearing's .. Review of Qualifications for 16-19 Year Olds 1995 annex

- "Replication of the Fitz-Gibbon and Vincent work shows that, broadly speaking, the general pattern of variation across subjects reported by these authors is confirmed by the national data" (p.4)
- "The findings of Fitz-Gibbon and Vincent that, among both boys and girls taking 3 A levels, those who had attained a higher average GCSE score tended to opt for science subjects, **are confirmed**.
- "Fitz-Gibbon and Vincent also reported that higher .. scores were obtained by students taking mathematics and science A levels. The national data confirm this."

[The report, available from SCAA/QCA publications 0181 867 3299:Fitz-Gibbon, C. T. and L. Vincent (1994).Candidates' Performance In PublicExaminations in Mathematics and Science.London: School Curriculum andAssessment Authority]Assessment Authority





#### **REGRESSION SEGMENTS CAN ALSO SHOW TRENDS OVER TIME**



#### **DfES mistakes (continued):**

- 3) League Tables :
- Exclusions went up 600%.
- School is the wrong unit of analysis.
- If anything is reported it should be the Value Added *in each Curriculum area*.
  - **'failing schools' = re-opened... but with which students... e.g Blakelaw school in Newcastle**

## THE SCHOOL IS THE WRONG UNIT OF ANALYSIS

Using a model that recognised the three level hierarchy of *pupils* taught within *classes* within *schools* suggested most of the variation was at the class level for Mathematics but not for English.

Table 17Proportion of variance at each level:Mathematics

Level	proportion of variance 'accounted for'	
School	15%	
Class	43%	
Pupil	42%	

Table 18Proportion of variance at each level: English

VINCENT

1997

Level	proportion of variance 'accounted for'
School	12%
Class	34%
Pupil	54%

Classroom effect nearly **three times** as large as the school effect

#### **RECENT REFERENCE TO OUR WORK\*:**

"The CEM Centre.... in addition to student achievement scores, also compares the attitudes and aspirations of students with **Similar Other** those of students in similar schools, as well as the nature of the teaching process.

## There are NO similar schools...

Too complex a profile..The school is the wrong unit of analysis.... Classrooms account for about 3 times as much variation as schools

\*From the Netherlands (Visccher)

## 'LEAGUE TABLES', 'best schools'...etc

**'League tables are a cancer on the body of education.... in bringing in a huge amount of bad practice.** 

They put pressure on schools to enter good pupils for an unnecessary number of

exams.

That's not education - that's cramming.'

Martin Stephen, High Master of Manchester Grammar School, which came top of the GCSE (age 16)league tables.

#### **DfES mistakes (continued):**



4) Failure to ensure fair examinations - e.g. the A-level scandal, names on papers, schools' names too, papers marked by known examiners, all from one school together... etc. Prejudice must be made impossible - as we recommended to QCA

5) Initiatives: *Haven't worked*!







# Chances graphs -Advanced level Chemistry 1996



#### "value added" = relative progress

= [examination result] minus [average for similar students]



#### "value added" = relative progress

= [examination result] minus [average for similar students]



#### Value Added National Project- our 2 year project with the government, SCAA 1995 -1997

**Chapter 6 "Wider issues" : reported problems arising from publication** 

Can be downloaded from website www.cem.dur.ac.uk

Principals had commented on all but one of the negative effects of official published performance indicators







# My own experience of inspectors, at age 13

That's funny, we're having yesterday's maths. lesson again

### Deeply annoyed inspector We'd have asked pupils and found that out!"



# WELL.... What would a 13 year old have said - torn between loyalty and honesty? Anyway... Half the class didn't know it was yesterday's lesson.

#### **DEMING: "Drive out fear"**

• "Those working in fear try to withdraw from the attention of those of whom they are afraid."

#### PROBLEMS MUST BE SURFACED ... NOT HIDDEN

STANDARDS have NOT risen - except in primary school numeracy....

**Report of the Engineering** Council \* iune 2000 **CONFERENCE:** At least 60 university departments of Maths. Physics and Engineering ..... Unanimous..... •...strong evidence...of a steady decline over the past decade of fluency in basic skills...and ..level of preparation'

\* 10Maltravers St. LONDON WC2R 3ER

#### From Engineering Council report: Data of Professor J.Mathew Dept of Physics University of York



#### THE TIMES Wed June 25th 2003

**School reforms force out teachers** The number of teachers leaving schools has nearly doubled since **Tony Blair began his crusade on** education

#### THE TIMES Wed June 25th 2003

#### "Workload,

### the pressure of government reforms

and feelings of helplessness over pupil indiscipline

all contribute to the rise....

Since standards have NOT risen in an area of GREAT CENTRAL CONTROL --- we need to stop and think.....

#### WHY ARE WE SO INCOMPETENT?

## **CEM Centre AWARDS**

#### -- David Blunkett

• For the most initiatives

 based on the *least* evidence

A decade of 'driving up standards' **HASN'T WORKED!** except for primary school numeracy ...BUT we are top of one League Table in Europe

Teenage drunkenness and violence

## Martin Sixsmith TV programme on spinning

"No 10's special advisers (are) amateurish and a hindrance to good government."

quoting Sir Alistair Morton, head of the Channel Tunnel project and strategic planning for Britain's railways

## ONE TASK

## ONE METHOD...

#### **SCIENCE** = the method

**Evidence** rather than authority

Stringent criteria for the quality of evidence Quantification: - a sense of magnitude Problem solving rather than blaming Wide dissemination of high-quality information

#### **SCIENCE = A SYSTEM THAT WORKS**

# Values needed also..... • The removal of unnecessary pain Karl Popper

UPDATE: Select committee of House of Commons has called for "stringent external evaluation of the soundness of Ofsted's methods.."



Official, government monitoring ...... Conflict of interest -> more grade inflation - -see TES gaming...curriculum distortion (even exclusions, cheating...) "Wherever there is fear, we get the wrong figures" W.Edwards Deming

Professional systems (e.g.from the CEM Centre)

Creates a "RESEARCH ETHOS" contact with reality, good science problem surfacing >>> problem solving



# But personal experience *is* sometimes enough

# i.e. Not every problem requires an experiment. An example, from teaching:

## "I haven't got a pencil...."













#### **Evidence-base:** Yellis UNDER-ASPIRERS' EXPERIMENT 1999 - results

Effect Size = -0.4

ie value added was better if under-aspiring student was

not reported to the school

	Average		
	Residual		
	N	Mean	SD
NOT named	59	55	.79
named	61	86	.83

### A WARNING TO US ALL....

There are many examples of good intentions resulting in bad outcomes

#### And how do we create a civil society?

## **"REFORMS AS EXPERIMENTS"**

 How about competition to deliver among the various providers...?

• E.g JARVIS

EFFECTS ? +++ = very positive ++ quite positive 0 no effect			
- negative quite negative very negative			
1. Mentoring under-aspiring teens			
2. Five years' help to 'at risk' teens	-		
3. Summer camps for 'at risk' teens			
4. Reducing Class size from 35 to 20	+		
5. Computer Assisted Instruction	++		
6. Cross-age Tutoring	++++		
7. Increased time on basics	+		
8. Teaching assistants	0		
9. Integrated Learning Systems ILS	-		
<b>10. Driver training programmes</b>			
It's the DATA that counts!			

Those who do the job know the job and are best able to improve the job Principals and teachers...and the CEM Centre is a research arm - - here to help

Reported	What works? results of expt.s	
Effect Sizes	r Treatment	
0.6	cross-age tutoring	Cohen, Kulik & Kulik,
0.6	cross-age tutoring	Fitz-Gibbon 1975
0.4	cross-age tutoring	Wang, Haertel & Walberg, 1993
0.8	cross-age tutoring	Levin et al, 1985.
-0.5	computer assisted ILS	Wood For BECTa
0.2	computer assisted instruc	tion Levin et al, 1985.
0.1	reduced class size	Levin et al, 1985.
0.2	reduced class size	TENNESSEE
0.03	more time/back to basic	<b>S</b> Levin et al, 1985.
0.2	Primary schools numer	racy project

## SCHOOLS....

#### **Places which**

young people go to in order to watch

older people work STUDENTS are your second best resource



If tutor is right-handed then tutee sits on left

#### ATTITUDES

- •Enjoyment
- •Empathy
- Shyness overcome
- •Group-think reduced
- •Self-esteem, sense of efficacy increased

### ACHIEVEMENT

•Tutors learn by teaching

•Tutees learn from a personal tutor

•Teachers are freed to diagnose and prescribe

#### BEHAVIOURS

•Discipline a doddle

•Attendance improved

•Hard work - - - time on task

For the things we have to learn before we can do them, we learn by doing them: men become builders by building and lyre players by playing the lyre; so too we become just by doing just acts, temperate by doing temperate acts, brave by doing brave acts. Catch them being good **Herbert Read quoting Aristotle** Practice makes perfect 'Forced compliance' in psychology Children and young people SHOULD ENJOY school

It is their life.... For some, their only life...

And teachers, too, should enjoy! STRESS KILLS

#### BE WISE.....

One task.... To make a better world



One method: the slow, careful, dispersed (not centrally controlled), democratic EFFECTIVE methods of science...

#### BE WISE



Please.... For teenagers like Mauree and for all our grandchildren

## Curriculum, Evaluation and Management Centre

University of Durham

Carol.Fitz-Gibbon@cem.dur.ac.uk

Web site http://cem.dur.ac.uk/

MEASURE WHAT MATTERS

#### THANK YOU for being here.....

