



OLSEL Baseline Data

Measuring the gains

using effect sizes

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The Session Outline

This session will cover:

- Why the need to collect baseline data
- Calculating “Effect Sizes”
- How to use the OLSEL spreadsheet
- Test options

ACKNOWLEDGEMENTS

Content on Effect Sizes (for this session) has been taken directly from the resource: *Visible Learning** by John Hattie (2008).

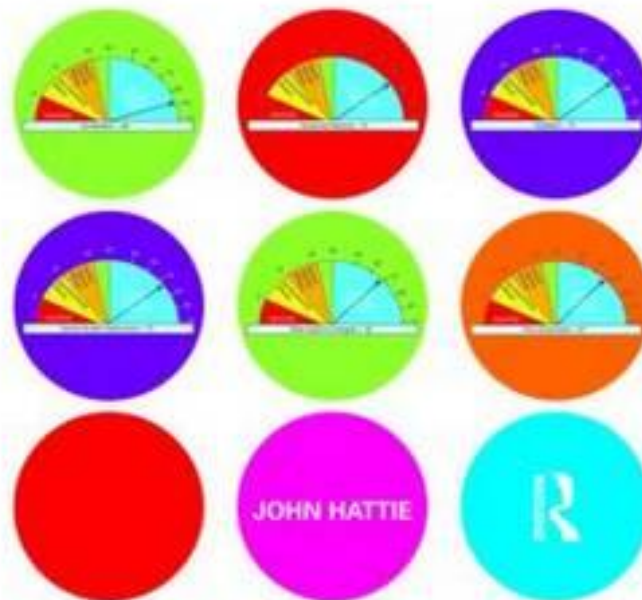
The author (John Hattie) is currently Director, Melbourne Education Research Institute (MERI) at the University of Melbourne, *formerly of The University of Auckland*.

* Available online through Fishpond, Amazon...

VISIBLE LEARNING

A SYNTHESIS OF OVER 800 META-ANALYSES
RELATING TO ACHIEVEMENT

"Reveals teaching's Holy Grail"
The Times Educational Supplement



The Rationale

Student Services seeks to promote inclusive practices that build capacity in schools to **respond to the needs of students with learning difficulties**.

The needs of students can only be met when teachers have the capacity to identify, describe and analyse student behaviour in order to **implement effective learning and teaching** options.

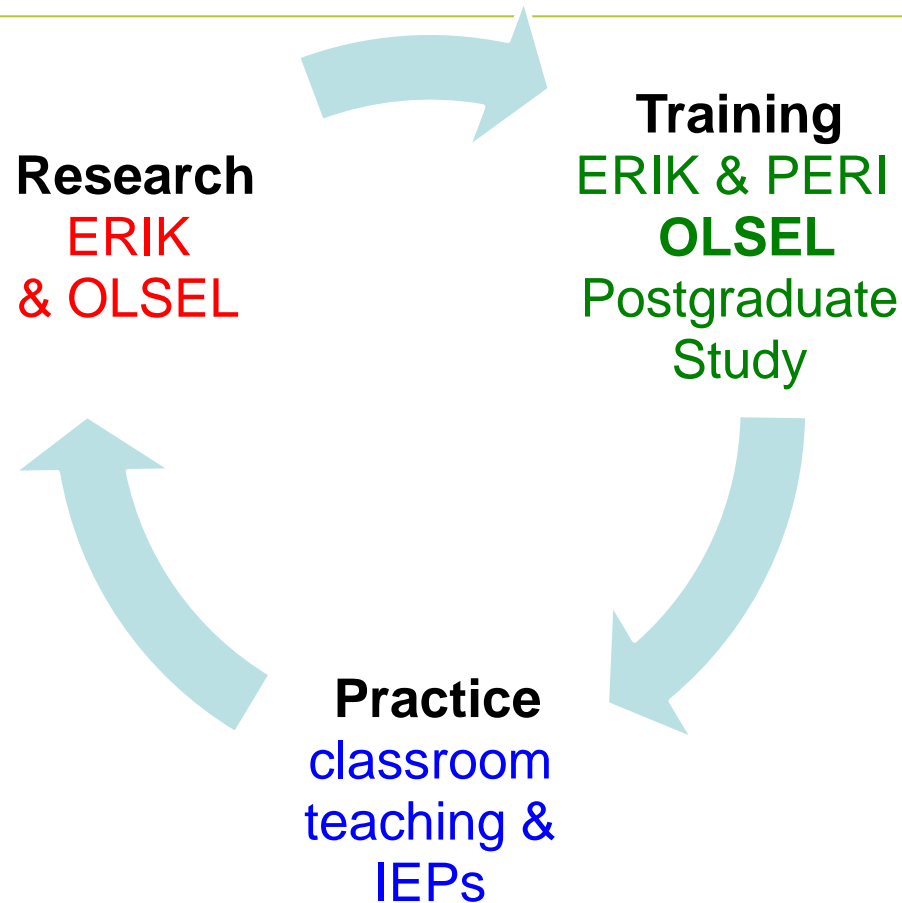
Effective learning and teaching (instruction) can be measured **by improved student outcomes**.

“The only way to improve outcomes is to improve instruction.”

2007 McKinsey report

How are CEOM addressing the need to **improve instruction** in early literacy? ... Training ...

CEOM System Approach



Teaching practices should be evidence-based & data-driven.

CEOM Training Components

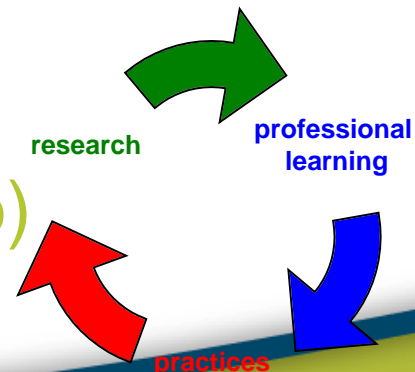
1. Oral Language Supporting Early Literacy (OLSEL)
2. Enhancing Reading Intervention Knowledge (ERIK) program; and Phonological Early Reading Instruction (PERI); and
3. Postgraduate study in Early Literacy Intervention & Oral Language. *Postgraduate in Early Literacy Intervention* (UniMelb)
4. **More Support for Students with Disability (MSSD)** *Postgraduate in Educational Intervention* (UniMelb)

Oral Language Supporting Early Literacy (OLSEL)

The OLSEL program was introduced into Catholic schools in 2007.

2007 - 2013

- OLSEL training 91 schools, 500+ teachers/staff
- Development of OLSEL folder / handouts
- Development of OLSEL [website](#)
- Postgraduate study -
 - Oral Language Learning (UniMelb)



Discuss at tables

Why do we need to collect baseline data?

What baseline data could you collect for OLSEL?

Quality of the Intervention

Why monitor the quality of a program?

Intervention Integrity, the degree to which an intervention is implemented as intended (Gresham, 1989).

Gresham, F.M. (1989). Assessment of treatment integrity in school consultation and pre-referral intervention. *School Psychology Review*, 18, 37-50.

Intervention Integrity

Teachers in schools are charged with the task of maintaining the integrity of the OLSEL program, to maintain the recorded gains. (Research 2009 – 2010)

One way of monitoring the integrity of the OLSEL program is to monitor student progress.

Monitoring Student Progress

One way of monitoring student progress is through **effect sizes**.

In other words “What effect has the teaching (intervention) had on student outcomes.

Questions

1. What is an effect size?
2. Why use effect sizes?
3. What is a Standard Deviation?
4. How can schools use effect sizes?

Effect Sizes ($d =$)

1a. What is an effect size?

An effect size provides a common expression of the magnitude of study outcomes, across variables, such as improving reading levels in accuracy and comprehension.

An effect size of 1.0 indicates an increase of one standard deviation (1SD) on the outcome. One SD increase is typically associated with advancing students' reading levels by two to three years, improving the rate of learning by more than 50% (Hattie, 2008).

Effect Sizes ($d =$)

1b. What is a reasonable effect size?

Cohen (1988) suggests that:

$d = 0.2$ is small, $d = 0.5$ is medium, $d = 0.8$ is large

Whereas the results from Hattie's meta-analyses could suggest when judging educational outcomes:

$d = 0.2$ is small, **$d = 0.4$ is medium**, $d = 0.6$ is large

Reference: Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Hillsdale, NJ: L. Erlbaum Assoc.

John Hattie - Visible Learning

What is John Hattie on about, in a nutshell?

15 years of research

800+ meta-analyses

50,000 studies

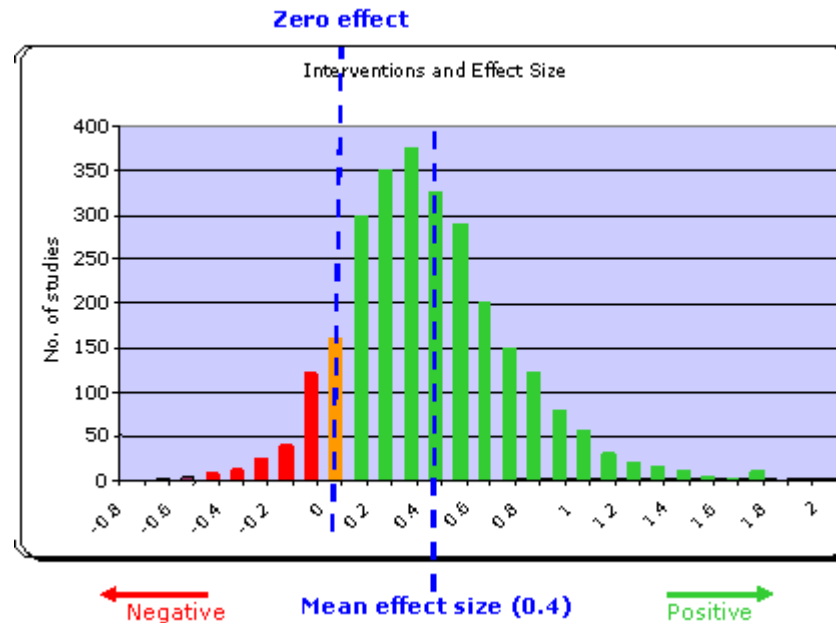
200+ million students

Outcome:

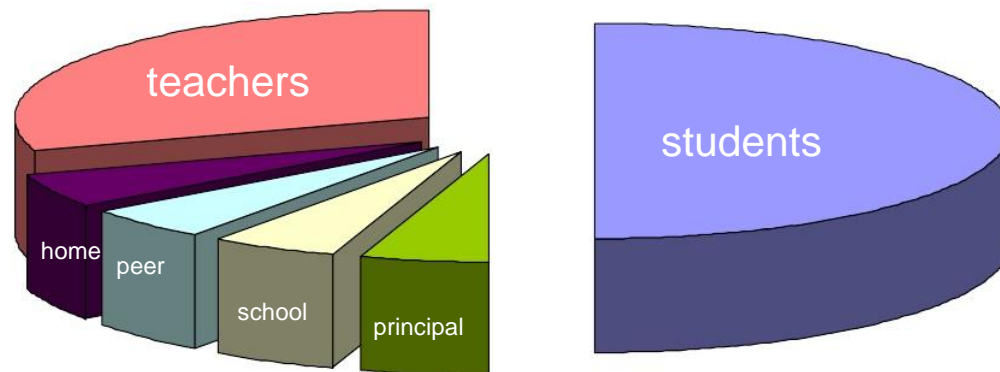
What are the major influences on student learning?

Hattie's Effect Sizes ($d =$)

“The list”



Hattie – what matters?



Influence	Effect Size	Source of Influence
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• Progress feedback	1.13	Teacher
• Prior cognitive ability	1.04	Student
• Instructional quality	1.00	Teacher
• Direct instruction	.82	Teacher
• Remediation/feedback	.65	Teacher
• Students disposition to learn	.61	Student
• Class environment	.56	Teacher
• Challenge of Goals	.52	Teacher
• Peer tutoring	.50	Teacher
• Mastery learning	.50	Teacher
• Parent involvement	.46	Home
• Teacher Style	.42	Teacher
• Questioning	.41	Teacher

Influence

Effect Size Source of Influence

• Peer effects	.38	Peers
• Advance organisers	.37	Teacher
• Simulation & games	.34	Teacher
• Computer-assisted instruction	.31	Teacher
• Testing	.30	Teacher
• Instructional media	.30	Teacher
• Aims & policy of the school	.24	School
• Ability grouping	.18	School
• Finances/money	.12	School
• Team teaching	.06	Teacher
• Physical attributes (eg. class size)	-.05	School
• Television	-.12	Home
• Retention	-.15	School

John Hattie - Visible Learning

The formula

$$\text{Effect size} = \frac{\text{Average (post) - Average (Pre)}}{\text{Average Standard Deviation (the spread)}}$$

(*d*)

Effect Sizes ($d =$)

2. Why use effect sizes?

- To compare progress over time on the same test.
- To compare results measured on different tests.
- To compare different groups doing the same test.

Standard deviation (*SD*)

3. What is a Standard Deviation?

The standard deviation is a measure of the average spread of scores about the mean (average) score; almost all scores lie within three standard deviations of the mean.

Standard deviation (*SD*)

A normal curve

Spreadsheet of OLSEL data

Sample

OLSEL website link

Spreadsheet of OLSEL data

Blank

Effect Sizes (d)

4. How can schools use effect sizes?

Discussion at tables

The Joy of Statistics

4.48 mins

<http://www.youtube.com/watch?v=jbkSRLYSojo>

TESTS

Testing what?

What tests?

TESTS

Some available **ORAL LANGUAGE** tests

- Record of Oral Language
- Clinical Evaluation of Language Fundamentals (CELF –IV screener)
- Peabody Picture Vocab Test–(PPVT-IV)

TESTS

Some available **READING** tests

- Reading Progress Test (RPT)
- Progressive Achievement Test – Reading (PAT-R)
- Other tests – (SPAT, Burt, SAST ...)

Other Tests

Tests

Reading Progress Test (RPT)¹⁹⁹⁶

- Seven tests for ages 5 to 11 years
- Reading Comprehension
- 40 – 50 minutes to administer
- Whole group administration
- Australian Norms
http://www.acer.edu.au/documents/ACERPRESS_rpt1.pdf
- Purchase through ACER

Reading Progress Test (RPT)¹⁹⁹⁶

- Administration and
- Test Booklets
 - Literacy Baseline
 - RPT 1
 - RPT 2
- [Link](#)
- [Norms](#) – Standard Scores, percentiles, stanines (2000)

Reading Progress Test (RPT)¹⁹⁹⁶

Questions about RPT

Progressive Achievement Test – Reading (PAT-R: 4th Ed 2008)

- Tests for ages 5 to 15 years
- Comprehension, Vocabulary & Spelling
- 40, 25, 20 minutes to administer
- Administration: Prep (Individual) & Whole
- Common scale, Australian Norms
- A range of text types
- Purchase through [ACER](#)

Question time & wrap up

Questions

Oral Language Supporting Early Literacy (OLSEL)

OLSEL [website](#)

Spreadsheet of OLSEL data

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