What Works for Learning & Teaching: Promoting Evidence Informed Practice at a System Level

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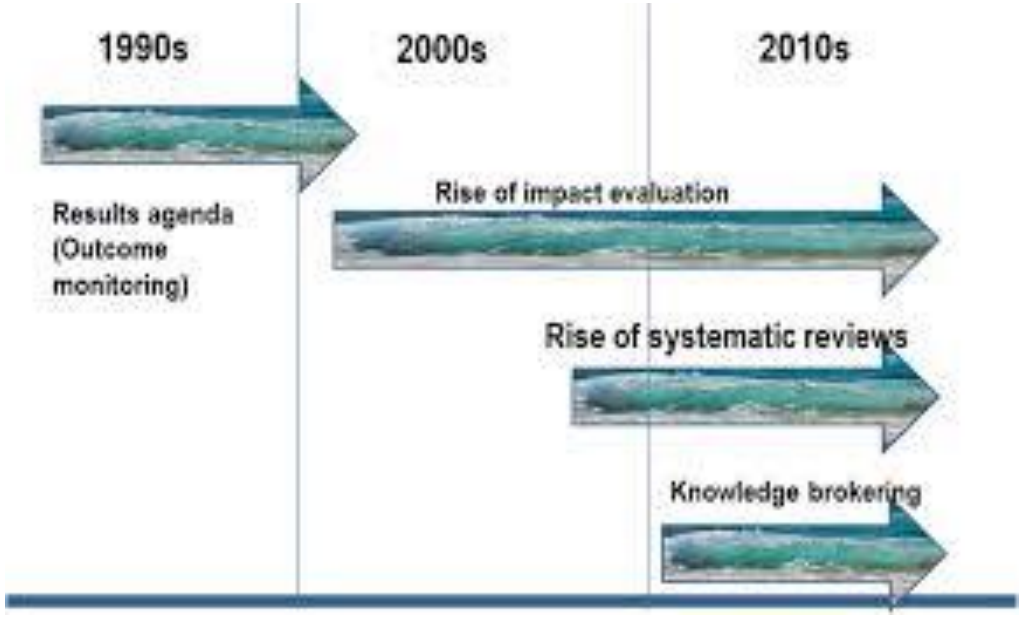
University of Melbourne

Evidence-Based Practice International Conference
Hong Kong Shue Yan University, Oct 2019

It’s a very good place to start



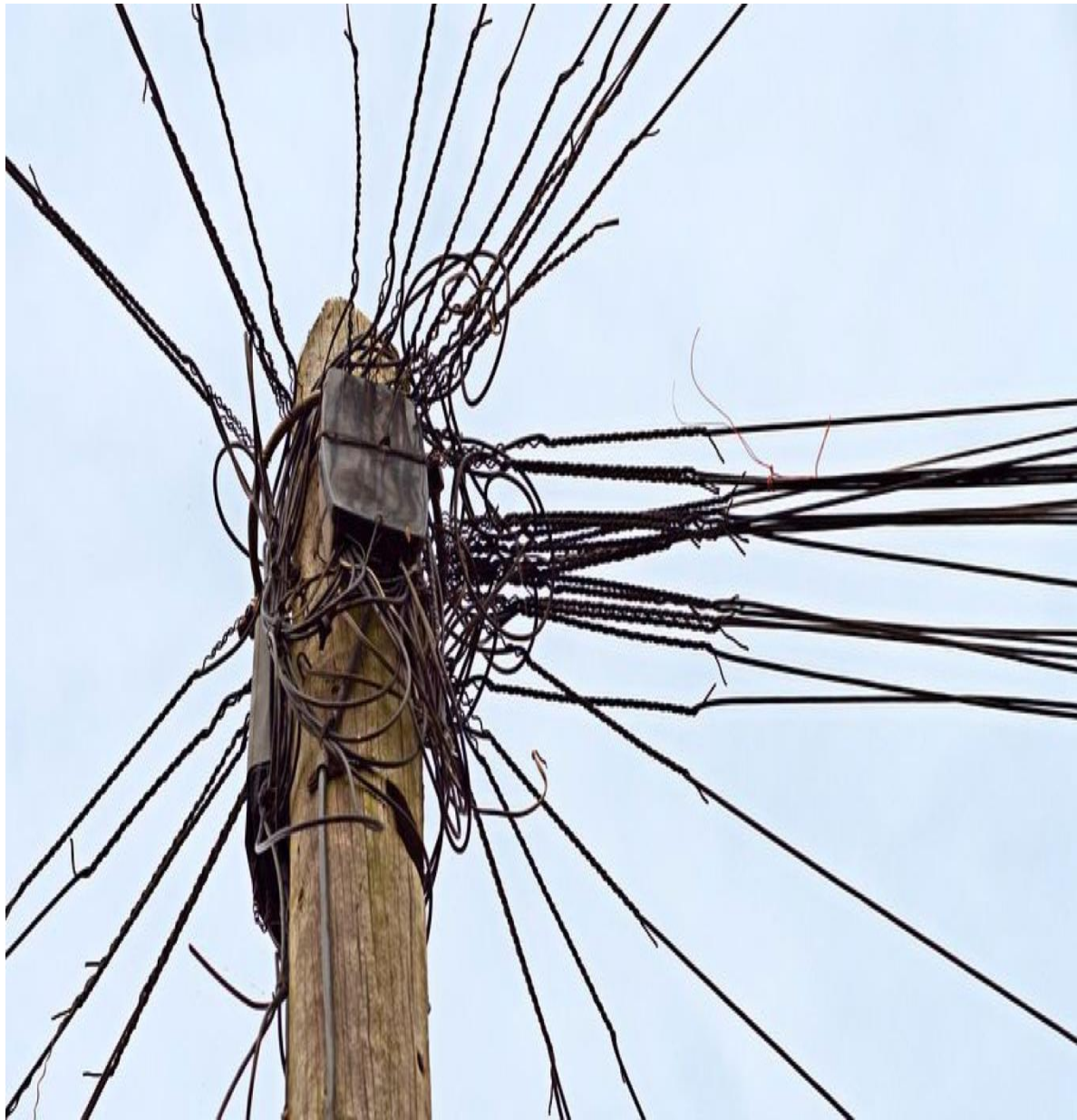
Evidence base use

- Teachers aren't using evidence that we promote
- Questionable use at system level
- What constitutes evidence is confusing
- Promoting Evidence base teaching doesn't appear to have an impact
- Evidence based institutions have little impact
- Who's using the evidence?
- Why continue???

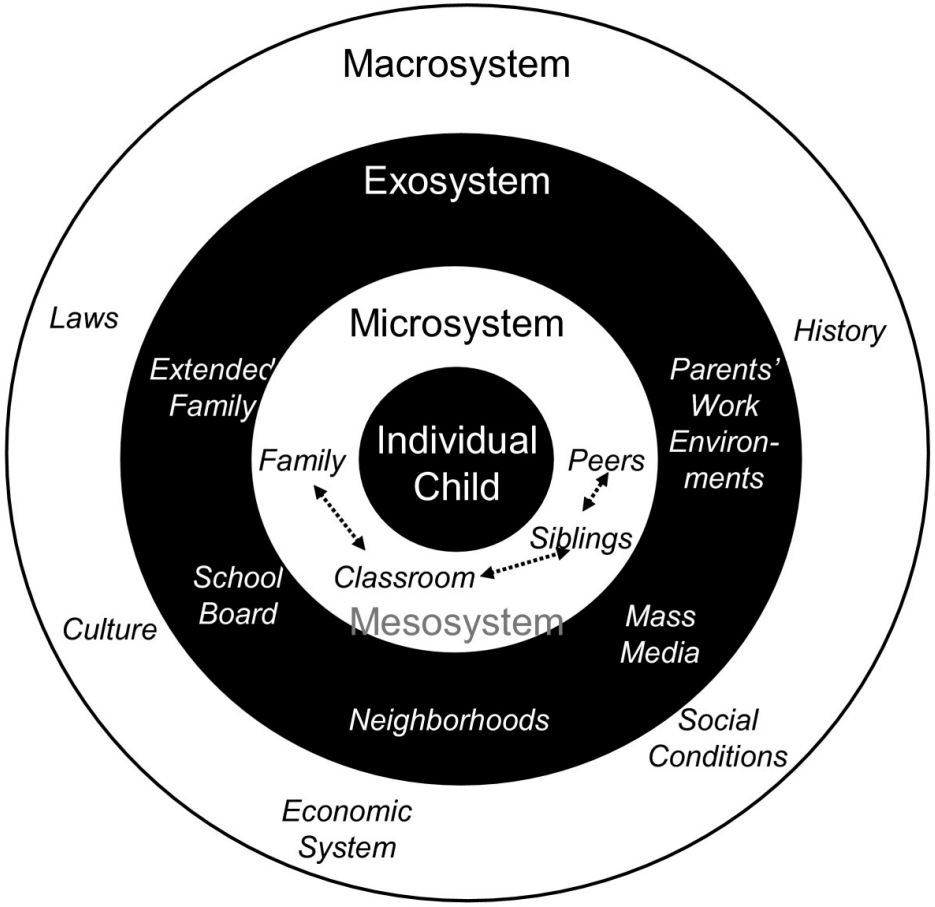
Because it can-- Its' about use and relevance

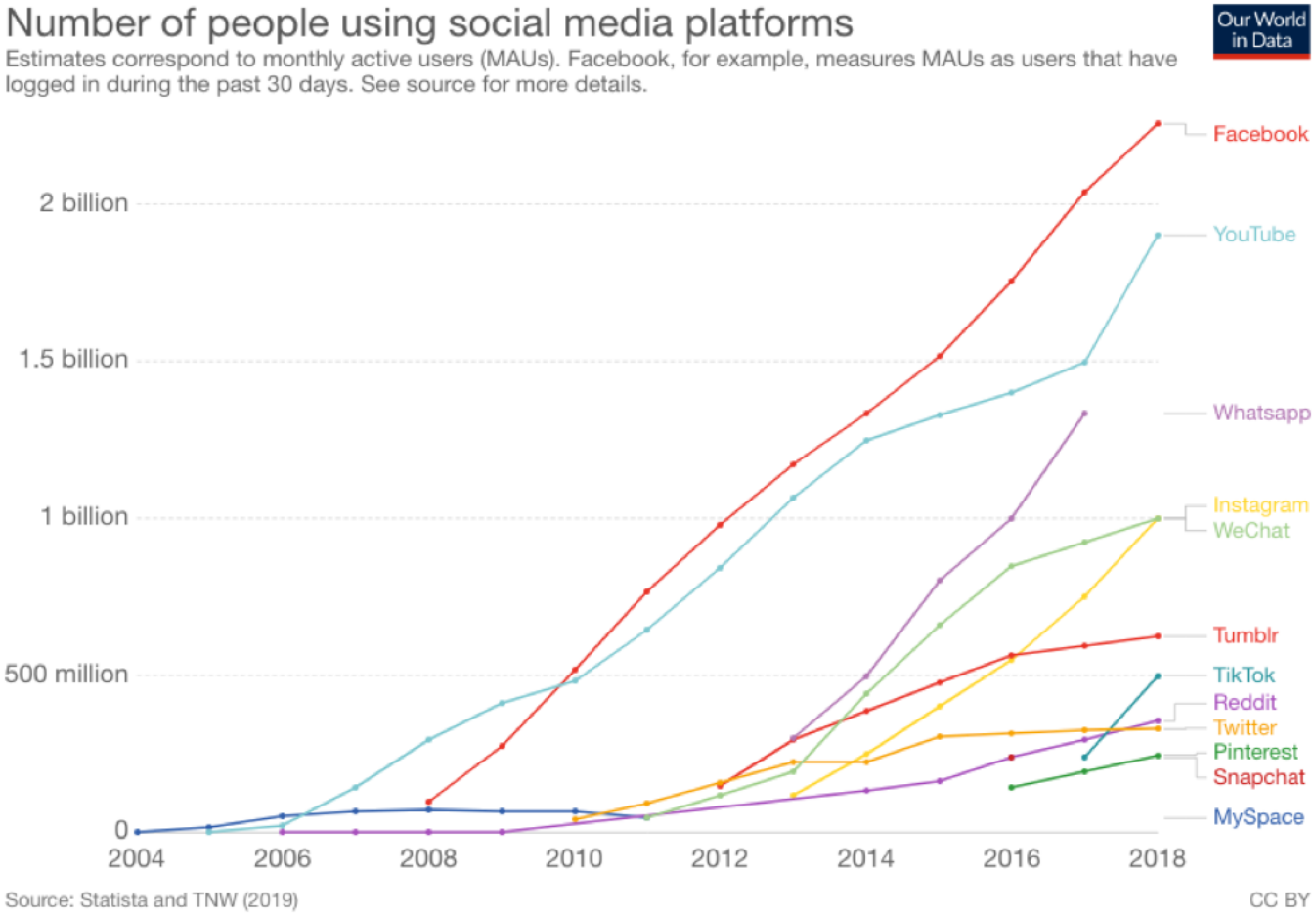
What do we mean by evidence? & Where is it?

- Peer reviewed journals
- Evidence repositories & clearinghouses
- Online communities of practice and education peak organisations
- Policymakers
- Educators, school leaders, parents and communities
- Websites and social media



Systems thinking



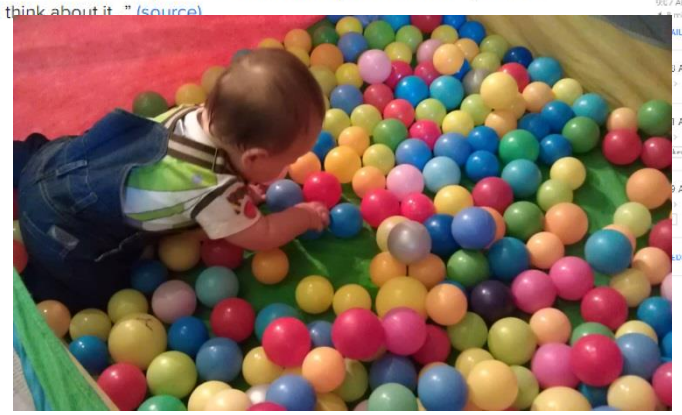


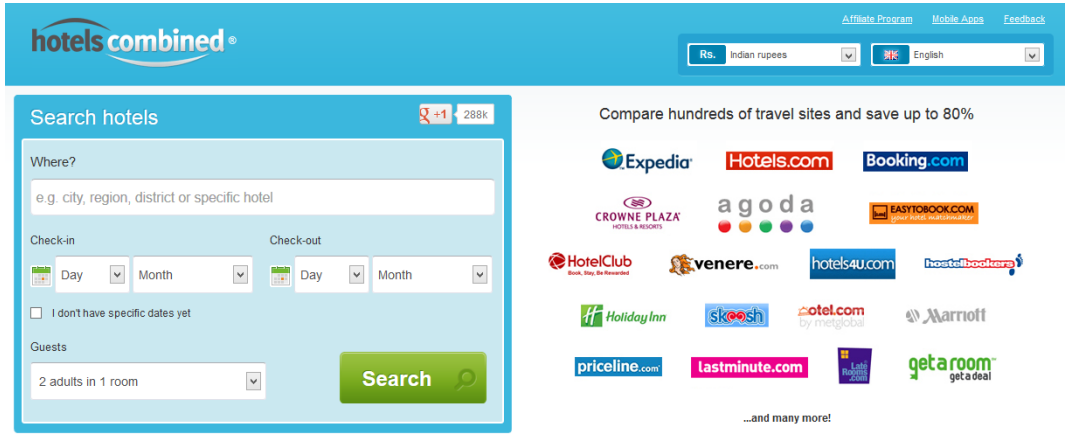
Data and evidence are everywhere

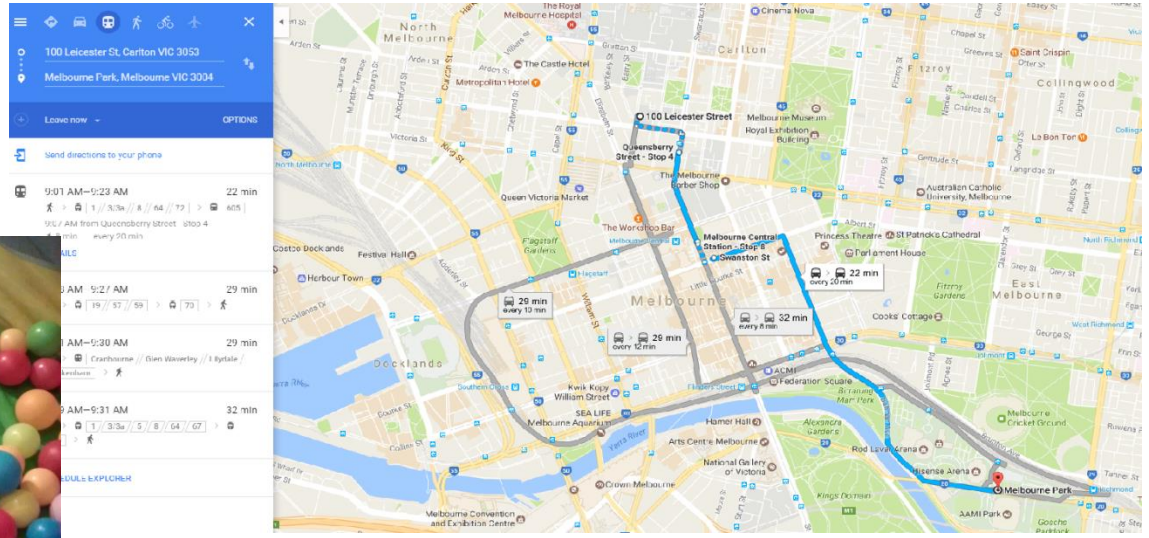
11. McDonald's in Financial District, Manhattan

yelp.com

"I am a fan of the big mac, and this place served what will be, until my dying day, the best big mac ever consumed or concocted in the history of mankind! Any presentation of the big mac, here, and forever more after, no matter how audacious, whether Bobby Flay or Guy Fieri trying to match it on the food network, no one could remake that big mac the way I enjoyed it... no one! I mean, it's been three years since I had it, and I still think about it..." (source)



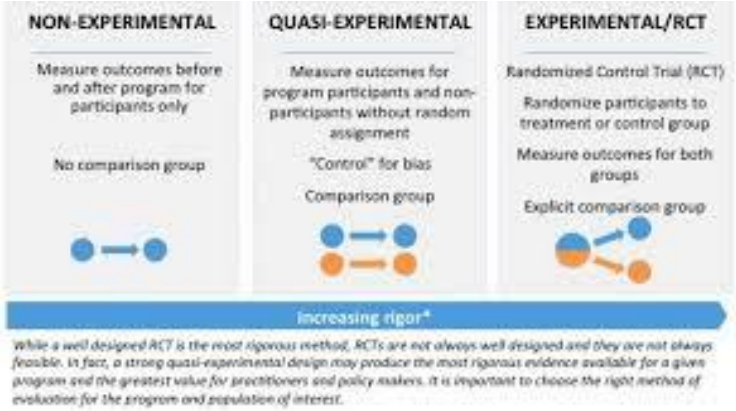


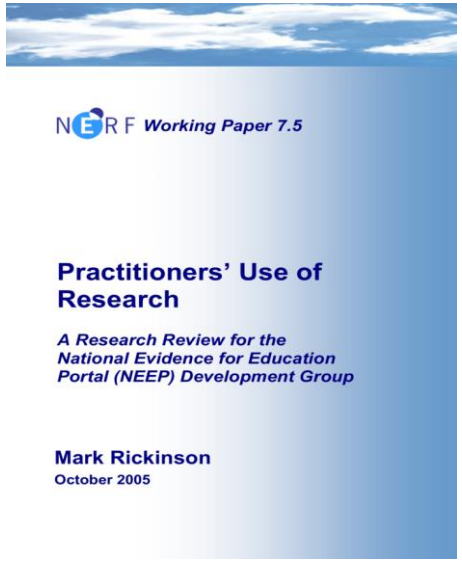


If we find it, how do we know if it's quality?

- Teachers: 'You don't realise I'm a bottom feeder, I don't get to make decisions- I just get told to do'
- ' I need help how to do'
- Pinterest and google most popular search engines
- No suggestion of assessment of quality of evidence
- Researchers: 'I don't know how to get this great research to the classroom'-
- 'I don't know what they want'
- Leaders & Principals do seek & use evidence to some extent but don't consider quality

What's real evidence in education?





Want more information?

Australian Government
Department of Education and Training

Home

Promoting evidence uptake in schools: A review of the key features of research and evidence institutions

Document library

For the Department of Education and Training.

View this document as...

DOCX (3.58 MB)

PDF (1.34 MB)

Information Publication Scheme (IPS)

Freedom of information disclosure log

How to make an FOI request

The Review panel commissioned one research project to inform the consideration of a national research and evidence institute.

The Review panel commissioned one research project to inform the consideration of a national research and evidence institute. The University of Melbourne was commissioned in November 2017 to research the development and implement of research and evidence bodies for the Review's final report.

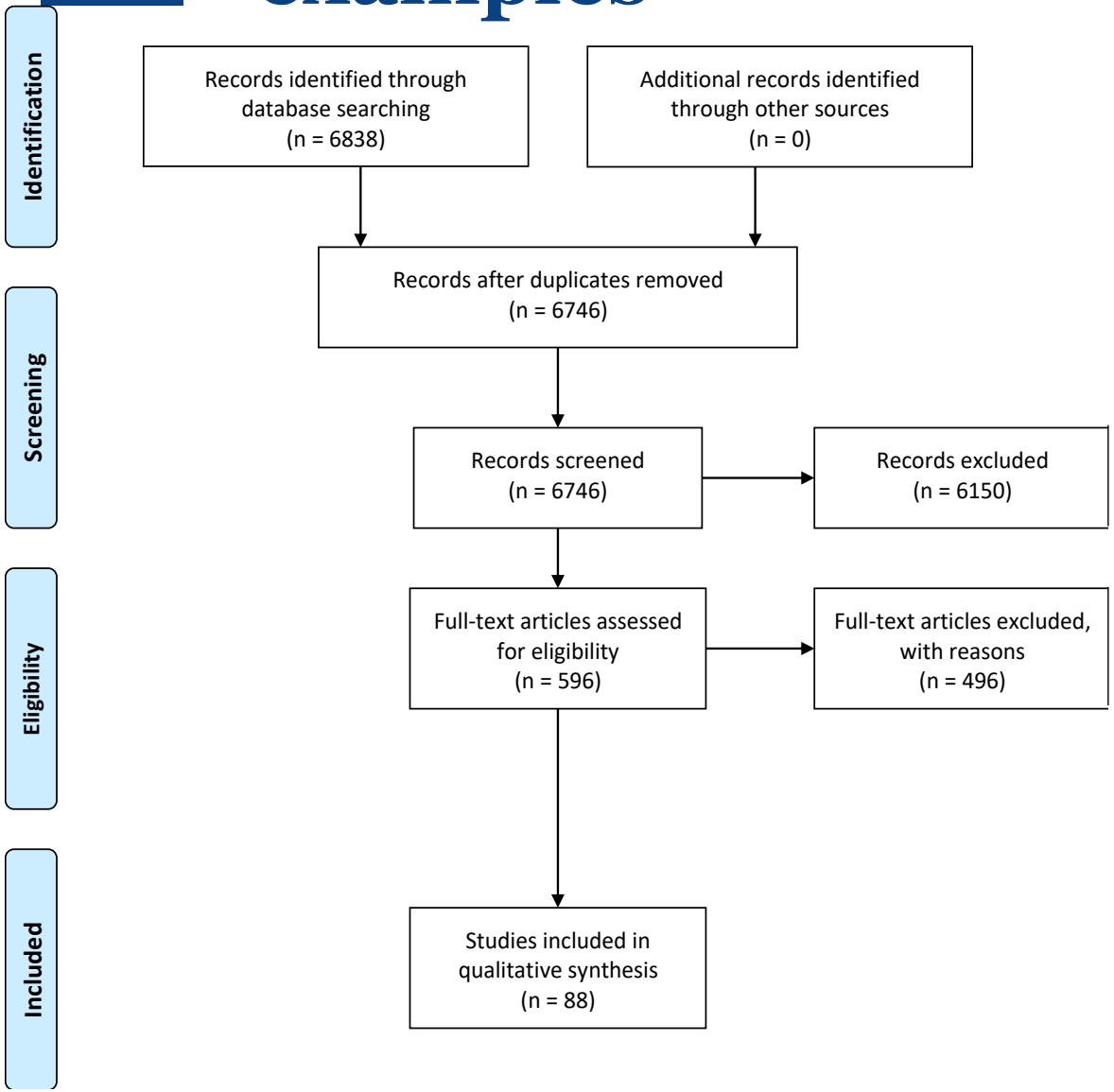
Aims of the synthesis

To understand:

- Approaches to grading and synthesising evidence
- Platforms for synthesising evidence, disseminating findings and user input
- Knowledge translation and application strategies
- Impact

- Systematic, multi-method rapid synthesis
- Cross-sectoral

The data sources- literature, interviews, case examples



Organisations interviewed
Australian Institute for Teaching and School Leadership (AITSL)
Murdoch Children's Research Institute
Centre for Positive Psychology, University of Melbourne
Social Ventures Australia
Paul Ramsay Foundation
Researchers
Organisation for Economic Cooperation & Development (OECD)

How did we evaluate quality?

AACODS Checklist

- Applicable to multiple social science research designs
- Grey & peer-reviewed research
- Policy and practice evidence

Tyndall, J. *AACODS Checklist*. Flinders University, 2010. Available from http://dspace.flinders.edu.au/dspace/

Sourcing peer-reviewed evidence

- A+ Informit*
- Academic Search Complete*
- Business Source Complete*
- Education Research Complete (ERC)*
- Education Resources Information Center (ERIC)*
- Medline*
- Mintel Academic*
- PsycINFO*
- SCOPUS*
- SOCIndex*
- OpenGrey (publicly accessible)
- Grey Literature Report (publicly accessible)
- Cochrane Collaboration Library (publicly accessible)
- Campbell Collaboration Library (publicly accessible)
- OECD iLibrary (some public access)
- World Bank eLibrary (publicly accessible)
- World Health Organization Institutional Repository for Information Sharing (publicly accessible)
- UNESDOC (UNESCO Database) (some public access)

What did the evidence look like? (1)

Quality criteria	% of studies meeting criteria
Accuracy	78%
Authority	100%
Coverage	74%
Objectivity	72%
Date	100%
Significance	77%

Only 1.2% of 6746 reported on evidence-informed practice or on institutions/organisations that support evidence-informed practice.

Challenge of achieving inter-rater reliability in the absence of standards for each criteria, and various in reporting and study types.

Understanding the issues of evidence

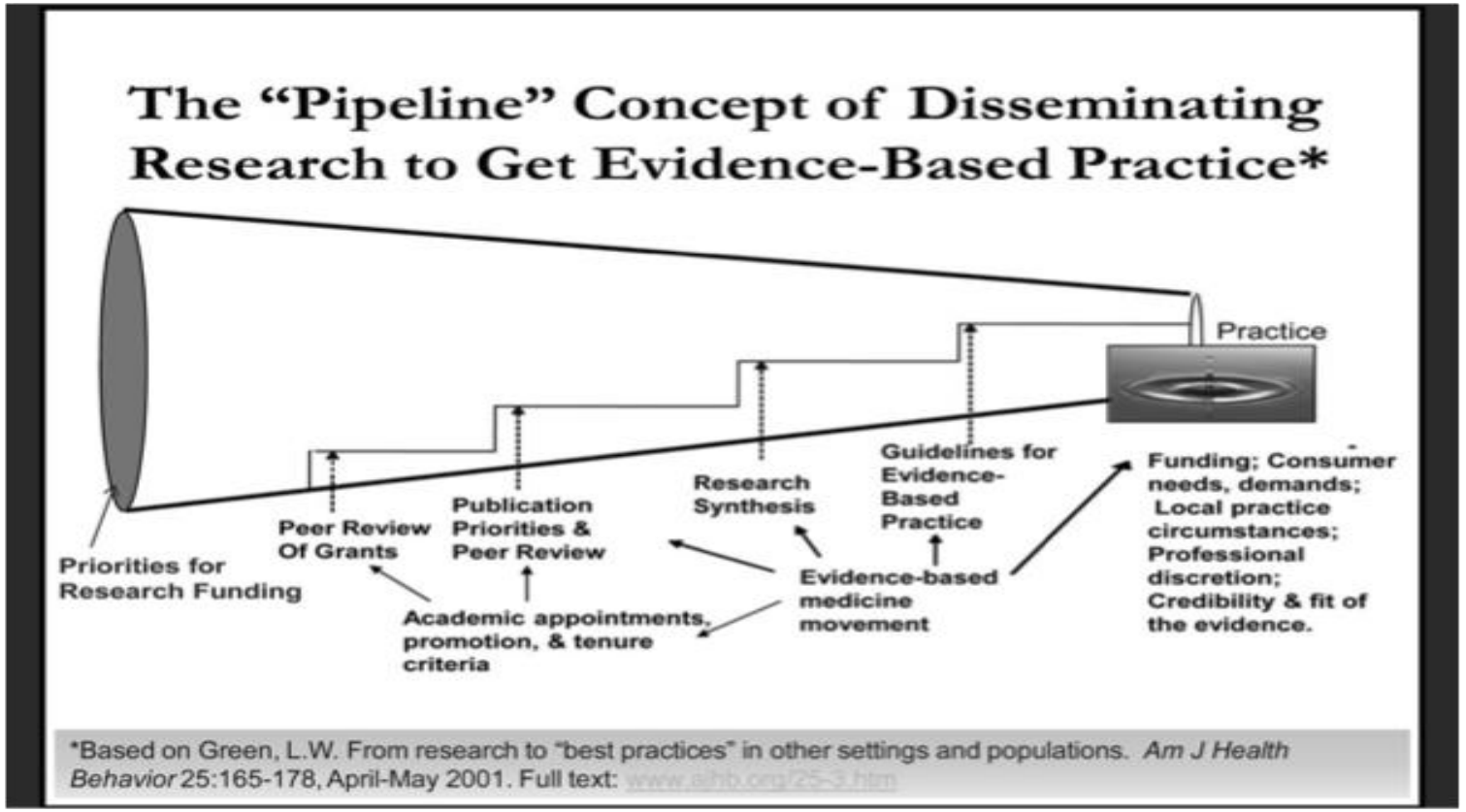


FIGURE 1 *The pipeline conceptualization and implementation of transferring research to practice results in successive constrictions of the flow of knowledge and an 'evidence-based guideline' product at the practitioner end of the pipeline that has a poor fit with practice circumstances such as funding, time constraints and patient demands*

Evidence based on RCTs .....

US What Works Clearing House – systematic Reviews

Education Endowment Fund/ Social Ventures Australia

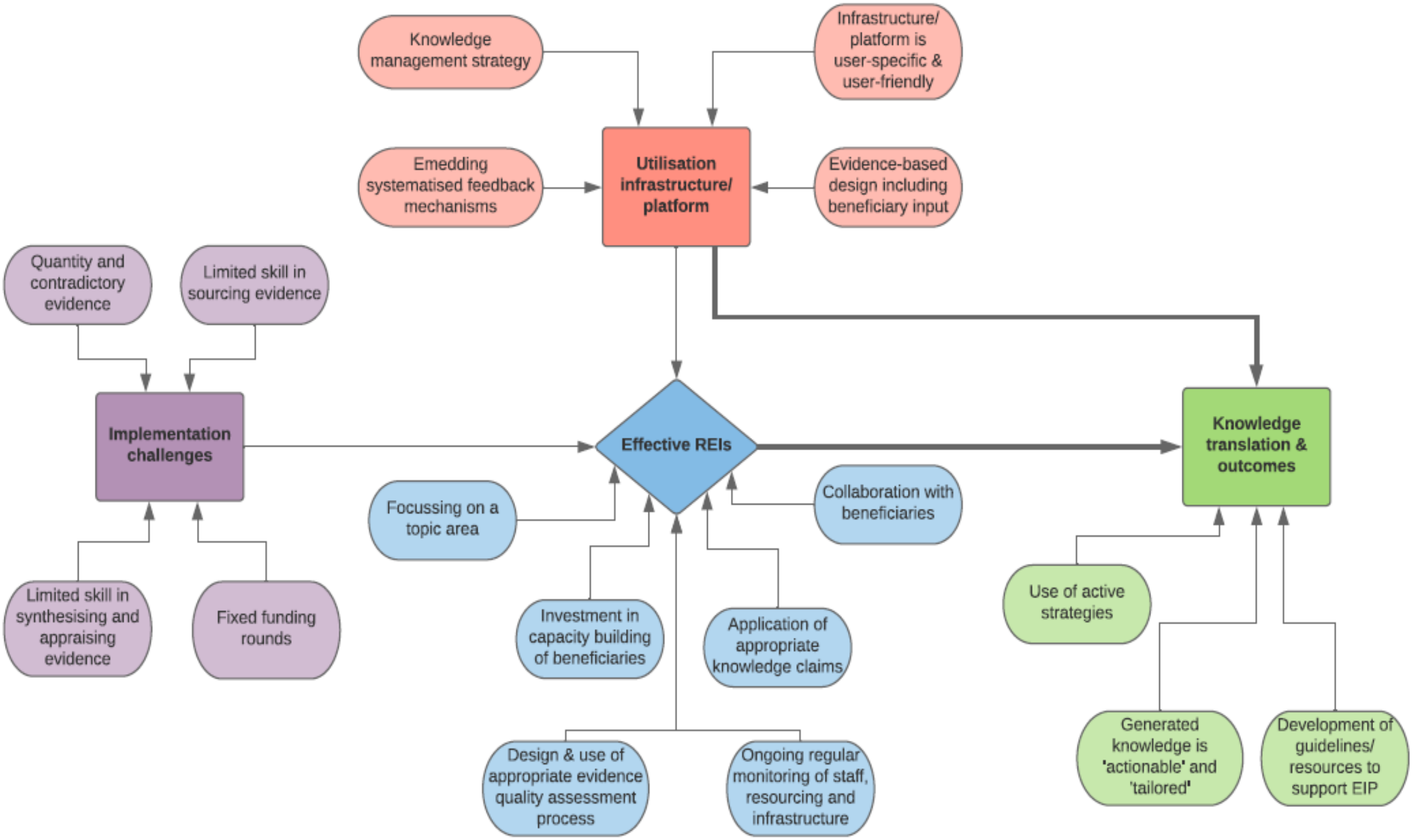
US National Centre or Ed Eval & Regional Assistance

- Efficacy then Effectiveness Trials
- 141 Random control studies about schooling effects on student outcomes
- No. students > 1m
- About n = 2000 per trial
- Average cost $.5m

Average no. studies in these RCTs = 2

Median effect-size from 141 RCTs = .03

Malouf & Taymans
Educational Researcher, Vol. 45 No. 8, pp. 454–459 DOI: 10.3102/0013189X16678417


Knowledge management strategy
Infrastructure/ platform is user-specific & user-friendly
Emedding systematised feedback mechanisms
Utilisation infrastructure/ platform
Evidence-based design including beneficiary input
Quantity and contradictory evidence
Limited skill in sourcing evidence
Implementation challenges
Effective REIs
Knowledge translation & outcomes
Focussing on a topic area
Collaboration with beneficiaries
Limited skill in synthesising and appraising evidence
Fixed funding rounds
Investment in capacity building of beneficiaries
Application of appropriate knowledge claims
Use of active strategies
Design & use of appropriate evidence quality assessment process
Ongoing regular monitoring of staff, resourcing and infrastructure
Generated knowledge is 'actionable' and 'tailored'
Development of guidelines/ resources to support EIP

Evidence synthesis learnings

- Dispersed, disparate nature of the evidence base
- Tackle challenges to the systematic review processes

1. **Lack of universally agreed approach to evaluating quality of evidence**
2. **Use a wide-range of social science research designs**
3. **Value of practice and unpublished evidence**
4. **Evidence-based is more static –evidence informed suggests learning is happening in a systematic way.**


Not about the functions its about the principles
Two way discussion about use

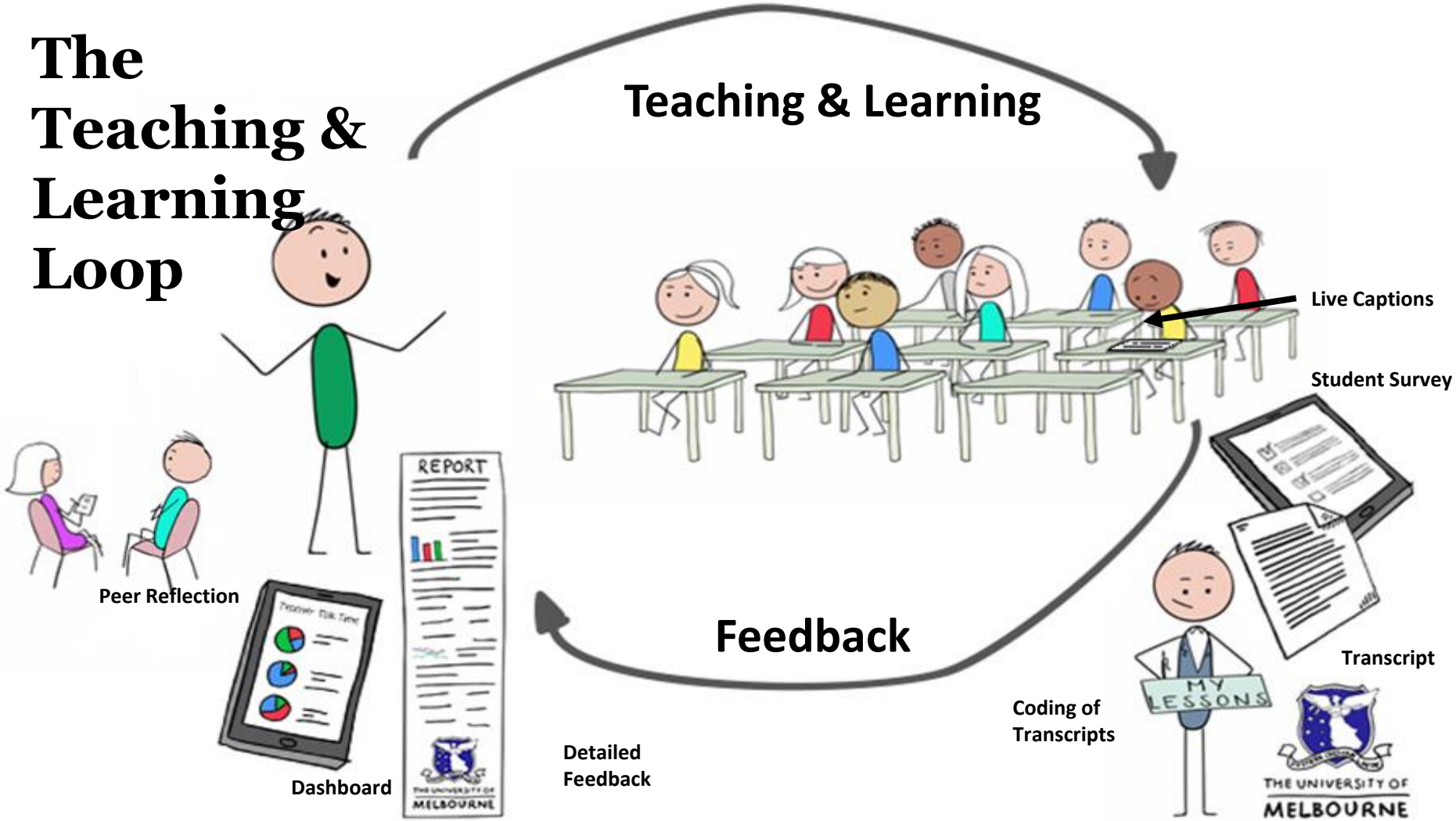
The model


Principles
Generate and Source
- Adaptive - Appropriate
- Effective - Feasibility
- Relevant
Synthesis
- Eclectic methods
- Quality
- Fit for purpose
- Analytic
Utilisation
- Engagement
- Feedback loop
- Connections created
Knowledge management
- Translate
- House
- Data linkage
- Brokers
Evidence into Action
Key Research Areas
- Theory
- Practice
- Implementation
- Scale
Beneficiaries
- Researchers
- Practitioners
- Policy makers
- Commentators
Promoter
Independent
Innovative
Responsive
Environmental forecaster
Evaluative
Dynamic

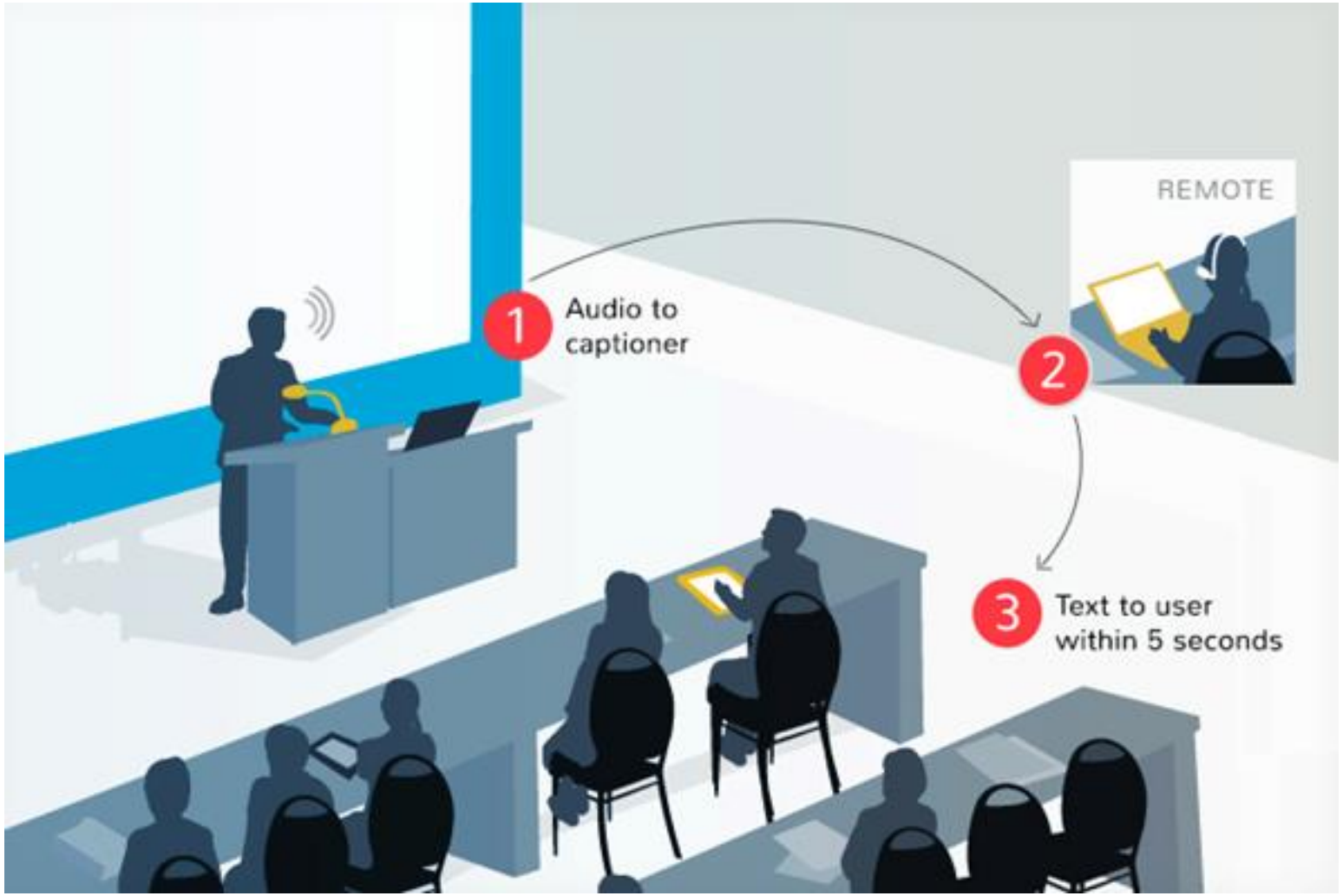
What data are we using to make decisions?

Let's look at the evidence of practice

The Teaching & Learning Loop

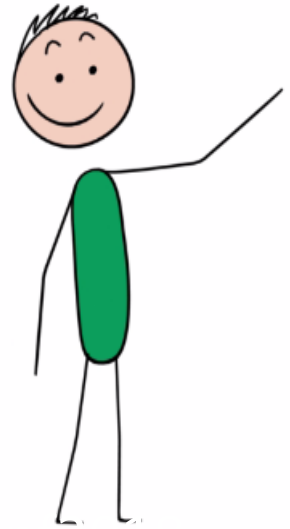


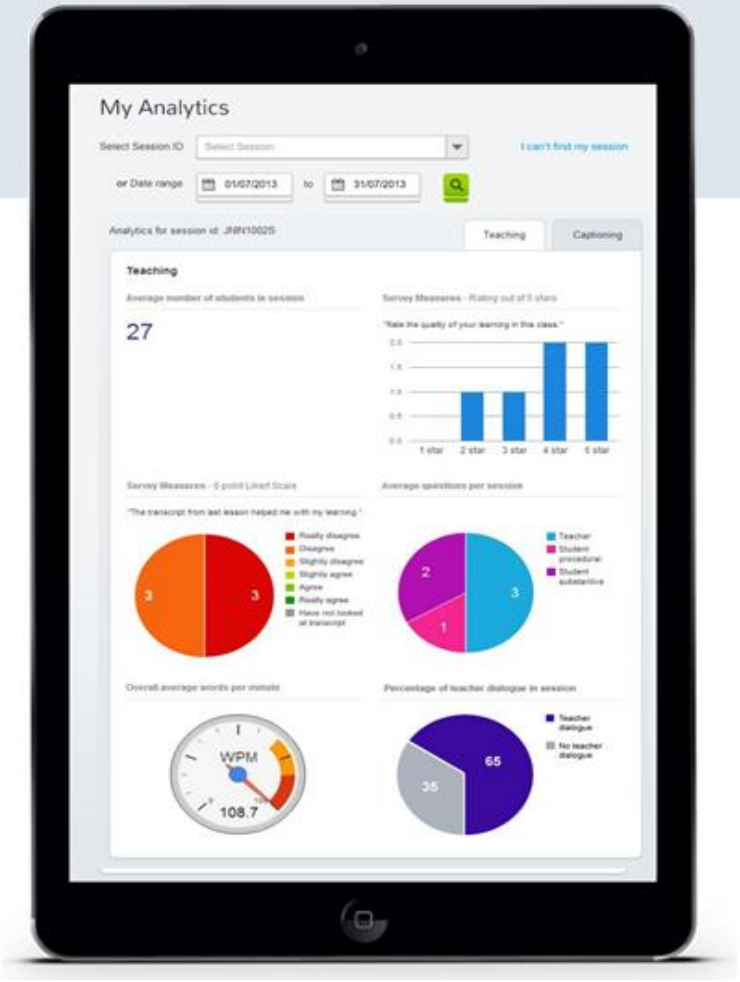
Real-time captioning: Facilitating a teaching & learning loop



The Visible Classroom

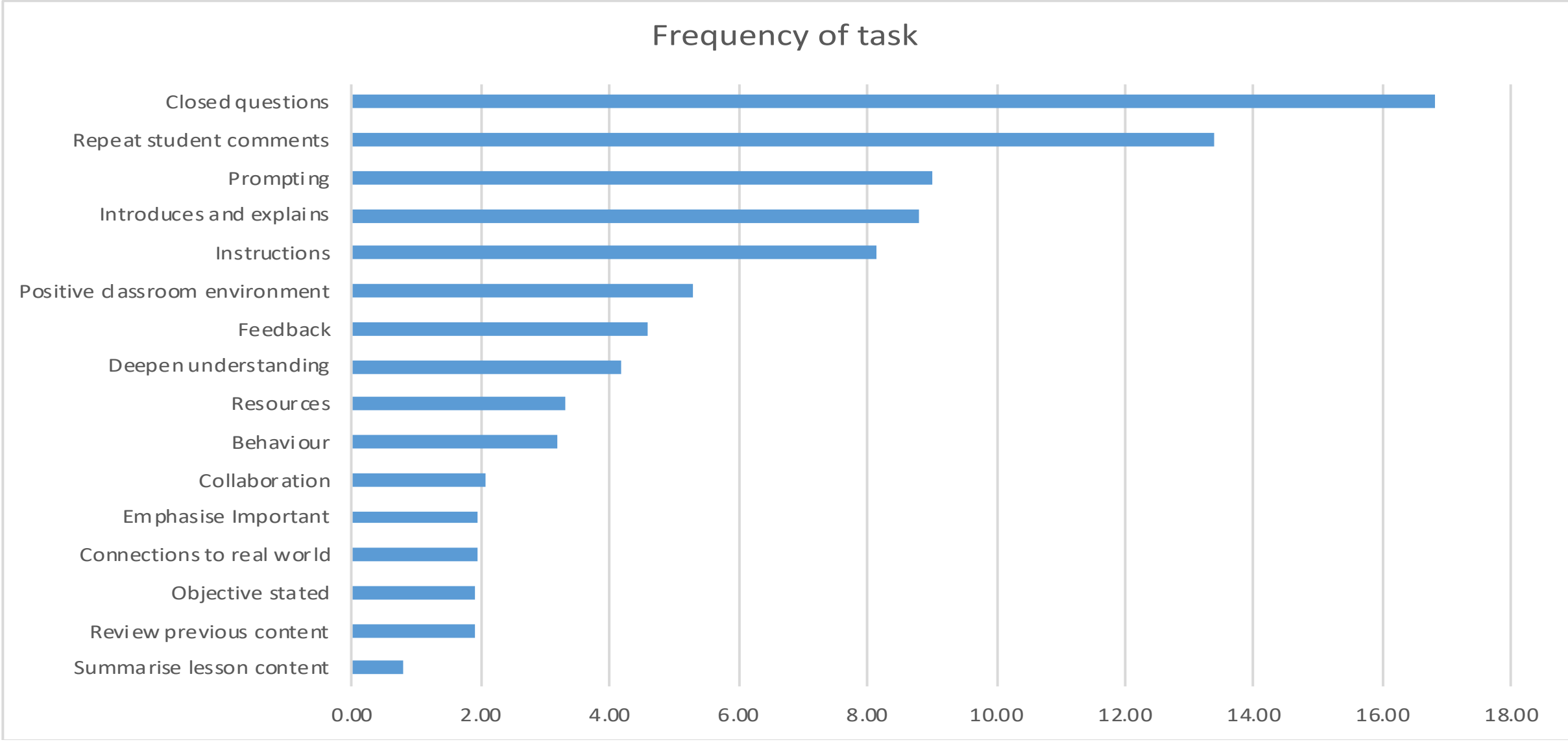
Teaching analytics



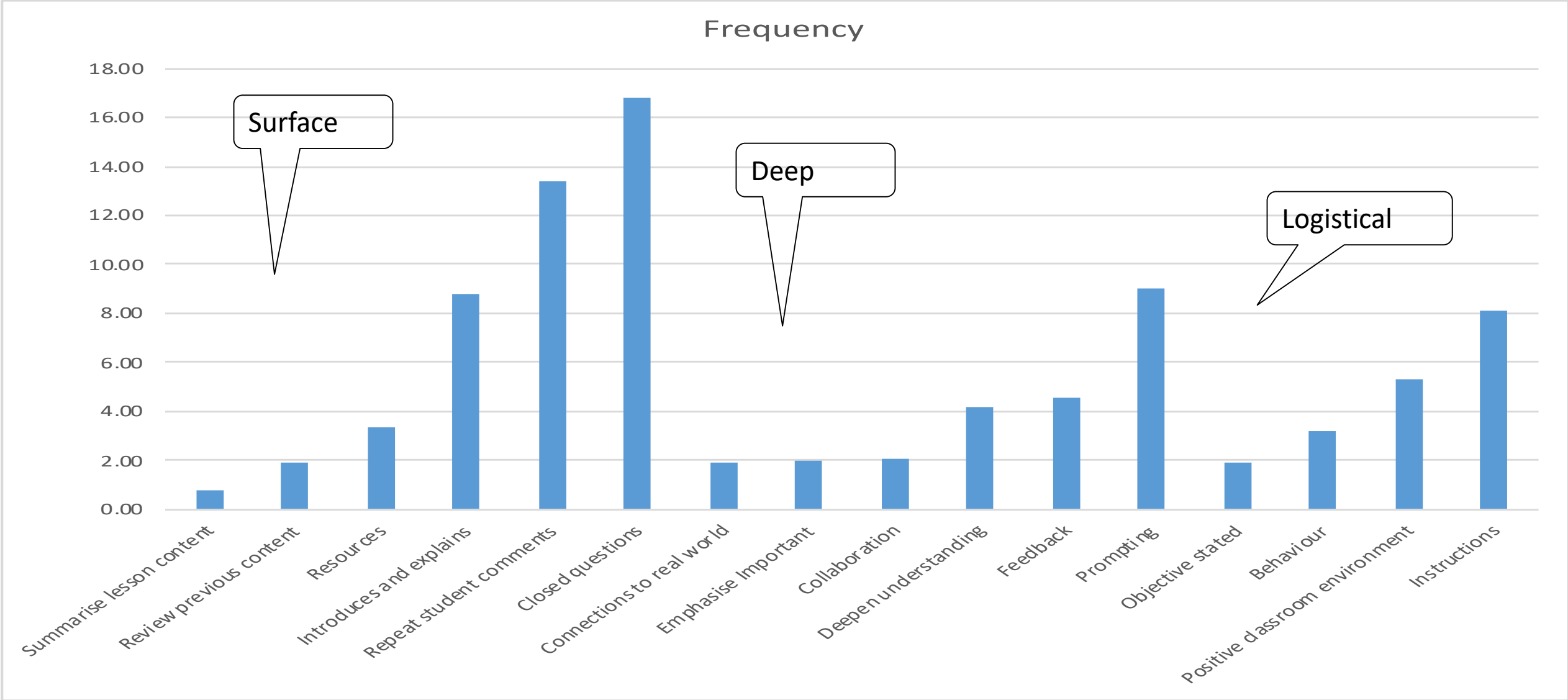


> 9700 lessons

Average frequency of activity per lesson



Average frequency per lesson: Deep & Surface Activity

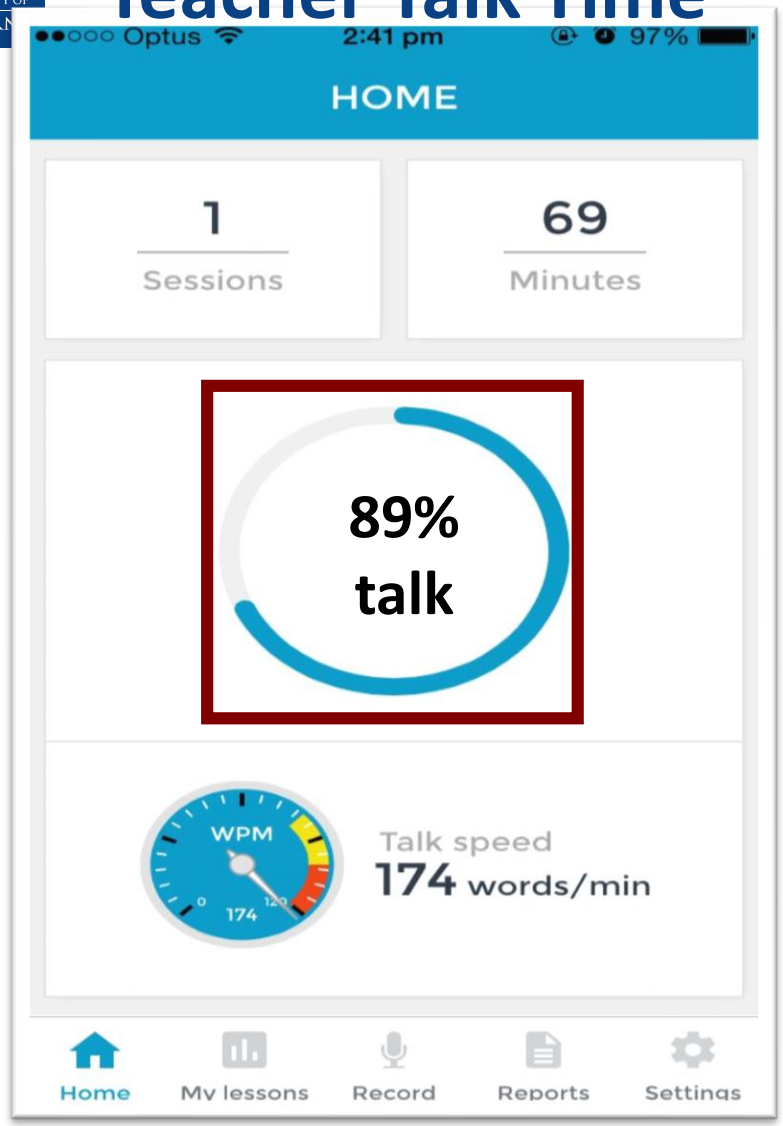



171 words per minute

Dashboard analytics:
Words per Minute

	Words per minute
Average person speaks	170
Senior student understands	140/150
Primary student understands	124

Teacher Talk Time

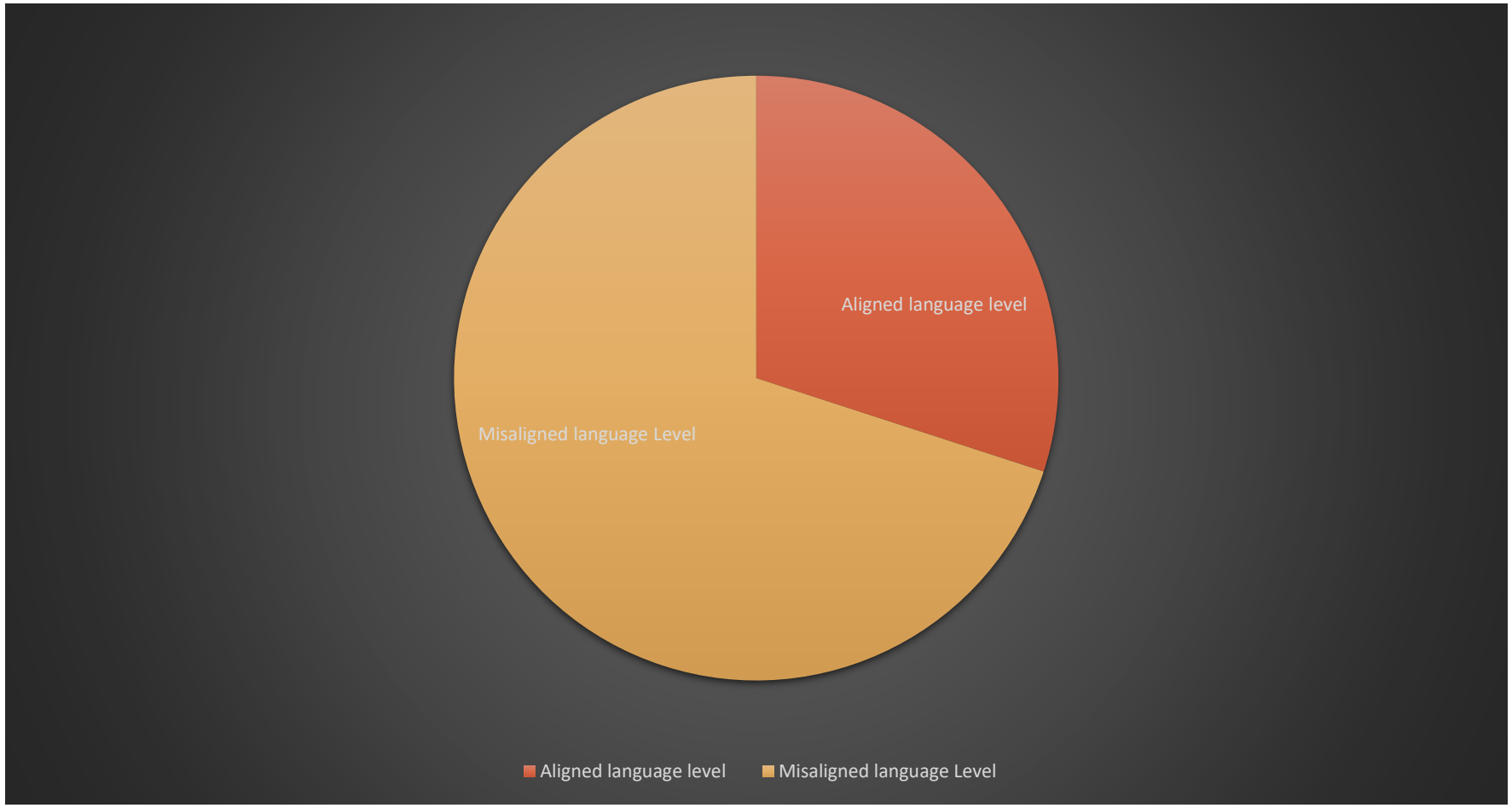


Target: 30% – 50%

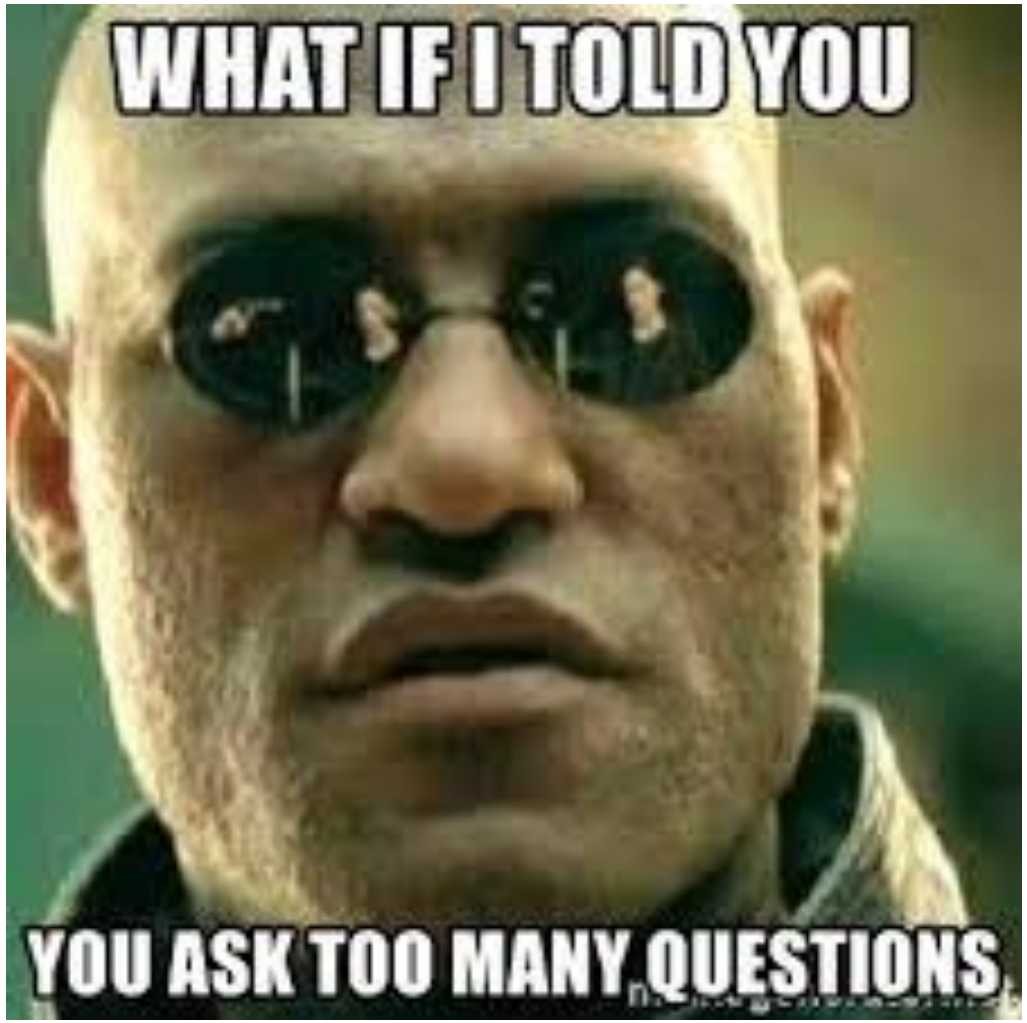
High: 51% – 80%

Very high: >80%

Level of Language spoken

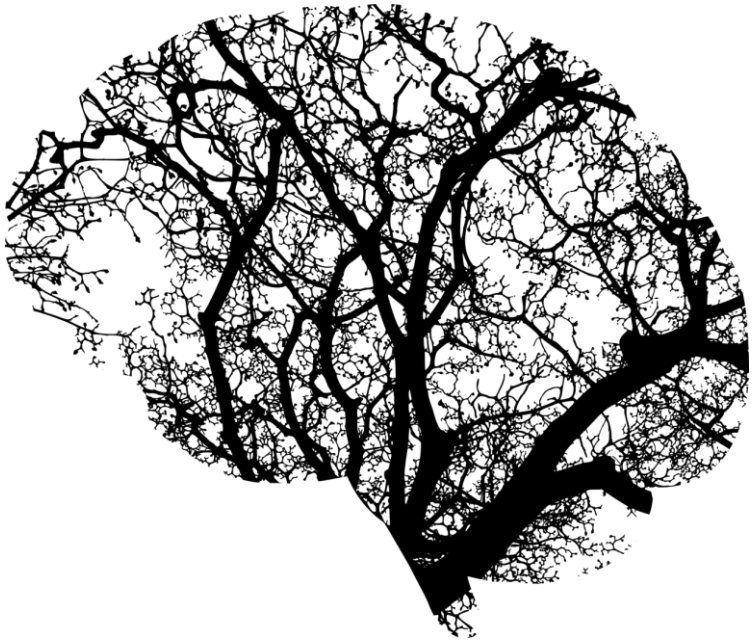


Teacher questions



142 questions

4-5 questions to deepen understanding



11 questions

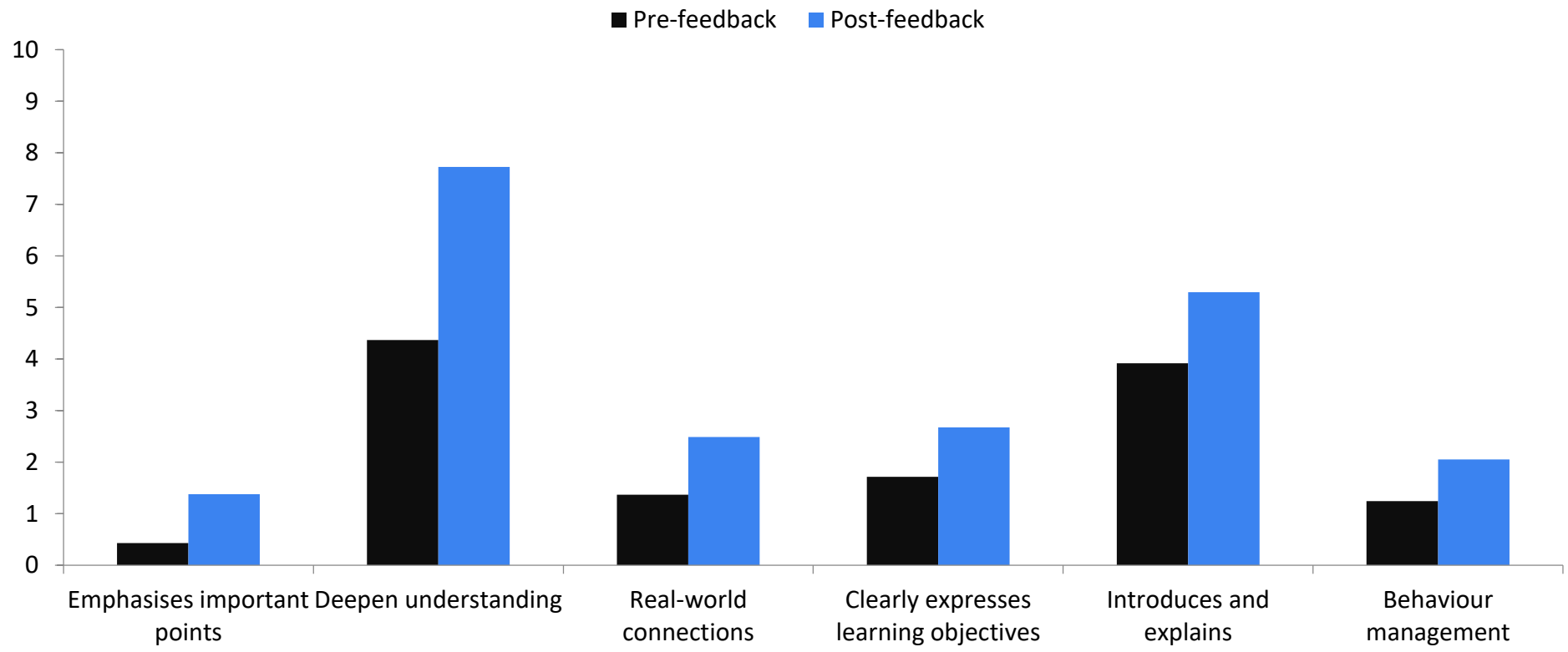
Class 3/4	Words per minute	% Teacher talk time	Language level Yes2 No1	Repeats student answer	Repeat student comments	Deeping understanding	Teacher questions	Convergent	Student procedural	Student substantive
1	183.2	74.32	1	1	10	2	82	51	16	2
2	223	80.61	1	0	4	2	90	55	10	1
3	157.8	58.39	1	0	5	3	119	70	5	1
4	162.5	78.83	2	2	15	5	49	29	6	3
5	166.5	59.02	1	4	10	1	36	23	2	1
6	161.8	68.87	1	1	6	1	70	31	10	0
7	148.6	76.61	1	1	10	4	55	18	2	2
8	189.5	56.07	2	0	7	2	110	61	19	2
9	190.1	71.8	1	0	6	4	100	58	18	2
10	150.8	65.42	2	1	21	5	109	37	23	6


SHUT UP AND LISTEN
HUMOAR.COM

The good news: feedback makes the difference

Change in practice

- **Change** in teacher practice
- **Enhance** teachers' reflection on their own practice.



Effect-sizes

Deep Teach	0.97
Behaviour	0.81
Important	0.76
Convergent	0.66
Instructions	0.63
Connections	0.6
Introduces	0.48
Repeats	0.44
Feedback	0.39
Scaffold	0.34
Goals	0.18
Summarising	0.18
Positive	0.15
Prompting	-0.1
Resources	-0.1
Review	-0.2

Visible learning

John Hattie's latest

Visible Learning Research

based on

1,400 meta-analyses

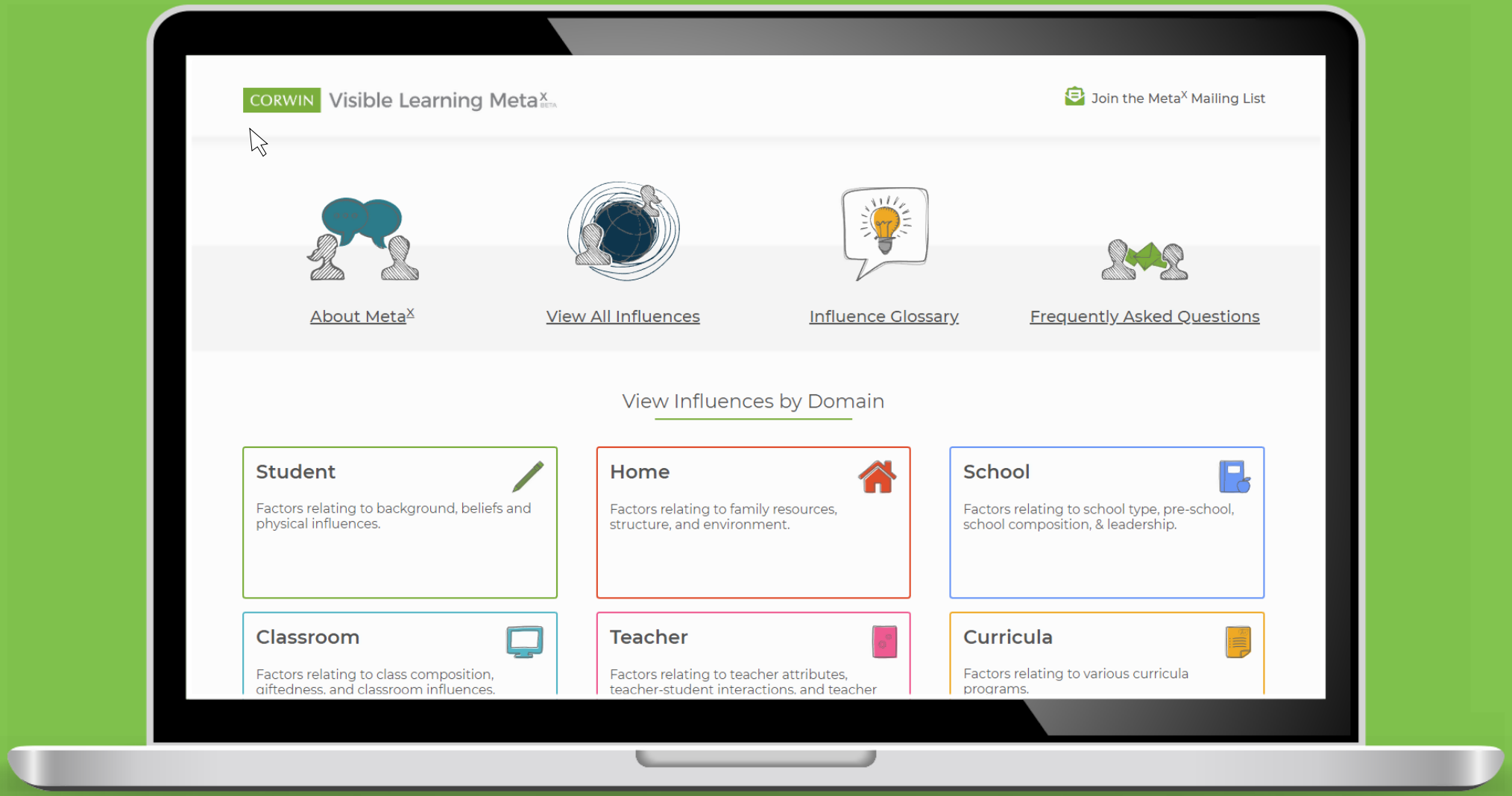
of over

80,000 studies

involving over

300 million students


CORWIN
Visible Learning MetaX
BETA


CORWIN Visible Learning MetaX
Join the MetaX Mailing List
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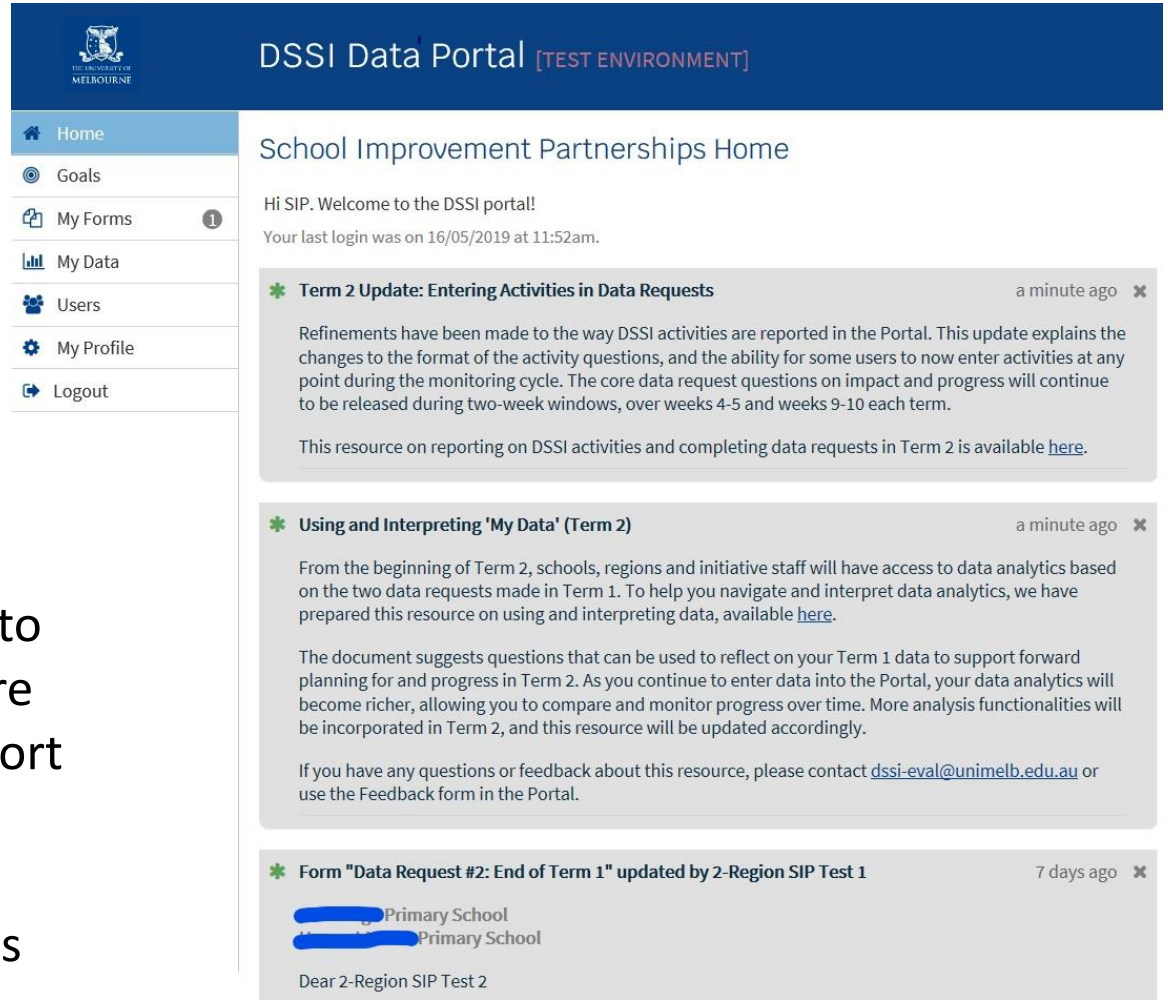
Influence Glossary
Frequently Asked Questions
View Influences by Domain
Student
Factors relating to background, beliefs and physical influences.
Home
Factors relating to family resources, structure, and environment.
School
Factors relating to school type, pre-school, school composition, & leadership.
Classroom
Factors relating to class composition, giftedness, and classroom influences.
Teacher
Factors relating to teacher attributes, teacher-student interactions, and teacher
Curricula
Factors relating to various curricula programs.

Co-design of the DSSI Data Portal

The DSSI Data Portal

The Portal enables quality (and frequent) data collection for the evaluation, but offers access to tailored data and for users to give feedback.

1. Complete data requests collaboratively with the school
2. View and track school goals and data
3. Use this data to track, measure progress, support evidence-informed conversations



The vision: DSSI Data Portal

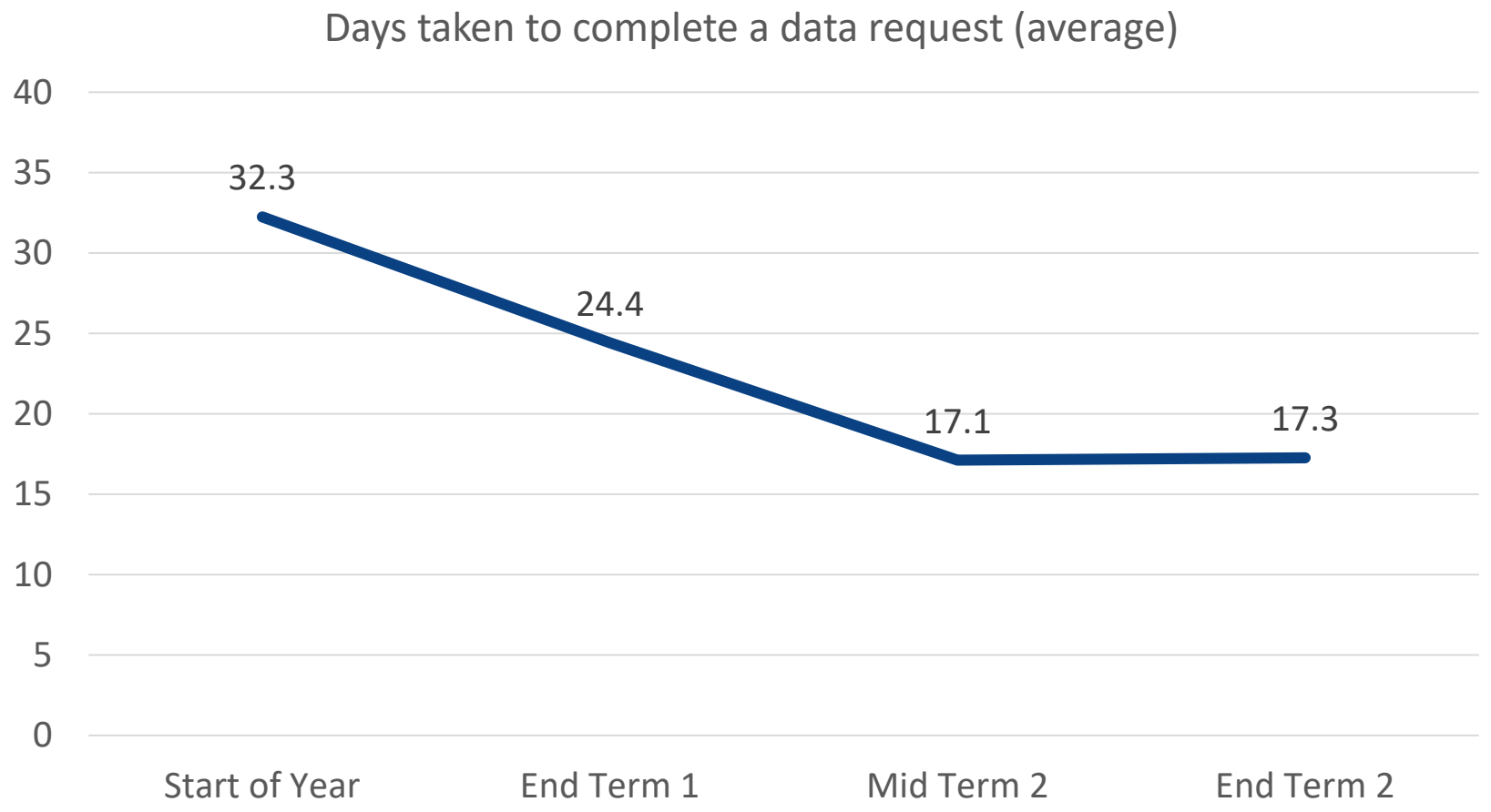
Purpose:

- to ensure schools and initiative staff can engage with their data effectively for tracking, measuring progress and as evidence of impact of their participation in DSSI
- to collect reliable data to feed into the DSSI evaluation

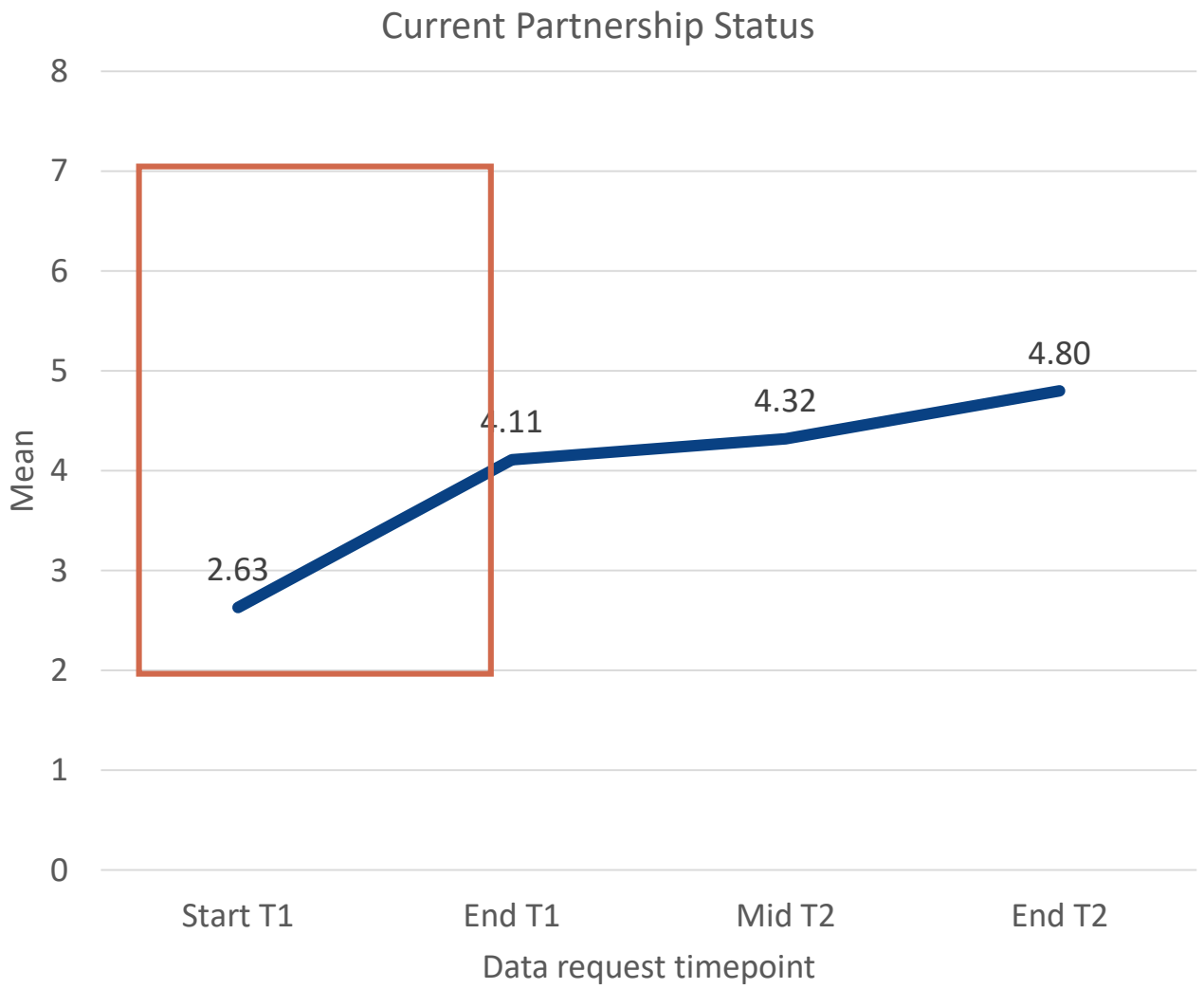
Benefits:

- Reduce time burden associated with reporting
- Improve access to data by schools, initiative and regional staff
- Increase the ability to make comparisons over time and benchmark progress
- Improve consistency and completeness of data
- Collect data more regularly.

Effect of co-design: addressing problem of length of time to complete data requests



Effect of co-design: maximising knowledge translation



How can the design of DSSI support rapid development of partnership at the beginning of implementation?

Some requirements for the co-design process

Professional trust	• Transparency • Responsiveness to needs of multi-level users
Positioning evaluators as insiders	• Regional staff members • Direct links to school stakeholders
Supporting usability	• Adding direct value and support for planning processes • Coherence around school data entry and data provided via existing platforms

Consider the evidence

How do teachers navigate this?

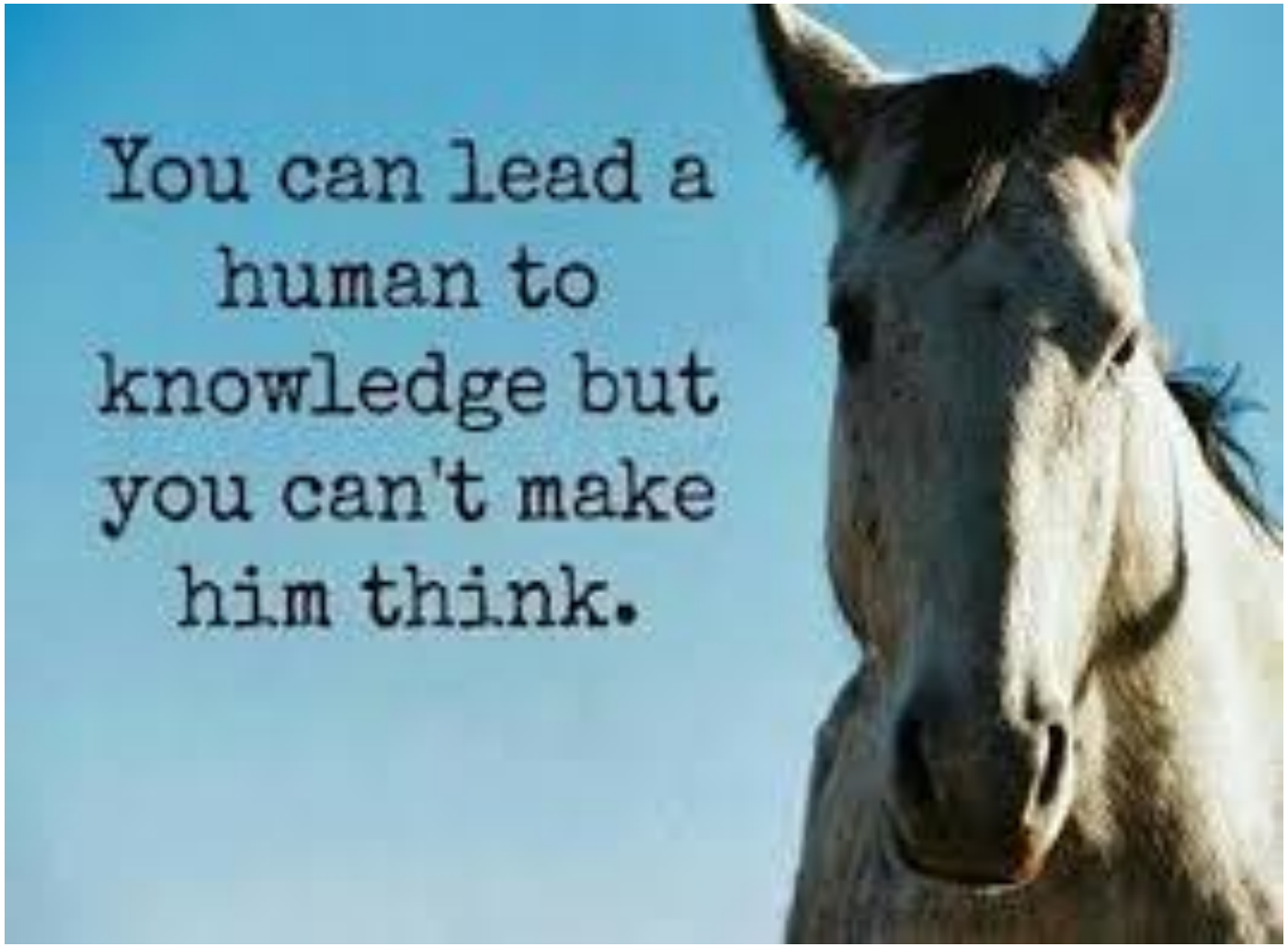
What's the answer: A new way of thinking

Evaluative Thinking	Evaluative Questions
1. Critical thinking valuing evidence	1. What are the students ready to learn?
2. Addressing the fidelity of implementation	2. Have I chosen optimal, evidence-based interventions & built a Logic Model to focus on implementation?
3. Investigating potential biases	3. Am I seeking evidence that I might be wrong?
4. Focusing on knowing one's impact	4. What are the shorter, medium, & longer-term impacts expected, and am I monitoring & reporting these?
5. Understanding others' points of view	5. Am I seeking others' perspectives & evidence about fidelity and impact?

Evaluative thinking is the link to use

So what do we know about what works in teaching and learning ?

Can lead a horse to water but you can’t make it drink??????



Working together

Thank you

Prof Janet Clinton

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