What makes learning visible?
HOW DID THE COVID-19 PANDEMIC AFFECT YOU?

CORWIN VISIBLE LEARNING
About 100 studies on effects of COVID/Distance Achievement (12m+ students)
An ode to expertise

Learning is about less coverage of content to allow to go deeper

Engagement is more than doing, it is striving and driving

Students needed to be taught to become their own teachers – TeachBack

The social media aspect of technology is exciting

Students are mightyly resilient

Saw more leader and teacher collective efficacy

CORWIN VISIBLE LEARNING
VISIBLE LEARNING
A SYNTHESIS OF OVER 800 META-ANALYSES RELATING TO ACHIEVEMENT

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

2008
No. of meta-analyses by year
Now > 2,100
> 400 million students

Pre-2008 = 800
Post-2008 = 1300
Charter schools: 
-0.3 -0.1 0.1 0.3 0.5 0.7 0.9 1.1

Lack of sleep: 
-0.3 -0.1 0.1 0.3 0.5 0.7 0.9 1.1

School choice: 
-0.3 -0.1 0.1 0.3 0.5 0.7 0.9 1.1

Teacher performance pay: 
-0.3 -0.1 0.1 0.3 0.5 0.7 0.9 1.1

Mother employment: 
-0.3 -0.1 0.1 0.3 0.5 0.7 0.9 1.1

Humor: 
-0.3 -0.1 0.1 0.3 0.5 0.7 0.9 1.1

Frustration: 
-0.3 -0.1 0.1 0.3 0.5 0.7 0.9 1.1

Gender (male-female): 
-0.3 -0.1 0.1 0.3 0.5 0.7 0.9 1.1

# meta = 1, # studies = 9, est, # people = 1,418, # effects = 9,

# meta = 6, # studies = 347, est, # people = 31,937, # effects = 780, se = 0.03

# meta = 34, # studies = 2,884, est, # people = 23,957,726, # effects = 5,478, se = 0.04

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# meta = 1, # studies = 20, est, # people = 4,801, # effects = 21, se = 0.08
## Teacher and School Leader Expertise

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Score</th>
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<tbody>
<tr>
<td>Teachers working together as evaluators of their impact</td>
<td>1.20</td>
</tr>
<tr>
<td>All having high expectations</td>
<td>.90</td>
</tr>
<tr>
<td>All moving towards explicit success criteria</td>
<td>.77</td>
</tr>
<tr>
<td>Using the Goldilocks principles of challenge</td>
<td>.74</td>
</tr>
<tr>
<td>Climate of high trust where errors welcomed as opportunities to learn</td>
<td>.72</td>
</tr>
<tr>
<td>Maximize feedback to teachers about their impact</td>
<td>.72</td>
</tr>
<tr>
<td>A focus on learning: The right proportions of surface to deep</td>
<td>.69</td>
</tr>
</tbody>
</table>
Evaluative thinking

Evaluative thinking involves

1. Critical thinking valuing evidence
2. Address fidelity of implementation
3. Investigating potential biases
4. Focusing on knowing one’s impact
5. Understanding others’ points of view

The five CORE questions

1. What are the students ready to learn?
2. Have I chosen optimal, evidence-based interventions & built a Logic Model to focus on implementation?
3. Am I seeking evidence that I might be wrong?
4. What are the shorter-, medium- & longer-term impacts, and am I monitoring my success with all students?
5. Am I seeking others’ perspectives & evidence about fidelity and impact?
# The why, how, what, doing, and evaluating

<table>
<thead>
<tr>
<th>Why</th>
<th>1. Being clear about the purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>How</td>
<td>2. The importance of mind frames</td>
</tr>
<tr>
<td>What</td>
<td>3. Intentional alignment - knowing-that, knowing-how, and knowing-with</td>
</tr>
<tr>
<td>Doing</td>
<td>4. Quality of implementation</td>
</tr>
<tr>
<td>Evaluating</td>
<td>5. Evaluative thinking</td>
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</tbody>
</table>
## 1. Purposes

<table>
<thead>
<tr>
<th>TEACHERS</th>
<th>STUDENTS</th>
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</thead>
<tbody>
<tr>
<td>See their impact through the eyes of students</td>
<td>Become their own teachers</td>
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<tr>
<td>Teach students to become their own teachers</td>
<td></td>
</tr>
<tr>
<td>Become students of their own teaching</td>
<td></td>
</tr>
<tr>
<td><strong>SCHOOL/LEADERS</strong></td>
<td><strong>PARENTS</strong></td>
</tr>
<tr>
<td>Establish a climate &amp; culture so that all educators maximize their impact on students</td>
<td>Become their child’s first learner</td>
</tr>
</tbody>
</table>
2. Mind frames: Teacher and Leader

1. I am an evaluator of my impact
2. I see assessment as feedback to me
3. I collaborate about impact
4. I am a change agent
5. I strive for challenge
6. I give & help students understand feedback
7. I engage as much in dialogue as monologue
8. I explicitly inform students about success
9. I build relationships & trust
10. I focus on the language of learning
Student Mind frames

1. I am confident that I can learn & enjoy challenges
2. I set implement, & monitor an appropriate mix of achieving and deep learning goals
3. I strive to improve & enjoy my learning
4. I strive to master & acquire surface and deep learning
5. I work to contribute to a positive learning culture
6. I have multiple learning strategies & know when best to use them
7. I have the confidence and skills to learn from & contribute to group learning
8. I can hear, understand, & action feedback
9. I can evaluate my learning
10. I am my own teacher
Parent Mind frames

1. I have appropriately high expectations
2. I make reasonable demands and are highly responsive to my child
3. I am not alone as a parent
4. I develop my child’s skill, will and sense of thrill
5. I love learning
6. I know the power of feedback and success thrives on errors
7. I am a parent not a teacher
8. I know how to deal with schools
9. I appreciate that my child is not perfect, nor are you
10. I am an evaluator of my impact
Climate & Culture Mind frames

Equity
1. We discover, correct, and disrupt inequities
2. We embrace diverse cultures and identities
3. We recognize and disrupt biases
4. We create equitable opportunities

Identities
5. We cultivate fortifying & sustaining environments for all identities
6. We acknowledge, affirm, & embrace the identities of all our students
7. We remove barriers to students learning

Belonging
8. We strive to invite all to learn
9. We value engagement in learning
10. We collaborate to learn and thrive
Every child is a learner

Errors and failures as opportunities to learn

Coping strategies

Help exceed their expectations

Depth of motivational resources students bring to class
Self-efficacy

- R = 5
- # meta = 12, # studies = 640, est, # people = 1,313,310, # effects = 648, se = 0.03

 Appropriately challenging goals

- R = 4
- # meta = 6, # studies = 375, est, # people = 36,955, # effects = 473, se = 0.06

Curiosity

- R = 2
- # meta = 2, # studies = 15, est, # people = 3,330, # effects = 18, se = 0.17
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<tr>
<th>LEADERS</th>
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<tbody>
<tr>
<td><strong>Shared narrative</strong></td>
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<tr>
<td><strong>Expectations</strong></td>
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<td><strong>Inviting</strong></td>
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<td><strong>Collective</strong></td>
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<tr>
<td><strong>Implement</strong></td>
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<tr>
<td><strong>Equity</strong></td>
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</tbody>
</table>
Climate and culture needs to be seen by students as:

- Fair and inviting
- Led by a teacher who they believe can enhance their learning
- Shows their “with-it-ness”
- Encourages failure as opportunities to learn
- Shows excellent listening skills
- Works quickly to suppress disruptive issues
- Has high expectations of each student’s success
- Teaches skills of working in teams with diverse students
- Ensures all exposed to the same curriculum, quality & quantity of instruction
- Has clarity of purpose
3. Visible Learning Intentional Alignment model

- PURPOSE
- MINDFRAMES
- INTENTIONAL ALIGNMENT
- QUALITY OF IMPLEMENTATION

CORWIN VISIBLE LEARNING
Teaching Methods

- Jigsaw method
- Reciprocal teaching
- Problem solving teaching
- Vocabulary programs
- Phonics instruction
- Direct Instruction
- Scaffolding
- Second/Third chance programs
- Inquiry based teaching
- Comprehension programs
- Writing programs
- Exposure to Reading
- Philosophy in schools
- Teaching communication skills & strategies
- Drama/Arts Programs
- Cooperative learning
- ICT methods
- Collaborative learning
- Adjunct aids
- Matching style of learning
- Problem based learning
- Manipulative materials on math
- Individualized instruction
- Discovery based teaching
- Co-/ Team teaching
- Whole language
## Cognitive Complexity

<table>
<thead>
<tr>
<th>Name</th>
<th>Definition</th>
<th>Activities</th>
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<tbody>
<tr>
<td>Knowing That (Surface)</td>
<td>Factual Recall and reproduction</td>
<td>Recall and reproduction</td>
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<td>Basic application</td>
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<tr>
<td>Knowing How (Deep)</td>
<td>Connecting, applying, and relating together surface knowledge from different areas</td>
<td>Connecting, applying, and relating together surface knowledge from different areas</td>
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<tr>
<td>Knowing With (Transfer)</td>
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</tbody>
</table>
Knowing That
(Surface)

Knowing How
(Deep)

Knowing With
(Transfer)

Success Criteria

Assignment & Assessments

Climate & Culture

Activities

Learning Strategies

Teaching Methods

INTENTIONAL ALIGNMENT

KNOWING THAT, HOW, WITH
VL model of learning

Knowing that
- ‘Knowing that’ Acquiring
- ‘Knowing that’ Consolidating

Knowing how
- ‘Knowing how’ Acquiring
- ‘Knowing how’ Consolidating
- ‘Knowing with’ Transfer

SKILL
WILL
THRILL
VL model of learning

**SKILL**

- Outlining
- Summarizing .70
- ‘Knowing that’ Acquiring
- Linking to Prior learning .93

**WILL**

- Deliberate Practice .79
- Spaced vs Massed .65
- ‘Knowing how’ Acquiring
- Planning & Evaluating .88
- Self talk .50
- Self questioning .64

**THRILL**

- Similarities & Differences 1.32
- ‘Knowing with’ Transfer
- Mastery .68
- Thrill of learning .57

**CORWIN VISIBLE LEARNING**
Giving back through educational experiences.

JOIN US  HOW WE LEARN SURVEY
## S.L.I.M. - Science of Learning Intervention Measure

<table>
<thead>
<tr>
<th>Table</th>
<th>Dial</th>
<th>Chart</th>
<th>Recommendations</th>
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### Outlining

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### Summarising

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### Deliberate Practice

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### Practice Testing

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### Rehearsal & Memorisation

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### Seek & Receiving Feedback

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### Distributed Practice

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### Redesign & metacognition

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### Seek & Clarity

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### Self-verbalisation

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| Class Exposure | Science of Learning Intervention Measure | CORWIN VISIBLE LEARNING |
Surface Consolidation - *Practice Testing (Retrieval Practice)*

This strategy involves frequent testing or quizzing over time to reinforce recall of the material from memory. The key is to make sure that tests are “low” or “no-stakes,” and there is opportunity for feedback.

**What can I do to improve?**

**Things to think about include:**

- When preparing for an upcoming test, check your understanding using a practice test of quiz.
- When using practice testing, make sure you specifically target the material that you are trying to learn.
- Speak to your teacher about having access to access to past tests or exams to support your learning.
- Make sure that you use your performance one practice test to guide further revision.

---

**Additional Resources**

**The Learning Scientists**

A great little website curated and put together....

- [Retrieval Practice (podcast)](Retrieval%20Practice%20%28podcast%29)
- [Retrieval Practice Formats (podcast)](Retrieval%20Practice%20Formats%20%28podcast%29)
- [Retrieval practice Explainer (You Tube)](Retrieval%20practice%20Explainer%20%28You%20Tube%29)
- [What is retrieval Practice?](What%20is%20retrieval%20Practice%3F)
- [Three reasons why retrieval practice boosts learning](Three%20reasons%20why%20retrieval%20practice%20boosts%20learning)
- [Retrieval Practice Overview](Retrieval%20Practice%20Overview)

**What is Retrieval Practice and Why is it so Powerful?**

(TeacherofSci.com)

A detailed blog post ...

- [Retrieval Practice](Retrieval%20Practice)

**Cult of Pedagogy**

A website curated by an ex-teacher which is focused on sharing best practice about the student of teaching.

- [Retrieval Practice: The Most Powerful Learning Strategy You’re Not Using](Retrieval%20Practice%3A%20The%20Most%20Powerful%20Learning%20Strategy%20You%27re%20Not%20Using)
Aligning teaching to learning

Explicit Instruction

Problem based

‘Knowing that’
Acquiring

‘Knowing that’
Consolidating

Combining notes
Summarizing
Notebook review
Pictorial notes

Examining support claims
Identify errors
Generating qualifiers
Presenting formal claims structures
Providing backing
Worked examples

‘Knowing how’
Acquiring

‘Knowing how’
Consolidating

Assignment revision
Frequent practice
Practice session prior to testing
Two-column notes
Problem-based learning

Peer feedback
Peer response groups
Peer tutoring
Student tournaments
Think-pair-share
Cumulative review

Sorting, matching, categorizing
Student-generated classification patterns
Dichotomous keys
Classification charts

‘Knowing with’
Transfer

Thinking visible learning
Problem Based Learning

d = 0.15

- ‘Knowing that’
  - Acquiring
  - Consolidating

- ‘Knowing how’
  - Consolidating

d = 0.54

- ‘Knowing how’
  - Consolidating

- ‘Knowing with’
  - Transfer
Direct Instruction

- ‘Knowing that’
  - Acquiring
  - Consolidating

- ‘Knowing how’
  - Acquiring
  - Consolidating

- ‘Knowing with’
  - Transfer

Problem Based Learning

- ‘Knowing that’
  - Acquiring

- ‘Knowing how’
  - Consolidating

- ‘Knowing with’
  - Transfer

\[ d = \text{high} \]
\[ d = .15 \]
\[ d = .54 \]

\[ d = \text{low} \]
Educator input trust activity + group discussion

Teacher input relating to power to speech acts

Input knowledge from teacher

Losing circle and exit questions

Debrief learner-learner interaction

Learners offer insight

Simulation of power questions based on shared experiences

Knowing that
- Surface
- Content
- Ideas

Knowing how
- Relating ideas
- Conceptual understanding

Knowing with
- Transfer to
- New and far contexts

Lecture on faecal bacteria

Lecture on how food is stored using photographs

Lecture on how food is defrosted

Question response input

Teacher led discussion on examples of food storage

Knowing that
Surface ideas

Knowing how
Relating ideas
Conceptual understanding

Knowing with
Transfer to
New and far contexts

A visible learner

- Inspired and Passionate Teachers
  - Applies effective habits of thinking and doing
- Assessment-capable
  - Explains and understands progress
- Learning dispositions
  - Knows where they are, where they are going and what their next steps are.
- Mindframes for teachers
  - Seeks, receives, acts on and gives feedback
  - Understands how to learn
  - Learning strategies and metacognition
Visible Learning Intentional Alignment model

**PURPOSE**
- Seeing impact through the eyes of students
- Enabling students to become their own teachers

**MINDFRAMES**

**INTENTIONAL ALIGNMENT**
- Knowing that, how, with
  - Curriculum
  - Cognitive complexity
  - Teaching & learning interventions
  - Evaluation strategy

**QUALITY OF IMPLEMENTATION**
What makes learning visible?