



# Creating 'Minds On' learning

By Jake Whiddon



# What are we doing today?

The science of learning

Active  
“Minds On”  
learning

App for home  
and  
classrooms

Questions



But first.....a **little bit of history**

teacher  
centered

Lectures  
Board focus  
Test based  
Choral drills  
“Repeat after me”  
Video  
Large classes  
Text book focus

student  
centered

Game based  
Dialogues  
Pair work  
“Ask your partner”  
Peer learning  
Competitions  
Smaller classes  
Tasks  
TTT vs STT  
Blended models

learning  
centered

21 Century Skills  
Learner autonomy  
Critical thinking  
Visible learning  
Projects  
Flipped model  
Self correction  
Edtech rising

Covid school  
closures

Cognitive  
Science

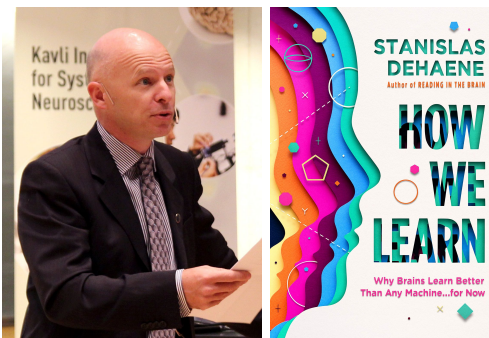
Home learning

Neuroscience

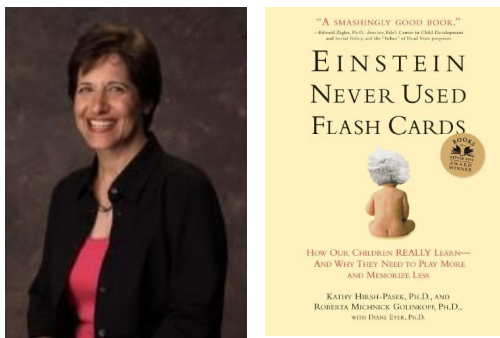
learning  
centered

21 Century Skills  
Learner autonomy  
Critical thinking  
Visible learning  
Projects  
Flipped model  
Self correction  
Edtech rising

# Providing the best **opportunities for learning**



**Dr. Stanislas Dehaene**  
Chair of Experimental  
Cognitive Psychology at  
the Collège de France in  
Paris.



**Dr. Kathy Hirsh-Pasek**  
Professor Early Childhood  
Psychology  
**Temple University**



**Dr. Andrew Huberman**  
Professor in  
Neuroscience  
**Stanford University**

Let's look at the  
**science of learning**





# Active 'Minds on' language learning

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A\_\_ve  
en\_\_m\_nt

F\_\_\_\_d  
\_\_enti\_n

Incr\_\_sing  
cha\_\_enge

\_\_\_\_nuous  
feed\_\_\_\_

# Active 'Minds on' language learning

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Active  
engagement

Ensure kids are maximising interactions and learning opportunities.

Focused  
attention

Means reducing distractions and keeping kids on task.

Increasing  
challenge

Making sure language input is scaffolded and keeps kids moving forward.

Continuous  
feedback

Keeping kids and parents informed on how well they learning. Developing independent learners.



Active  
engagement

Ensure kids are  
maximising  
interactions and  
learning opportunities.

Passive(Minds off) vs Active (Minds on)

Watching a lecture  
Drawing new words

## **TBL**

Peer teaching  
Using a video  
Taking notes

## **Flashcard Drills**

## **CLIL**

Tapping on a tablet  
Doing a puzzle  
A gap fill

**Minds Off**

**Minds On**

Watching a lecture

Drawing new words

**TBL**

Using a video

Peer teaching

**Minds Off**

Using a video

**Minds On**

Taking notes

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**Flashcard Drills**

**CLIL**

Tapping on a tablet

Doing a puzzle

A gap fill

What does the **research** say?



## Active ‘Minds on’ Learning

“The guiding principle could not be clearer:

**a passive organism does not learn....** Active engagement must be promoted.”

The teacher can achieve engagement only if the child or **learner engages themselves.**

Making learning conditions (reasonably) more difficult will paradoxically lead to increased **engagement** and **cognitive effort**, which means improved **attention.**

When 5- to 6-year-old children **actively manipulated an object** while **hearing a new label** and then heard that label again, motor areas of their **brains were more likely to be activated** upon subsequent viewing compared with when they were only allowed to passively watch an experimenter manipulate an object (James & Swain, 2011).





Drawing the chemical reactions after the experiment, students who drew outperformed those who only did the experiment

Lecture-experiment-actively recall

**The drawing effect: Evidence for reliable and robust memory benefits in free recall**

Jeffrey D. Wammes, Melissa E. Meade & Myra A. Fernandes

Students who **stop, start, rewind, and repeat** videos do better than those who just watched the video passively

Bergman & Sams 2014



YouTube

diameter  
circle  
radius  
Circumference

$C = \pi d$   
 $d = \pi \cdot 2\text{cm}$   
 $\frac{C}{d} = \pi \approx 3$

diameter = 2 x radius

ratio of the Circumference to diameter

$\frac{\pi}{1} \approx 3.1 \Rightarrow 3.14159\dots$

5:27 / 11:04

Teach your students how to watch videos

cat

d\_g

r\_\_b\_t

hare

z\_b\_\_

h\_rs\_

ch\_\_p\_\_zee

bonobo

cat

dog

rabbit

hare

zebra

horse

chimpanzee

bonobo

If adults are presented with a **word pair** in which one of the words has **a few letters missing** and are asked to generate the full word, they **will remember the pair better than if they passively read it**

(Hirshman & Bjork, 1988)

# The power of rest periods

“10-20 second periods of doing nothing  
....increase repetitions 20X”

20 minute naps after learning allows  
the mind to process new information



“The science of hearing, balance, and accelerated learning”  
Huberman 2021

## Consolidation of human skill linked to waking hippocampo-neocortical replay - June 2021

Consolidation of skill is superior when **frequent rest periods** are interspersed with practice blocks (**distributed practice**) than when the same total amount of practice is performed over longer continuous blocks (**massed practice**)

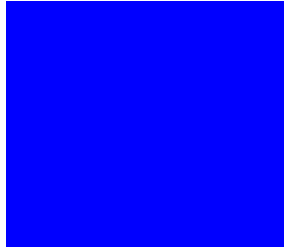
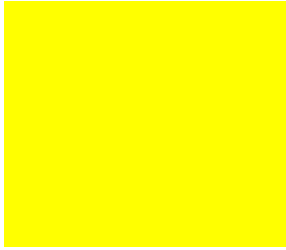
What can you be  
**doing in your classrooms  
and at home?**











## Active learning benefits vocabulary learning.

When 3-year-old children **figured out** the referent of a novel label through a **process of elimination**,

they **showed better retention** of that label than children who were explicitly and directly told the label

(Zosh, Brinster 2013)

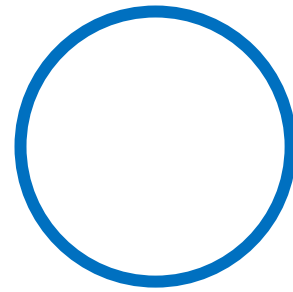


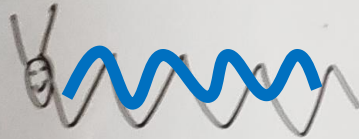
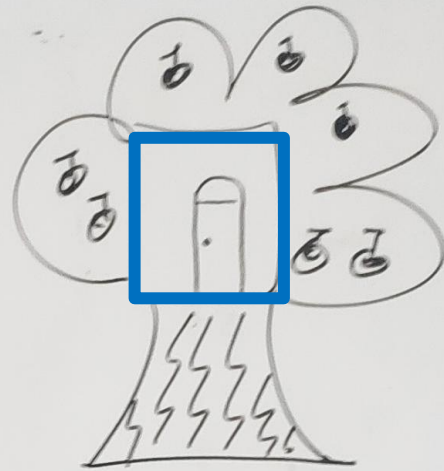
**Draw vocabulary and sentences**



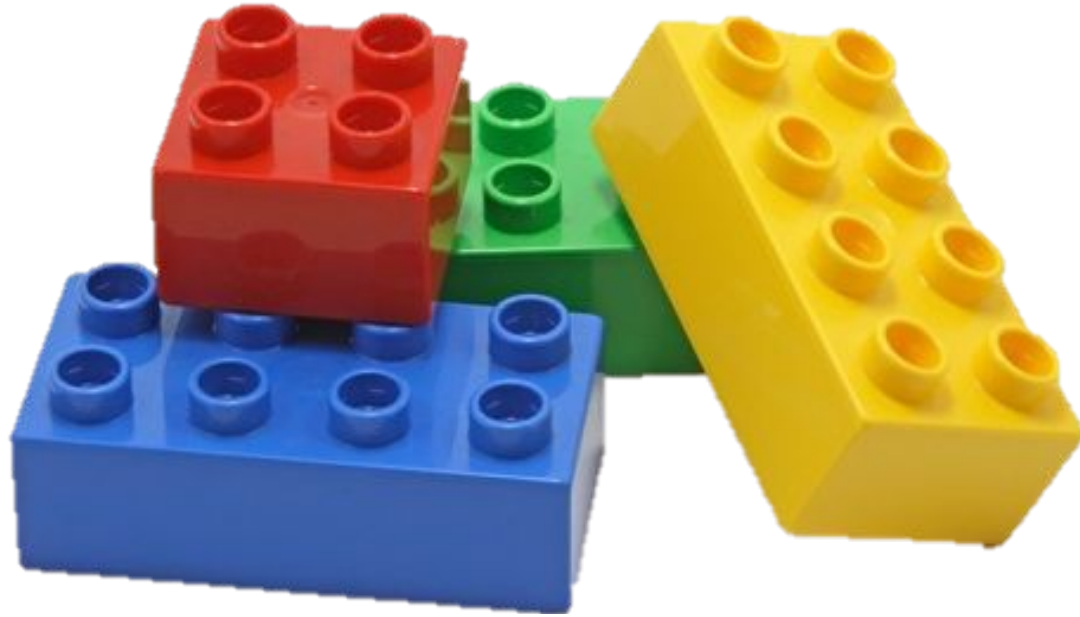
- What can you see?
- What can you hear?
- What can you smell?







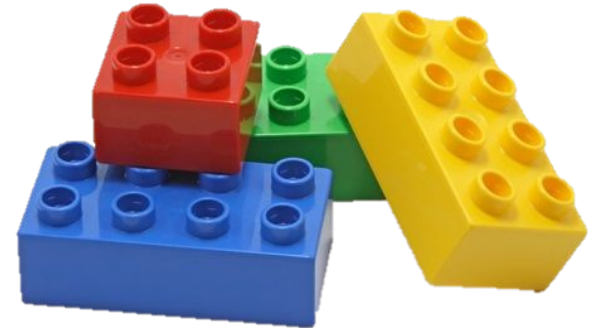




# The block challenge



1. Build a small model out of blocks
2. Half the kids in one room cannot see the model
3. Half the kids can see the block and need to communicate how to build the example



What is “Minds On” here?



# Peer teaching

“subjects who learned in order to teach were more intrinsically motivated, had higher conceptual learning scores, and... were more actively engaged . . . than subjects who learned in order to be examined”

Mazur 2009, Benware & Deci, 1984



# Choice

<b>Draw it</b>	<b>Act it out</b>	<b>Say it</b>
<b>Test</b>	<b>Work alone</b>	<b>Whole class</b>
<b>Write it</b>	<b>Film it</b>	<b>?</b>

Choose a Seat for the Day	Have Lunch with the Teacher	Do an Assignment with a Partner	Show and Tell
Choose the Class Writing Topic	Play a Class Game	Give the Entire Class 5 Minutes of Extra Recess	Extra Time with Technology
Read to Our Class	Music Choice	Homework Pass	Read to Another Class
Choose Your Place in Line	Teacher's Assistant for the Day	Choose Your Own Center	Lunch with Another Staff Member

Friendship groupings  
Activity menu  
Format freedom  
Number of sentences

Develops  
Learner  
Autonomy

Let's look at an  
**Education App!**





**Student app**



**Parent & teacher reporting**



**Classroom digital content**

Studycat apps are  
**100% interactive**  
with no passive learning.





# Active 'Minds on' language learning

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F\_\_\_\_d  
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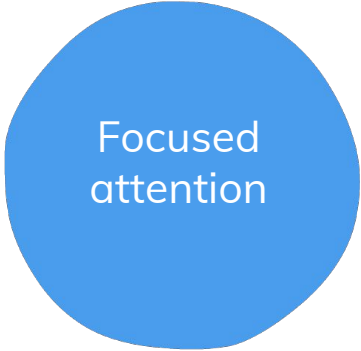
Incr\_\_sing  
cha\_\_enge

\_\_\_\_nuous  
feed\_\_\_\_


# Can you remember?



Active  
engagement



Focused  
attention



Increasing  
challenge



Continuous  
feedback

## Minds on learning!



**studycat.com**

