



FLAME
UNIVERSITY

ConneXions

Connecting the dots with an interdisciplinary approach

WEBINAR - 11

REASSEMBLING EDUCATION IN THE DIGITAL AGE: MEDIA, COGNITION AND INSTITUTIONS

Saturday, June 20, 2020 | 5pm to 6pm IST

SPEAKER



Prof. Prateek Shah

Faculty - Computer Science, FLAME University

Education is expected to change radically with digital media



The current education system is deeply rooted in text

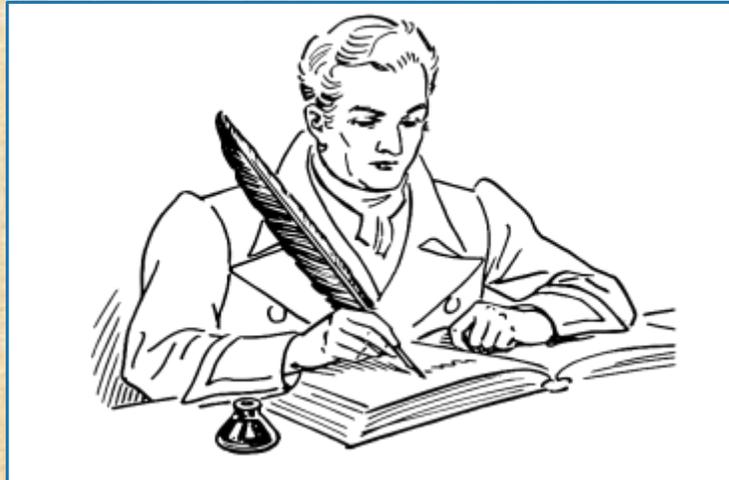


Our minds and media are intimately related

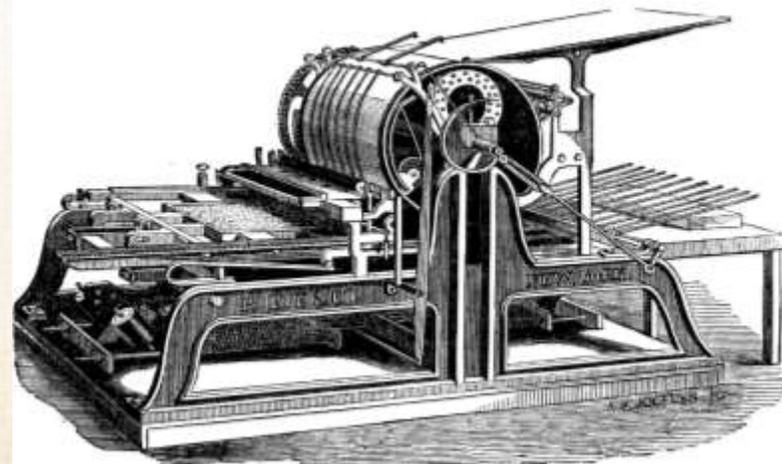
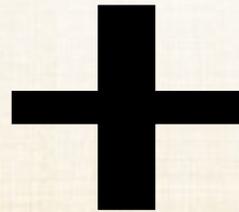


Potential and challenges in moving education to digital roots

DIGITAL REVOLUTION HAS BEEN RAPID

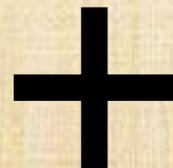


M I L L

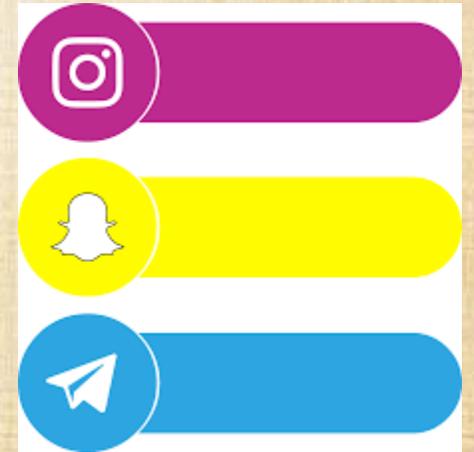
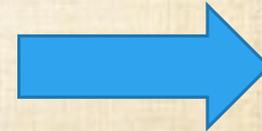
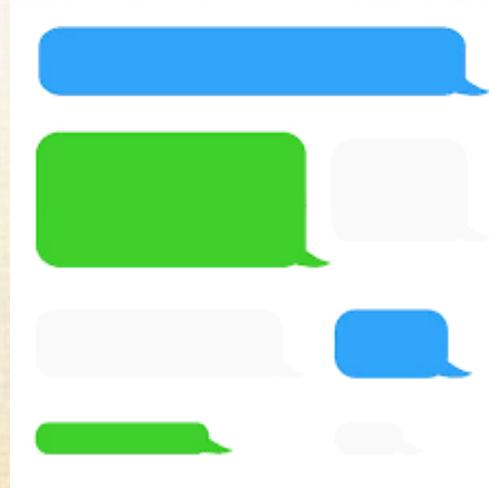
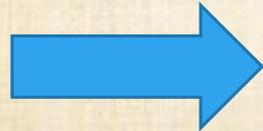


N N I A

DECADES

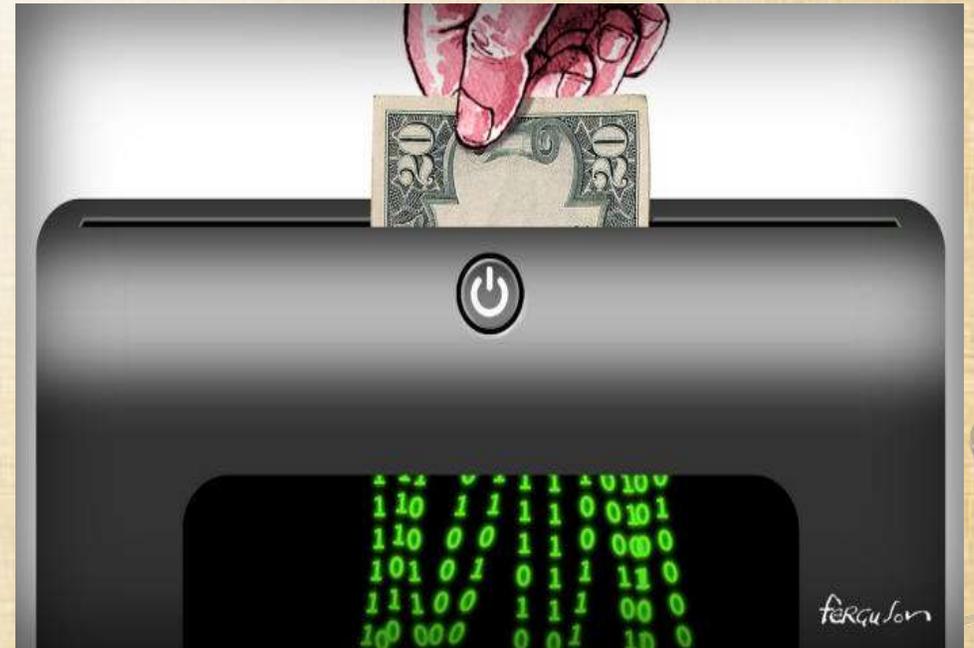
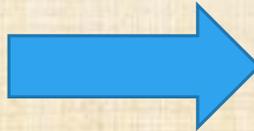


CHANGED THE WAY WE COMMUNICATE



MEDIA NOT JUST FOR COMMUNICATION

- FINANCE: COMMUNICATION CHANNEL TO OPERATING SYSTEM



EDUCATION IS A (VERY) COMPLEX SYSTEM

- GOALS OF EDUCATION ARE DEEPLY CONTESTED
- TRANSFORMS THE (DEVELOPING) MIND, WHICH WE DON'T UNDERSTAND
- PASSES ON INTRICATE KNOWLEDGE SYSTEMS BUILT ON TEXT

THE ANSWER TO DIGITAL LEARNING

- A VERY COMPLEX SYSTEM,
FACING RADICAL CHANGE
- IS LIKE “THE ANSWER TO LIFE,
THE UNIVERSE AND EVERYTHING”

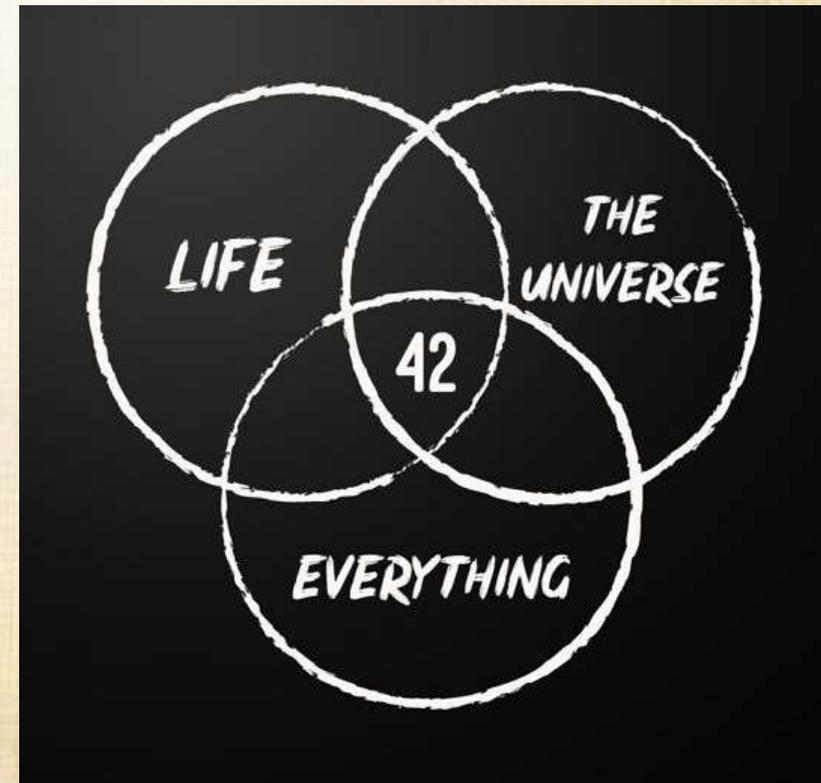


Image: www.rationalgear.com

**THEN SOMEONE ASKED:
“BUT WHAT IS THE QUESTION?”**

CAN WOOD MAKE GOOD HOUSES? (PAPERT, 1987)



THEME FOR TODAY

HOW MIGHT EDUCATION REASSEMBLE
FROM **TEXTUAL FOUNDATIONS** TO **DIGITAL ROOTS**,
CONSIDERING THE DEEP RELATIONSHIP BETWEEN
MEDIA, COGNITION AND INSTITUTIONS?

Education is expected to change radically with digital media



The current education system is deeply rooted in text

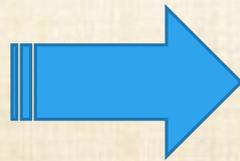


Our minds and media are intimately related

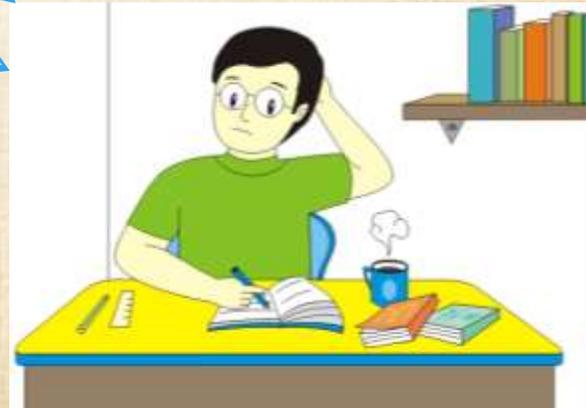
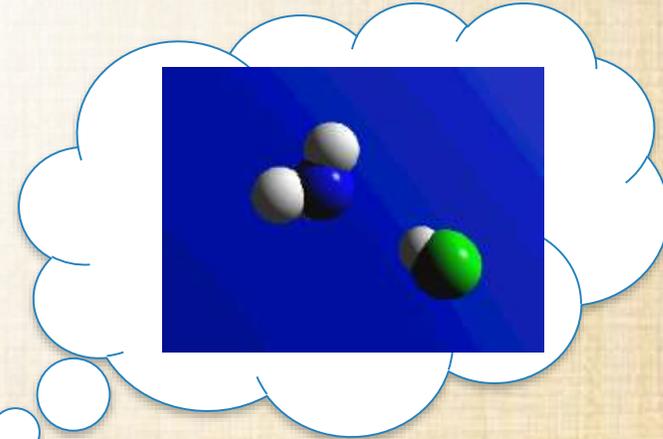
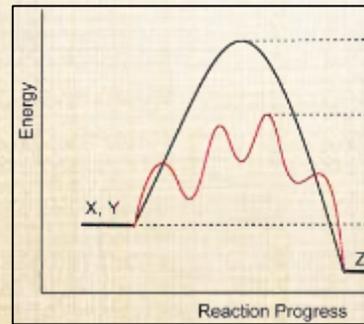
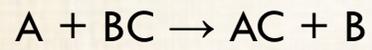
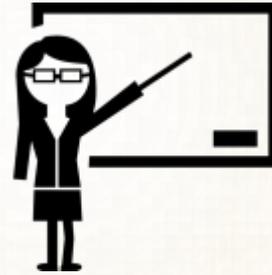


Potential and challenges in moving education to digital roots

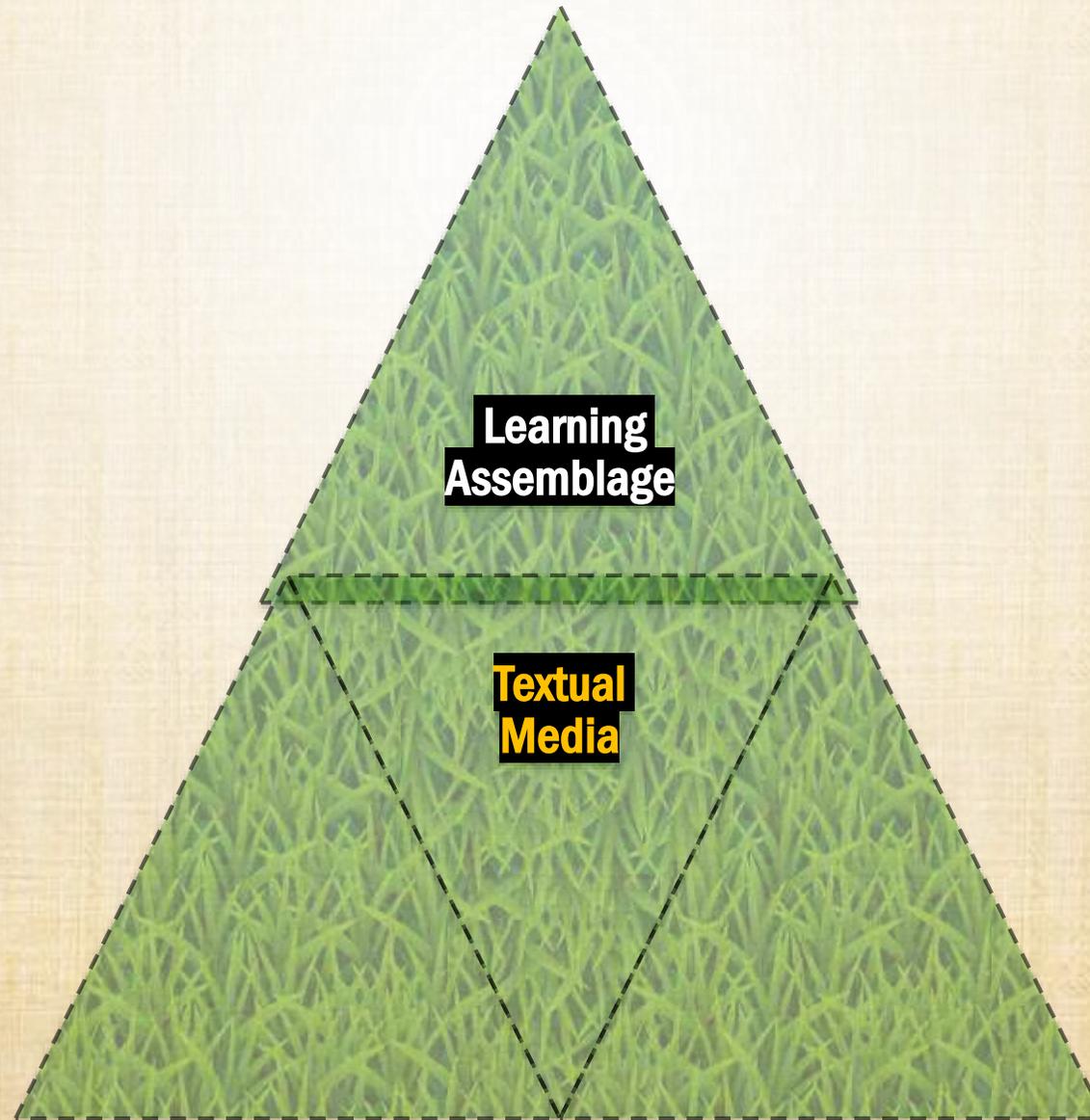
TEXT CENTRAL TO CLASSROOM (SALJO, 2010)

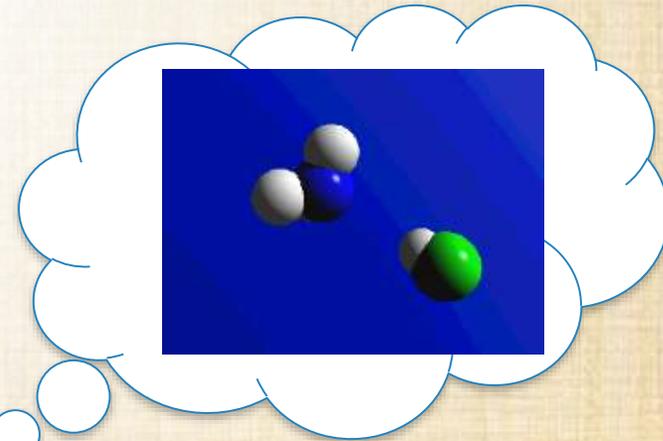
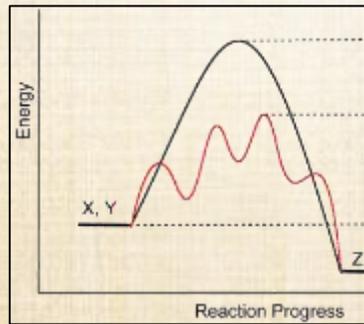
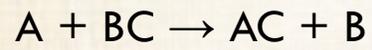
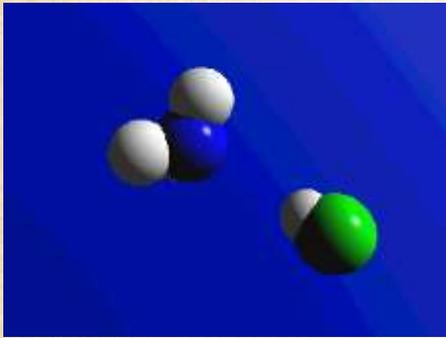


www.pinterest.com



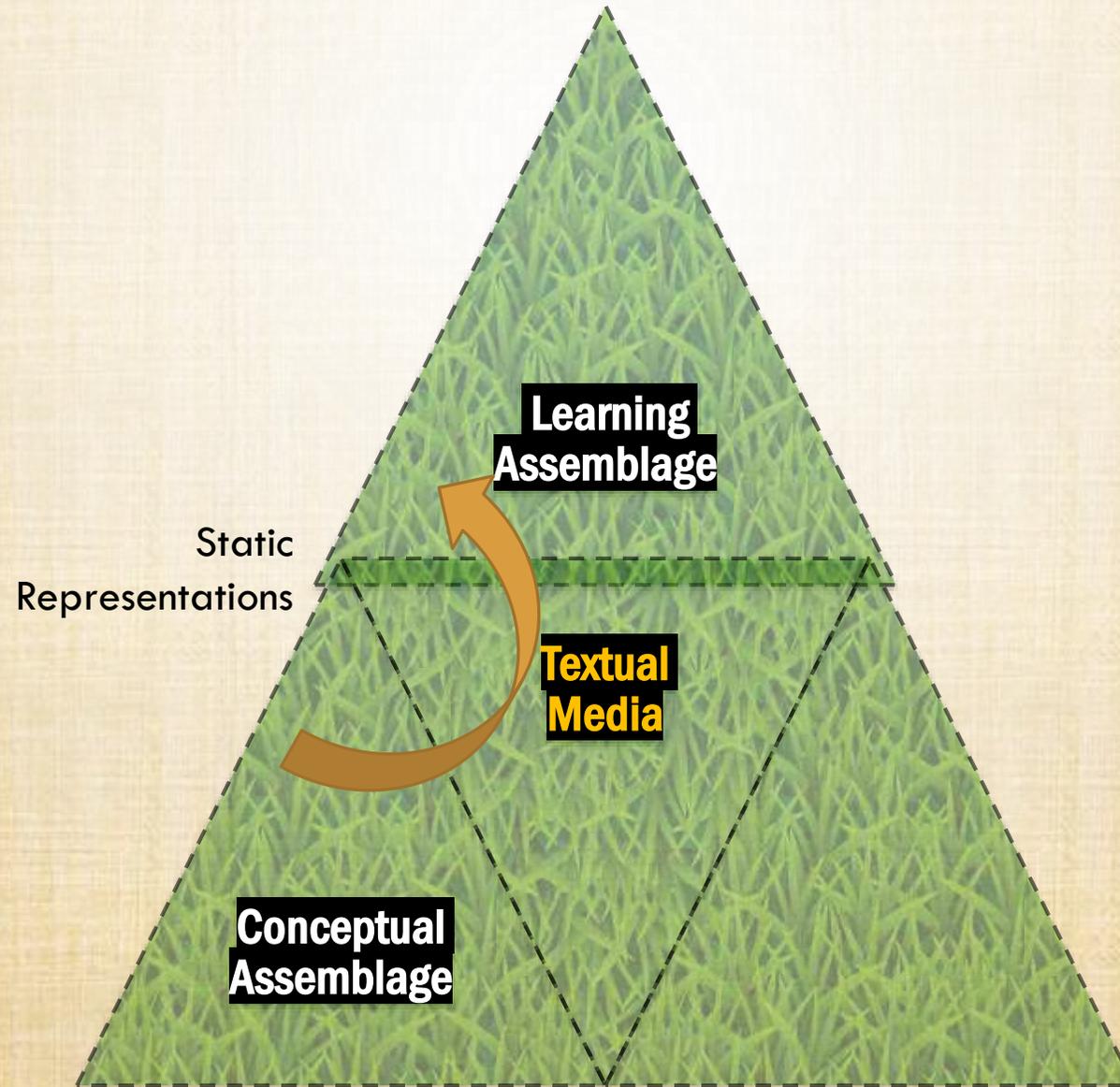
LEARN DYNAMIC
CONCEPTS FROM
TEXTUAL
REPRESENTATIONS

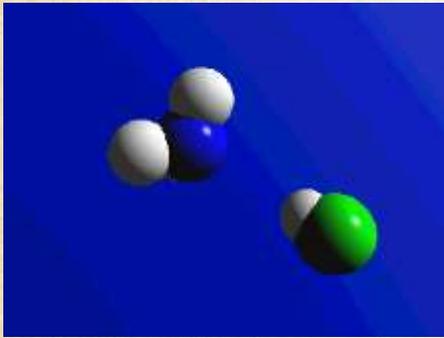




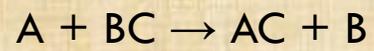
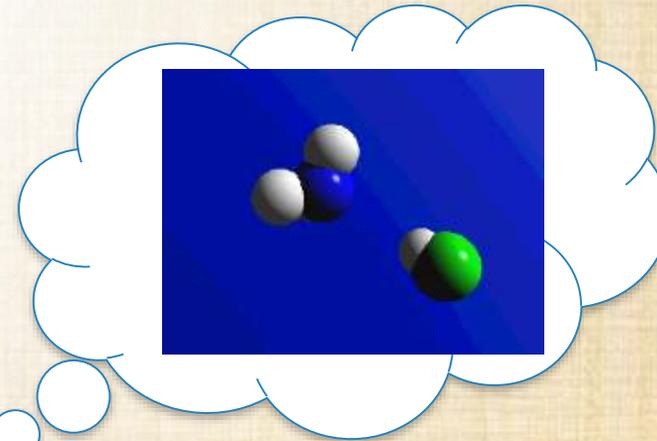
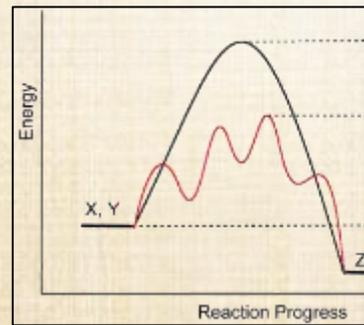
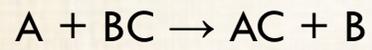
CONCEPTUAL
KNOWLEDGE
CAPTURES DYNAMIC
PROCESSES IN STATIC
REPRESENTATIONS

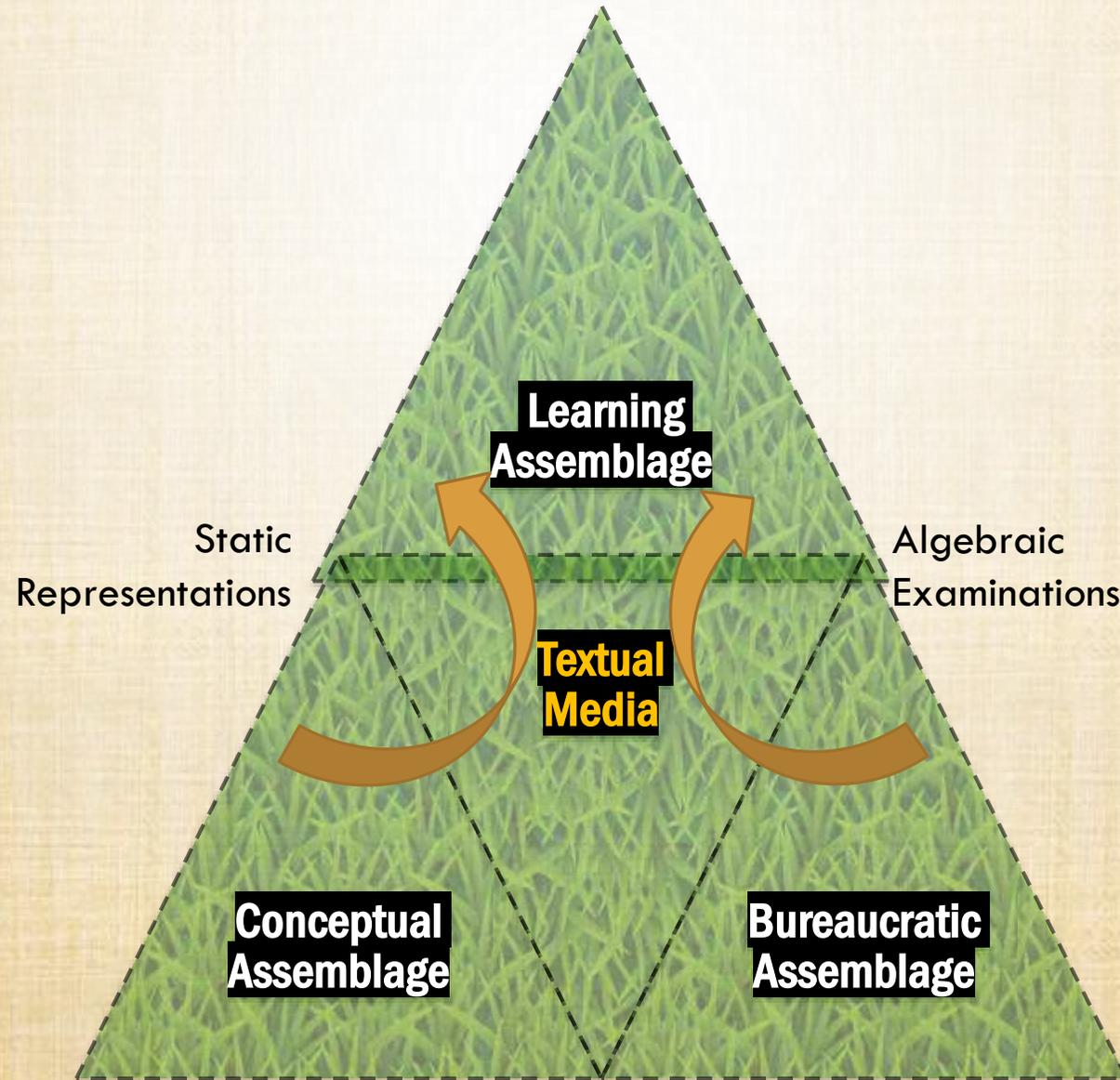




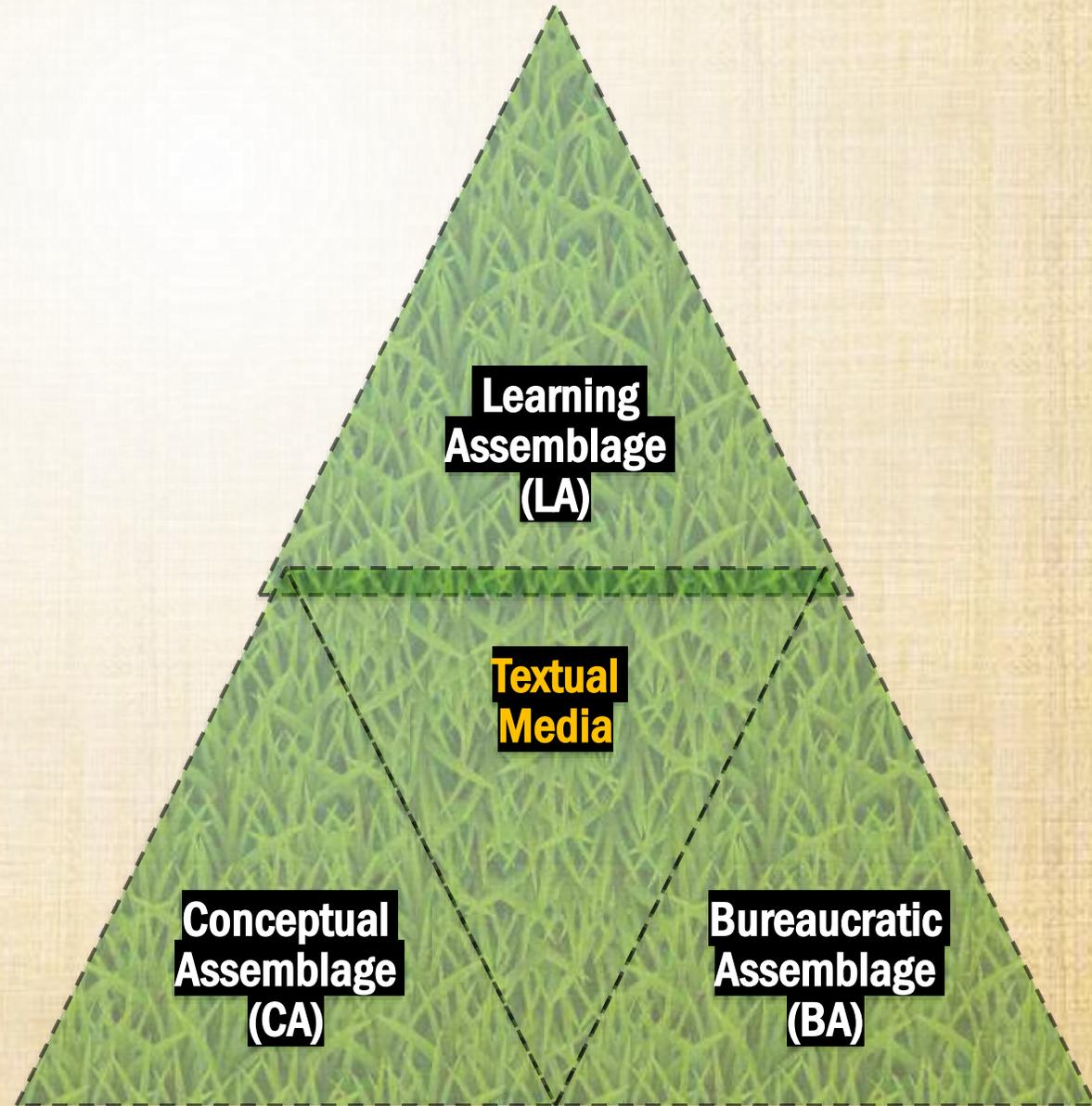


TEXTUAL EXAMINATIONS
LABEL THE LEARNING AS
'SUCCESSFUL'





TEXT-BASED EDUCATIONAL ASSEMBLAGE



Education is expected to change radically with digital media



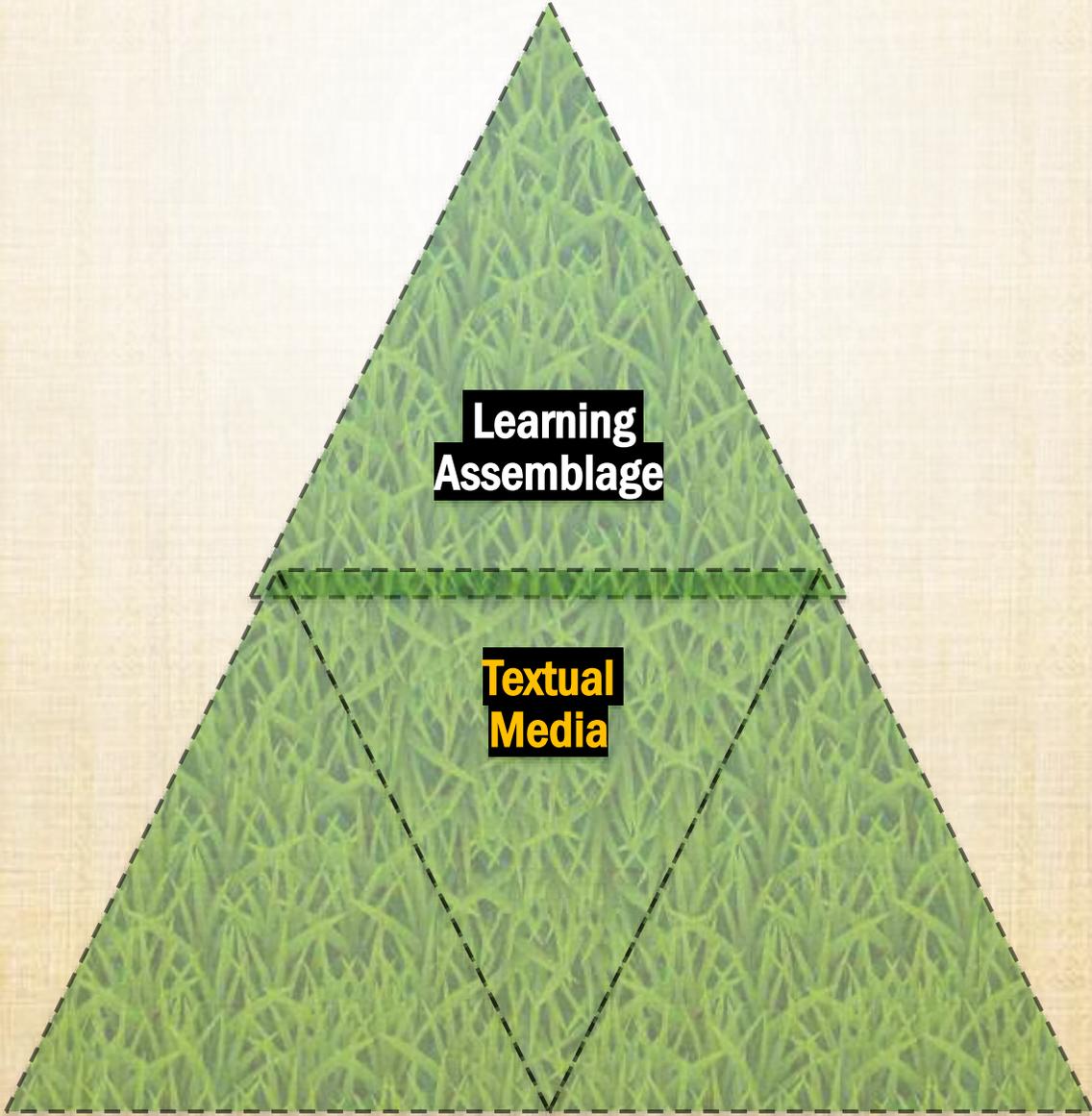
The current education system is deeply rooted in text



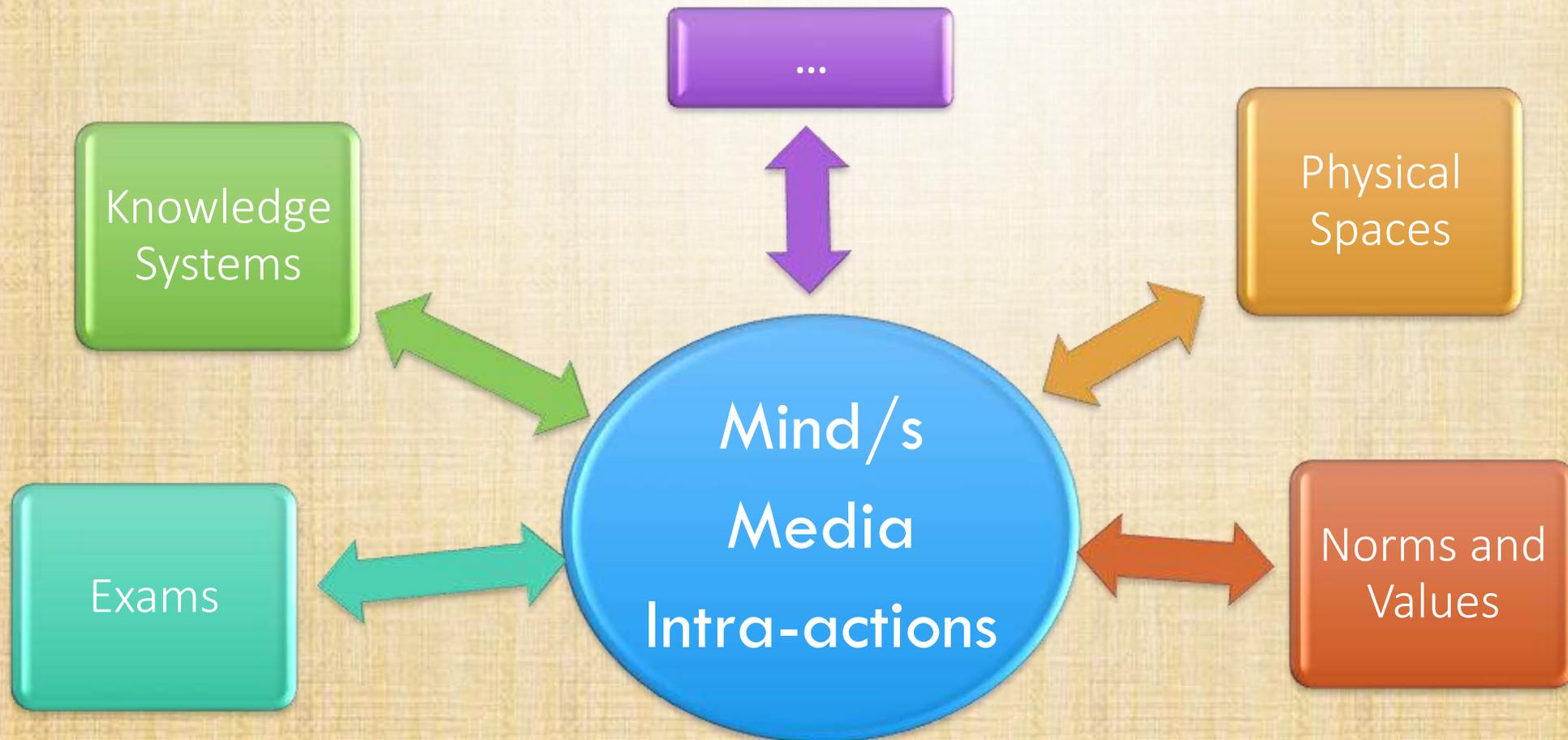
Potential and challenges in moving education to digital roots

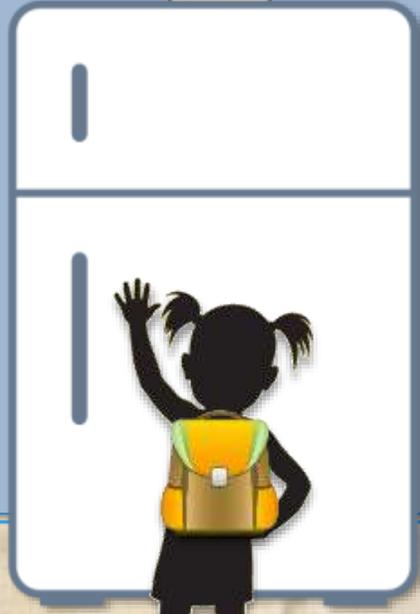


Our minds and media are intimately related



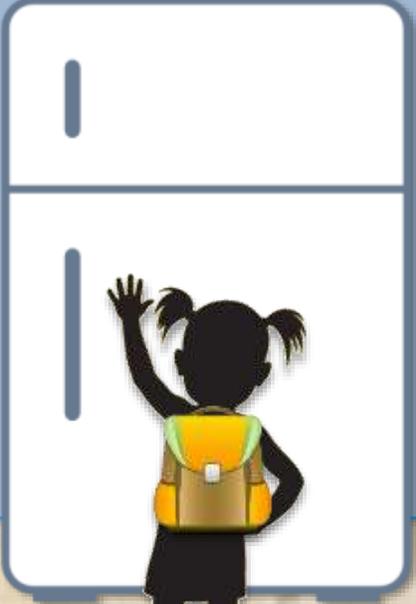
MIND-MEDIA CENTRAL IN LEARNING







Cookies



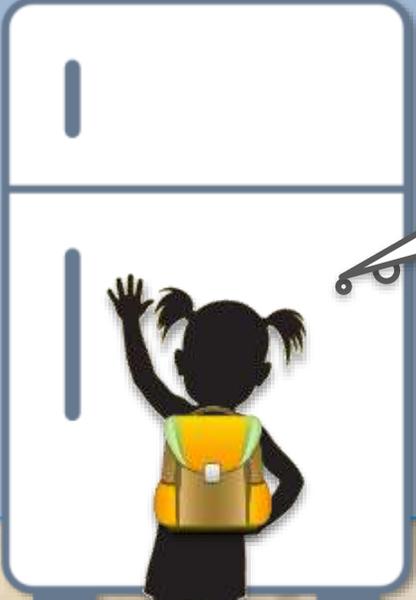
STOOL!





Cookies

STOOL!



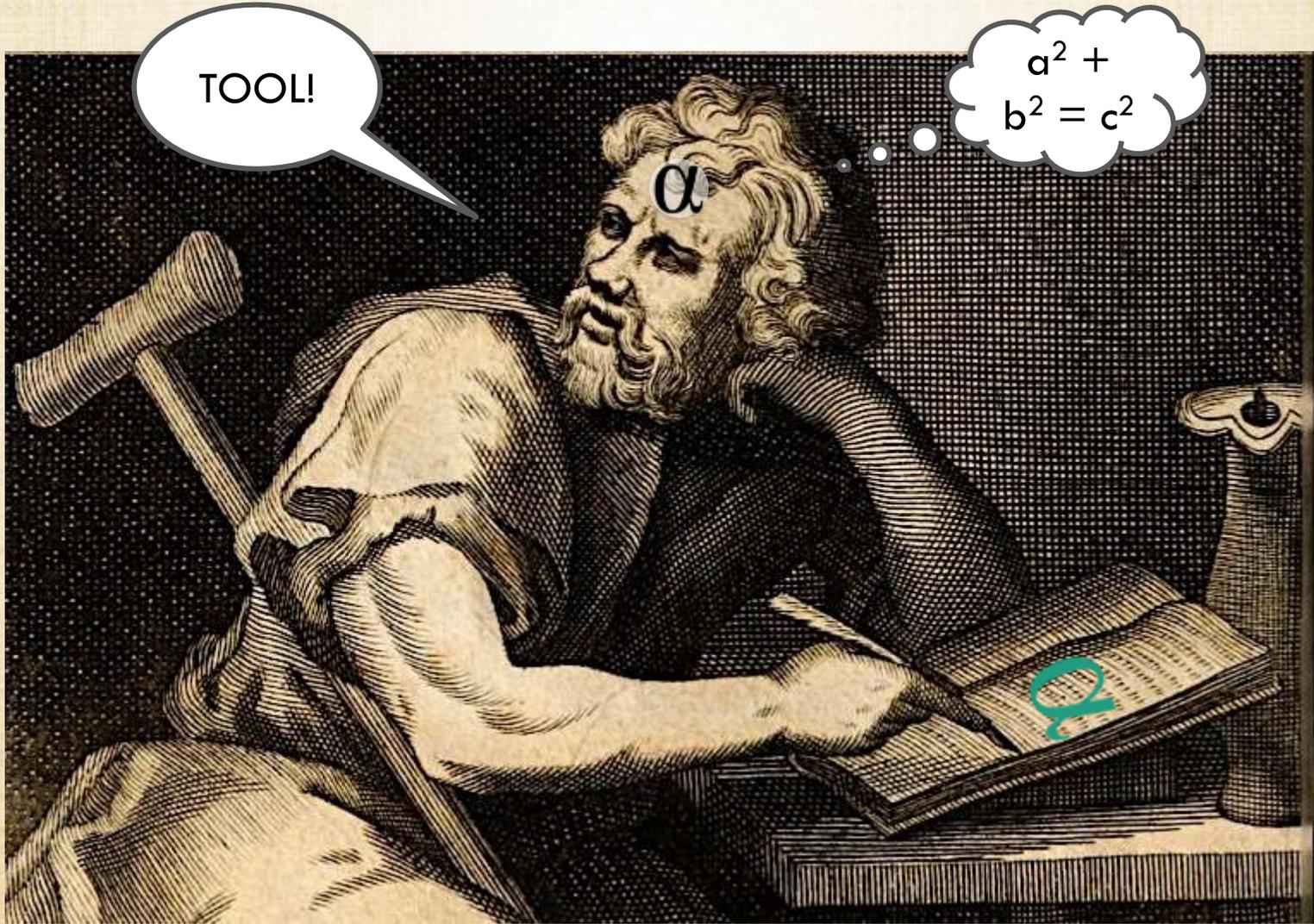
MEDIA AND COGNITION: NOT JUST TALK

- SPEECH EVENTUALLY INTERNALISED INTO THOUGHT
- LANGUAGE CRUCIAL FOR DEVELOPMENT OF 'UNIQUELY HUMAN INTELLECT'

MEDIA AND COGNITION: THE MIGHTY PEN

- EVEN THE ABILITY TO WRITE ALTERS US AS HUMAN BEINGS (ONG, 2013)
- DIFFICULT FOR LITERATES TO IMAGINE HOW MEMBER OF ORAL SOCIETY THINKS





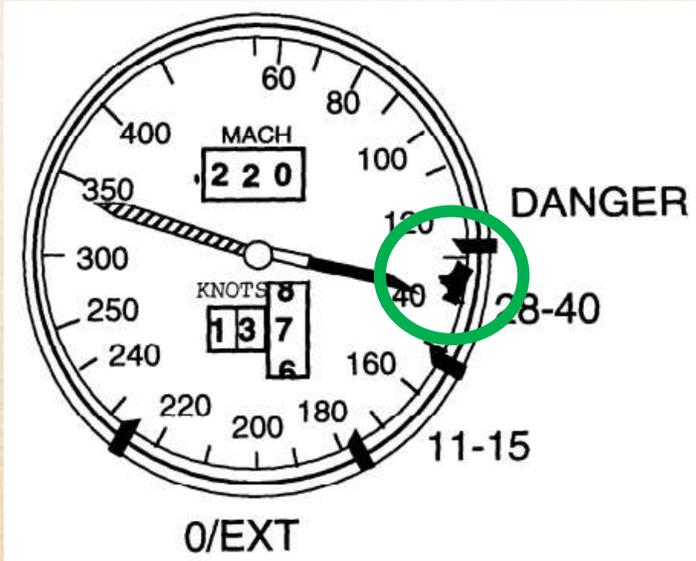
TOOL!

$$a^2 + b^2 = c^2$$

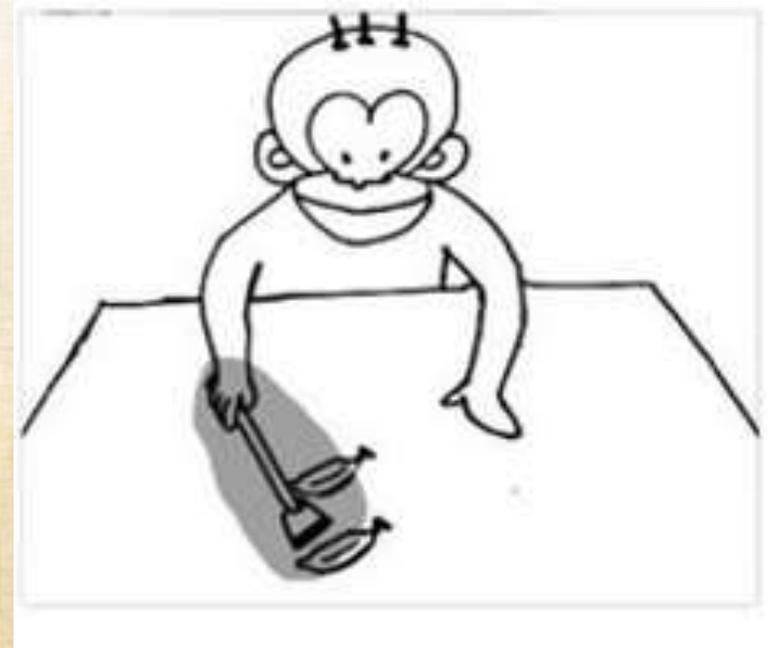
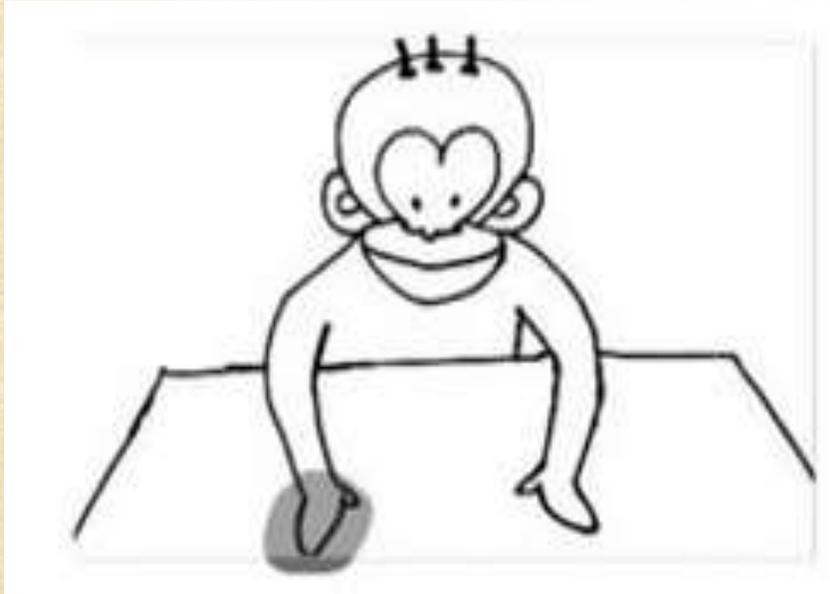
MEDIA AND COGNITION: HOW?

COGNITIVE SCIENCE CAN HELP UNDERSTAND HOW OUR
MINDS CHANGE SO POWERFULLY WITH MEDIA

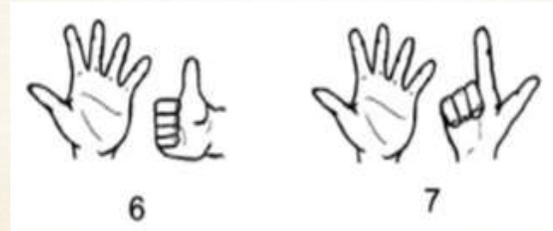
DISTRIBUTED COGNITION (HUTCHINS, 1995)



EXTENDED COGNITION (IRIKI ET AL., 1996)



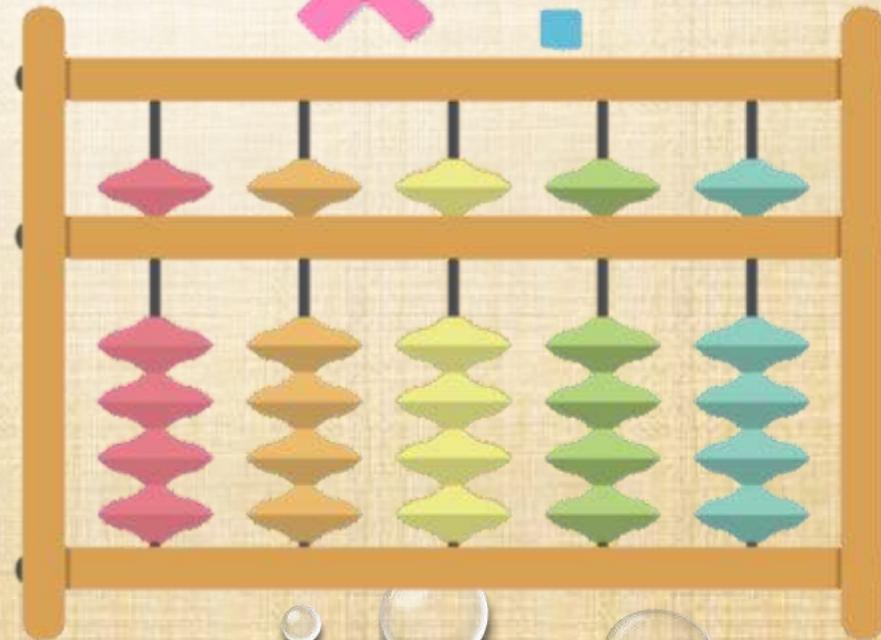
**EMBODIED
COGNITION**
(STIGLER, 1984;
DOMAHS ET AL.,
2010)



German

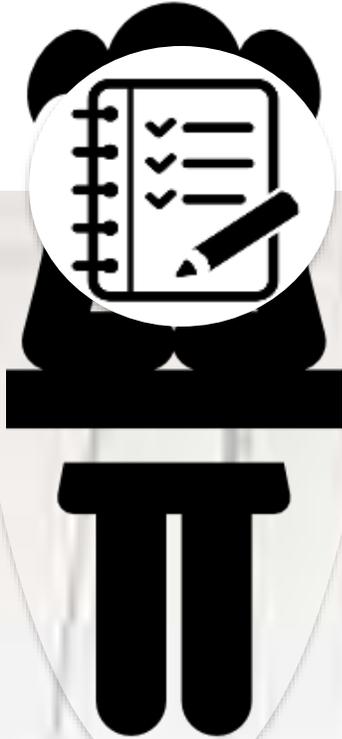
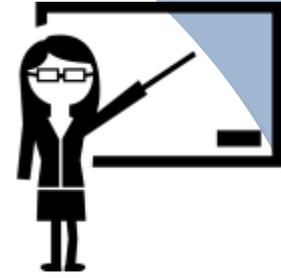
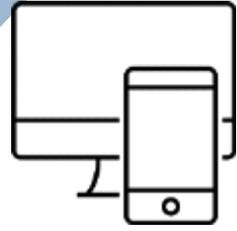


Chinese



MEDIA IN COGNITION

- ENABLES HUMANS AND MACHINES TO THINK TOGETHER IN POWERFUL NETWORKS
- EXTENDS OUR MENTAL CAPACITIES BEYOND OUR PHYSICAL BODIES
- BECOMES OUR INTERNALISED THOUGHTS – IS THE BASIS FOR HUMAN INTELLIGENCE



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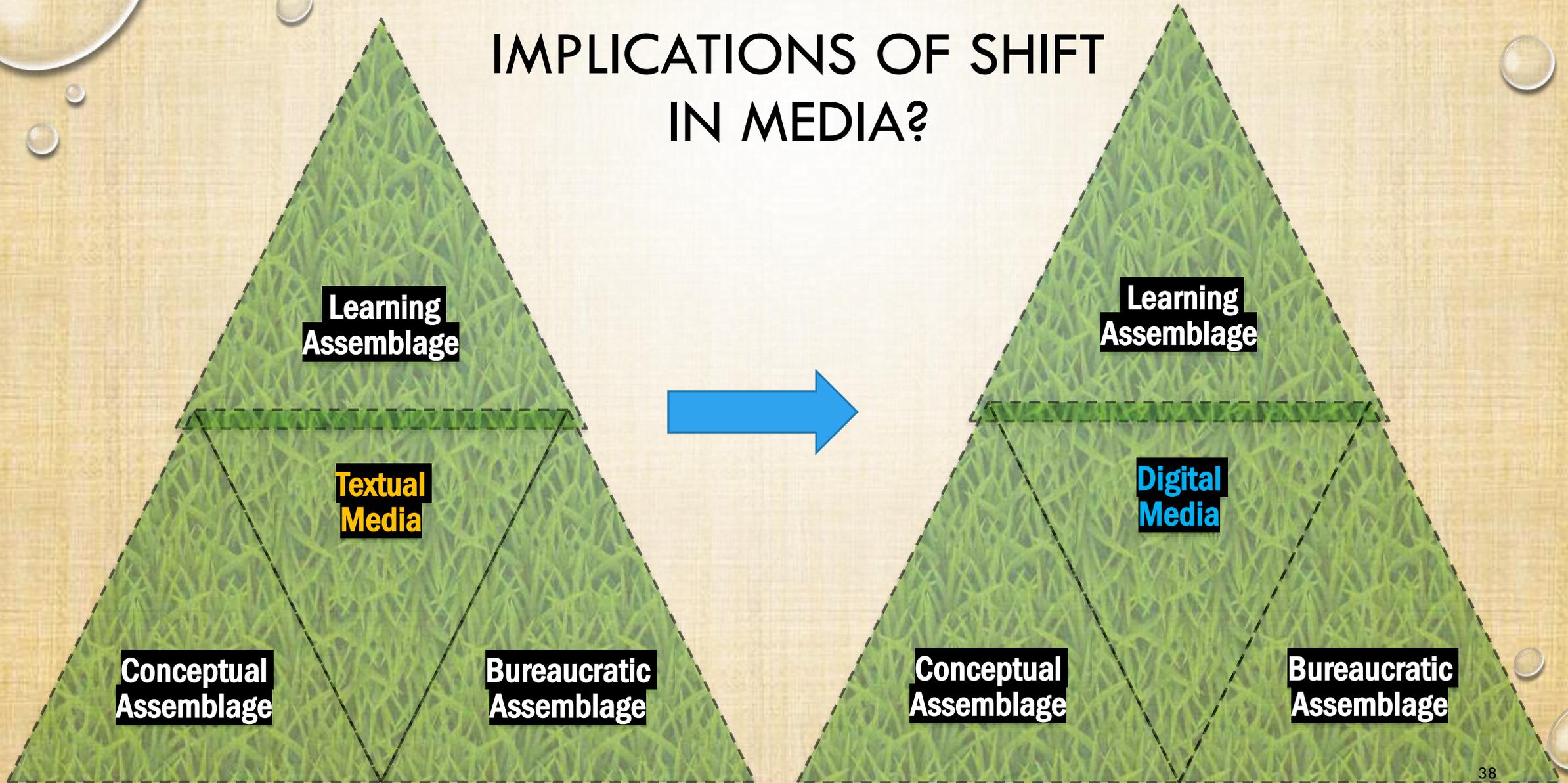


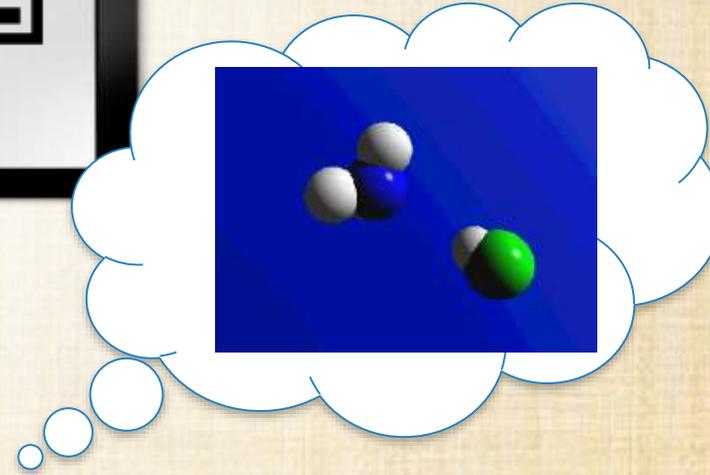
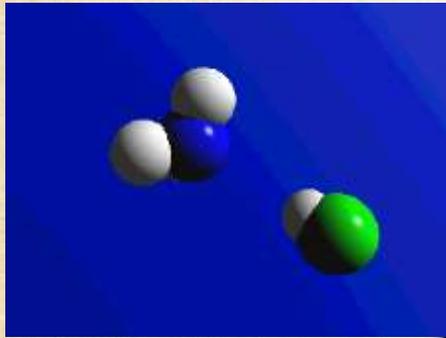
Our minds and media are intimately related



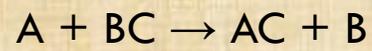
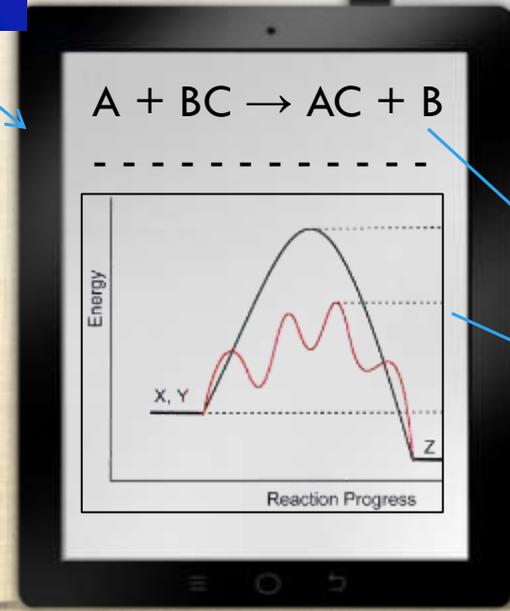
Potential and challenges in moving education to digital roots

IMPLICATIONS OF SHIFT IN MEDIA?





WHAT WE ARE
CURRENTLY DOING
WITH DIGITAL MEDIA



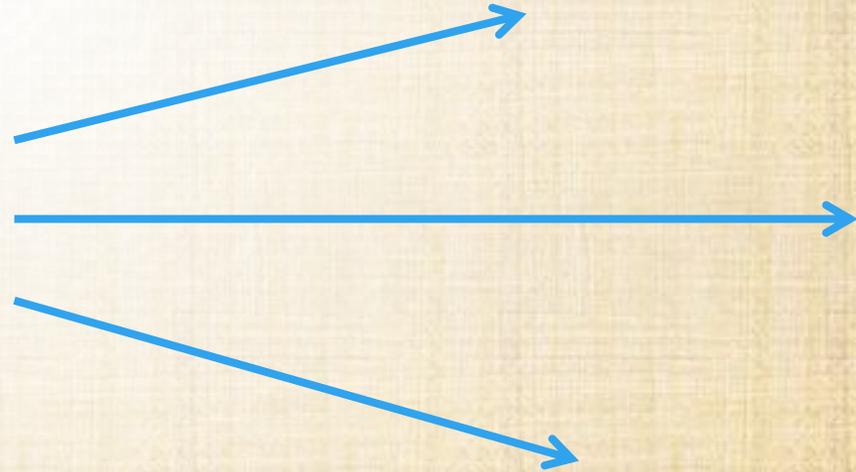
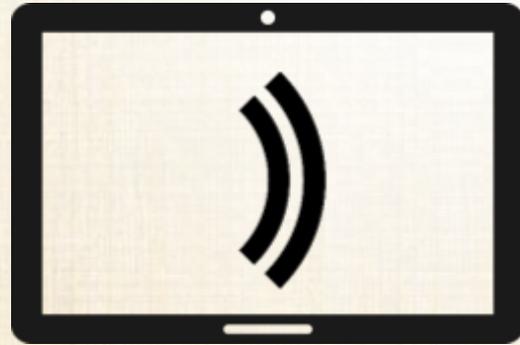


freepik.com

LONG-TERM: NEED TO BE **VISIONARY** AND AWARE THAT WE COULD BE HEADED INTO COMPLETELY UNKNOWN WORLDS!

SHORT-TERM: NEED TO BE **GROUND**ED – DEALING WITH A COMPLEX SYSTEM, AFFECTING ALMOST EVERYONE, TEXTUALLY ROOTED, WITH LIMITED RESOURCES AND EXTREME INEQUALITIES...

...BUT ALSO NEW POTENTIAL FOR INTERACTING WITH KNOWLEDGE



THE ANSWER TO DIGITAL LEARNING

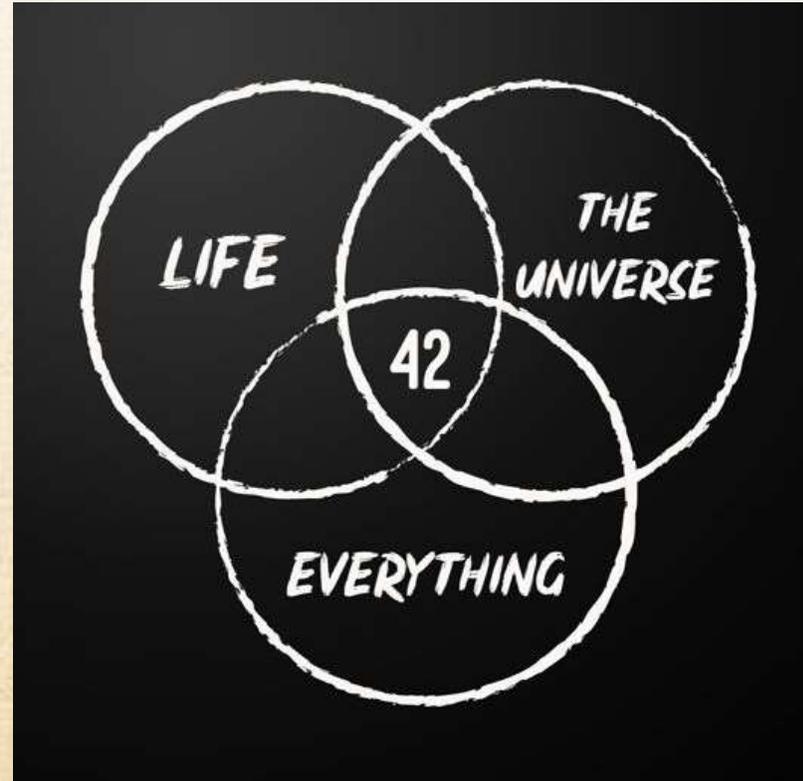


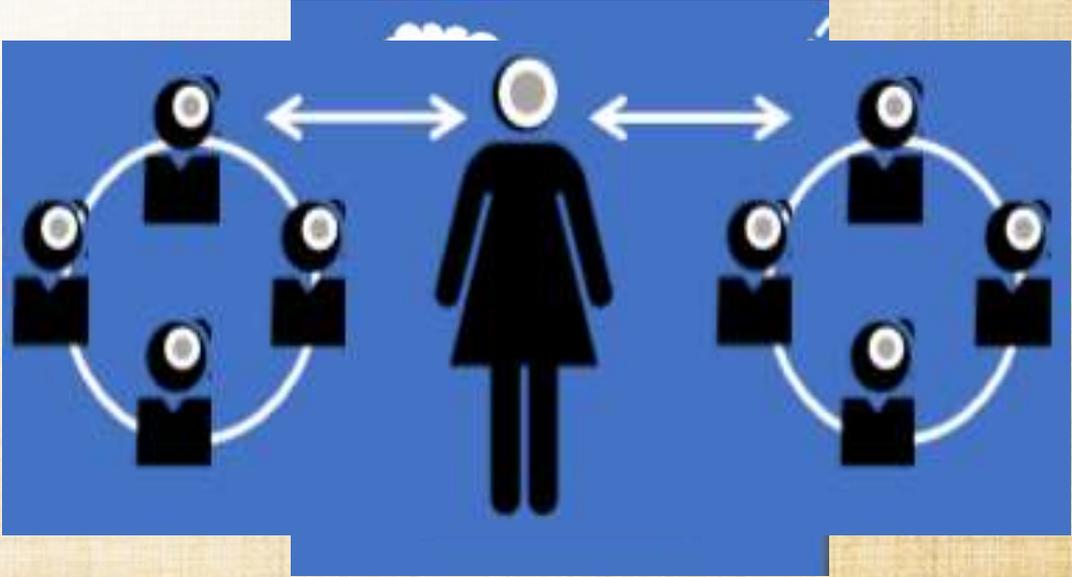
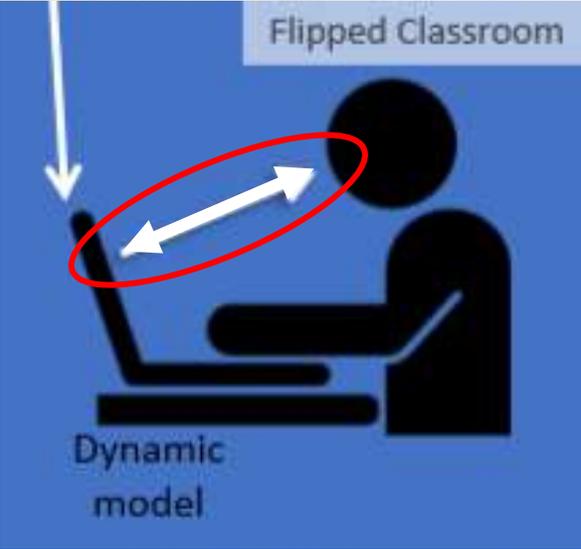
Image: www.rationalgear.com

SHORT-TERM: THE MAGIC WAND



- CAN WAVE IT AROUND, ROTATE IT – IT UNDERSTANDS!
- TOUCHSCREENS PROVIDE LOADS OF INTERACTIVITY
- SPREADING RAPIDLY ACROSS INDIAN HOUSEHOLDS

SHORT-TERM: FLIP THE CLASSROOM



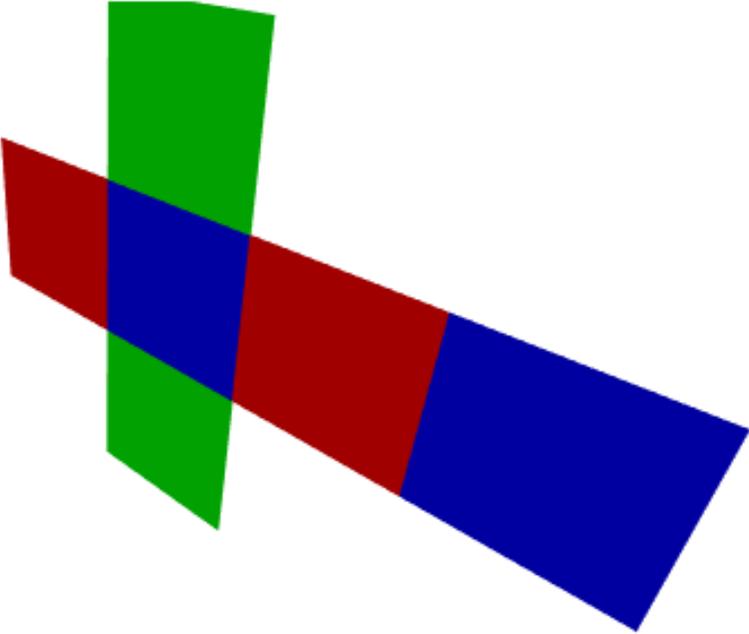
GEOMETRY VIA GESTURES

[BIT.LY/GVG-2](https://bit.ly/GVG-2)

IN COLLABORATION WITH THE LEARNING SCIENCES RESEARCH (LSR) GROUP AT HBCSE

MANIPULABLE SHAPES AND EQUATIONS -
TOGETHER

This is a shape.



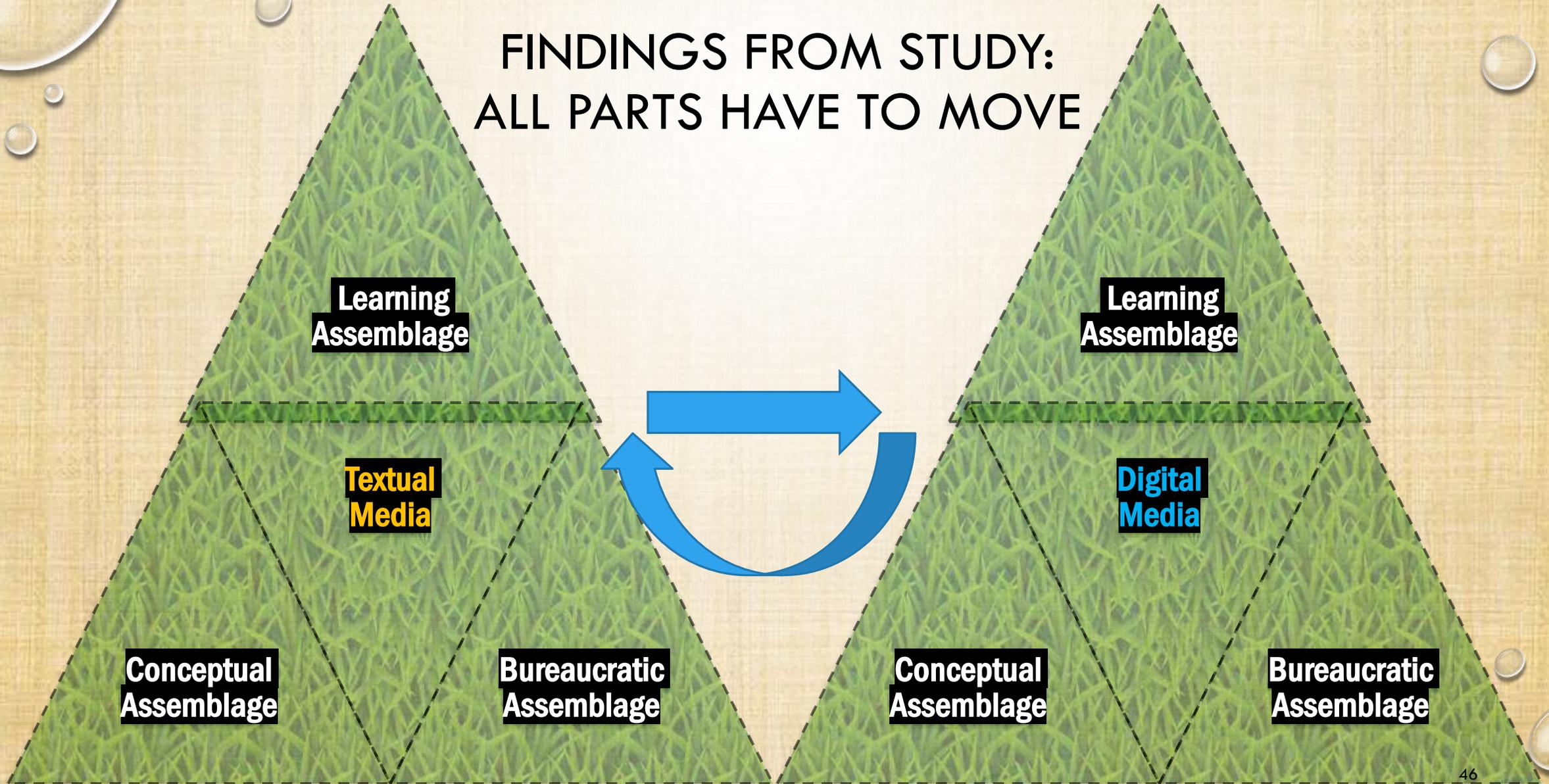
cube ▾ sa ▾ Fold

SA
150 = 6 L
5

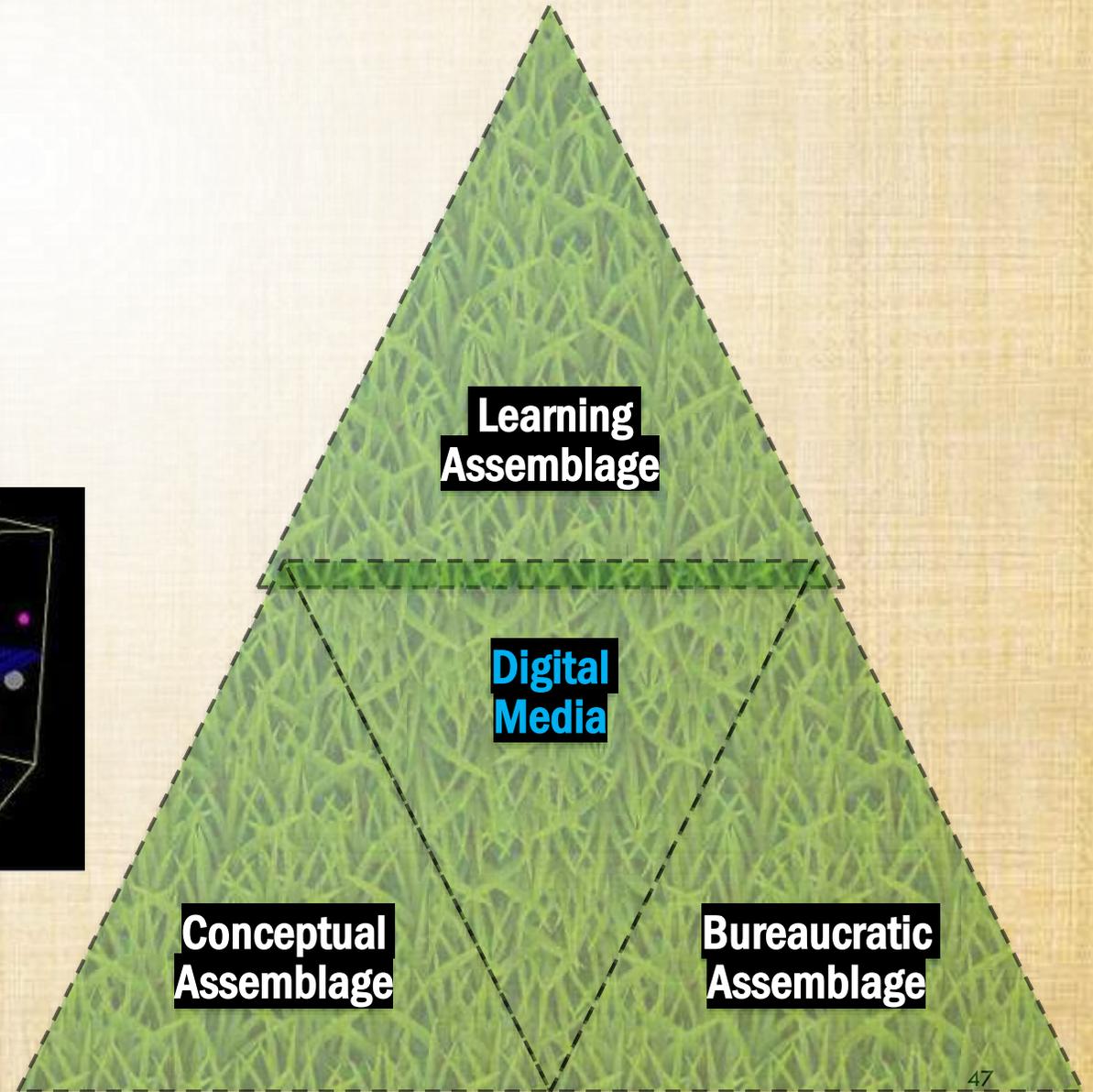
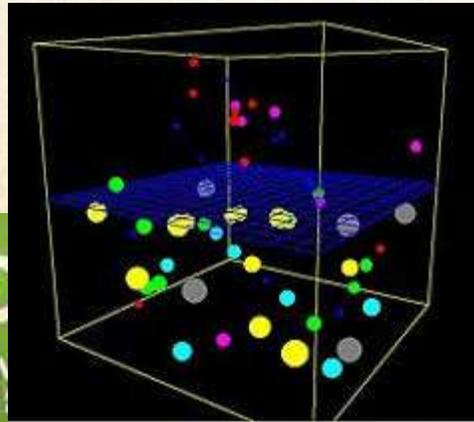
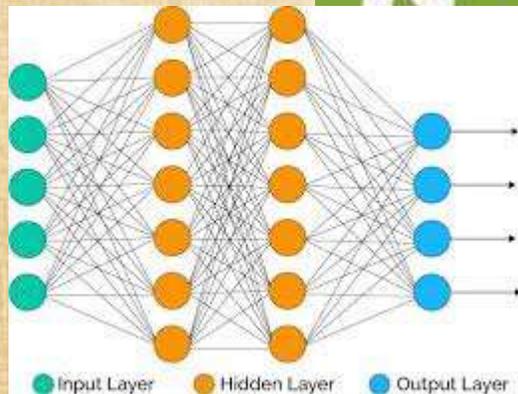
2

The image shows a 3D net of a cube. The net consists of six rectangular faces arranged in a cross-like pattern. The top and bottom faces are green. The middle row consists of three faces: red, blue, and red. The rightmost face of the middle row is blue. Below the net, there is a control panel with a dropdown menu set to 'cube', another dropdown menu set to 'sa', and a 'Fold' button. Below the control panel, there are two orange circular gauges. The left gauge is labeled 'SA' and has the number '150' inside. The right gauge is labeled 'L' and has the number '5' inside. A small orange circle is positioned at the top of the right gauge, with the number '2' next to it. An equals sign is placed between the two gauges.

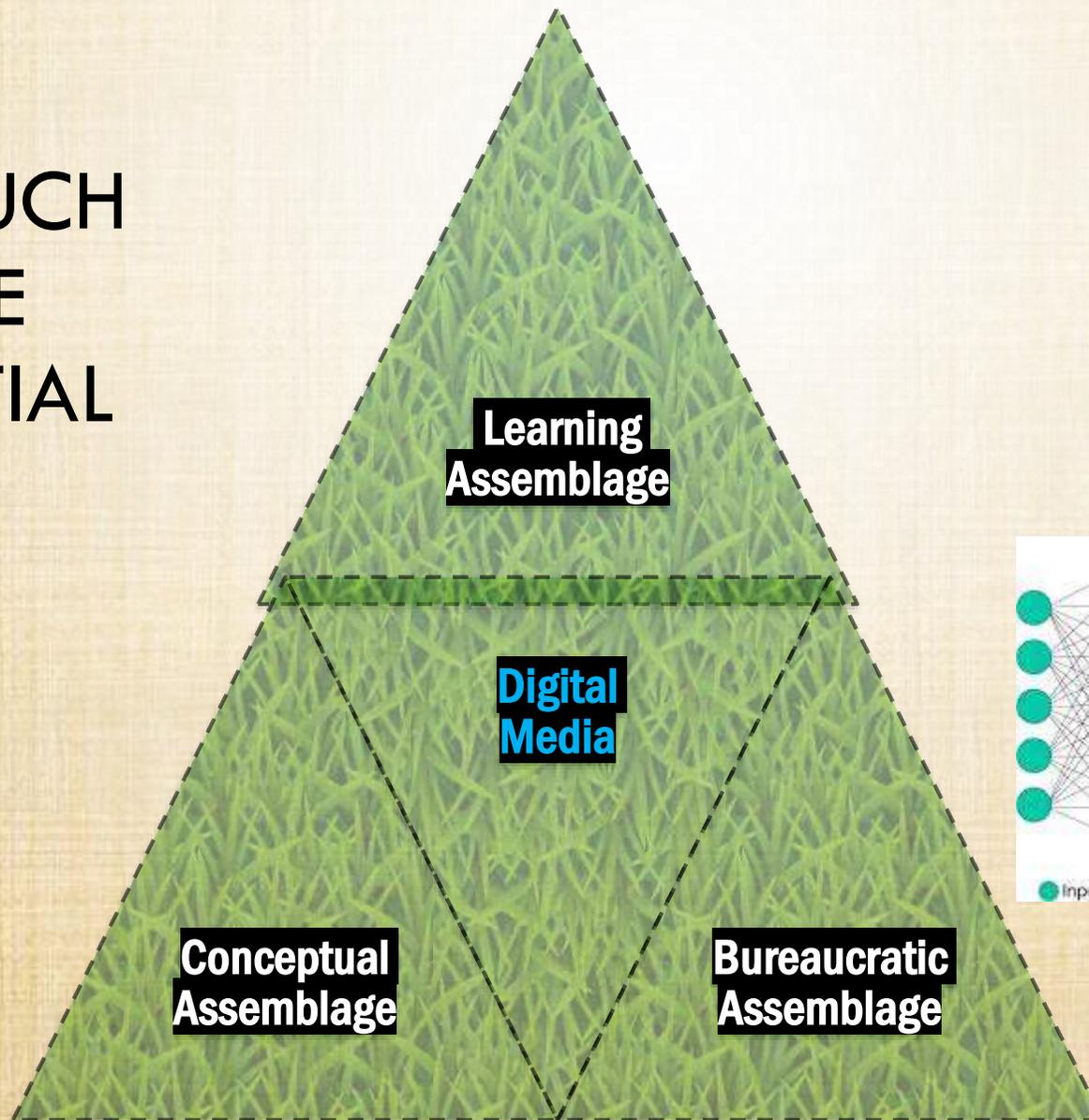
FINDINGS FROM STUDY: ALL PARTS HAVE TO MOVE



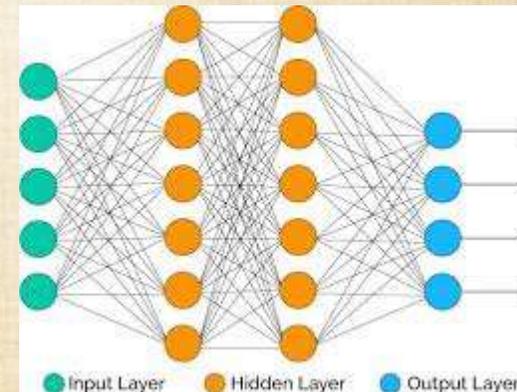
ALREADY MOVING: RADICALLY



AND MUCH
MORE
POTENTIAL

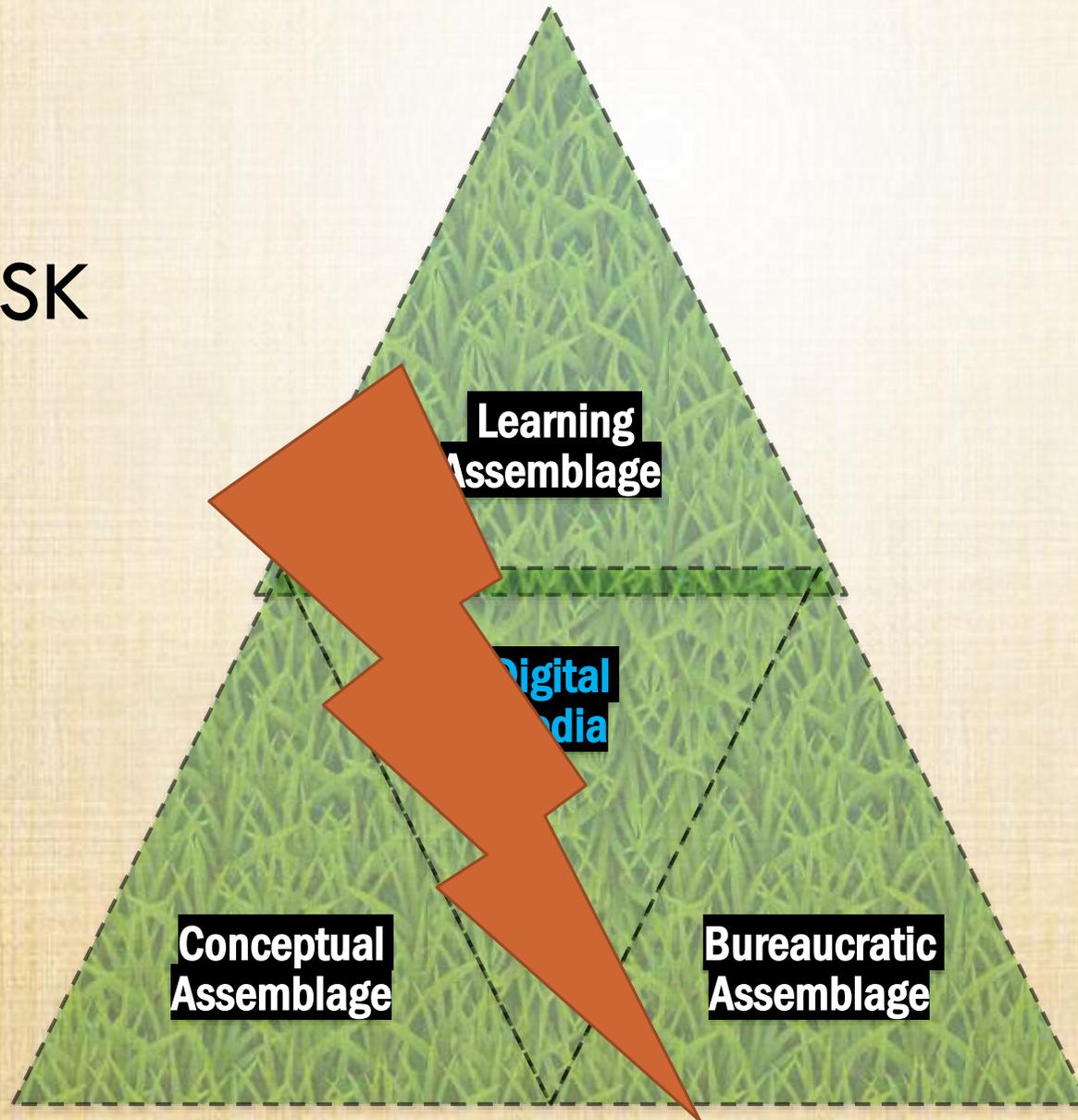


EXCELLENT CLASSIFIERS
(AKA GRADERS)



BUT NOW ALSO
GENERATORS!

AND RISK



RE-THINK
RE-DESIGN
RE-ASSEMBLE



LOCALLY



THANK YOU

QUESTIONS AND COMMENTS

PRATEEK.SHAH@FLAME.EDU.IN

ILLUSTRATIONS: ANVIKA KAPOOR



ConneXions

Connecting the dots with an interdisciplinary approach

Tune in for our next webinar

WEBINAR - 12

ISOLATION AND SOCIAL DISTANCING IN TIMES OF CORONAVIRUS: BETWEEN ATTACHMENT AND ALIENATION

Wednesday, June 24, 2020 | 5pm to 6pm IST

SPEAKERS



Prof. Sabah Siddiqui
Faculty - Psychology, FLAME University



Prof. Ninad Patwardhan
Faculty - Psychology, FLAME University