



Taylor's Education Group

# Learning Space:

*Philosophy, Integration, Culture*

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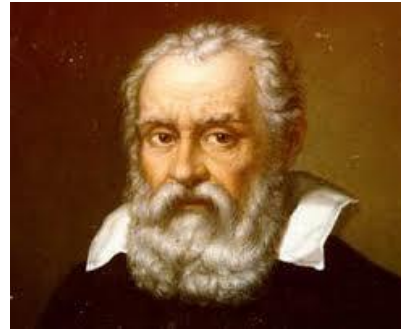
**Dr Daniel Tan**  
**Group Chief Learning Officer**  
**e: [danielth.tan@taylors.edu.my](mailto:danielth.tan@taylors.edu.my)**

# Mass and Gravity



Greek philosopher  
Aristotle (384-322 BC):

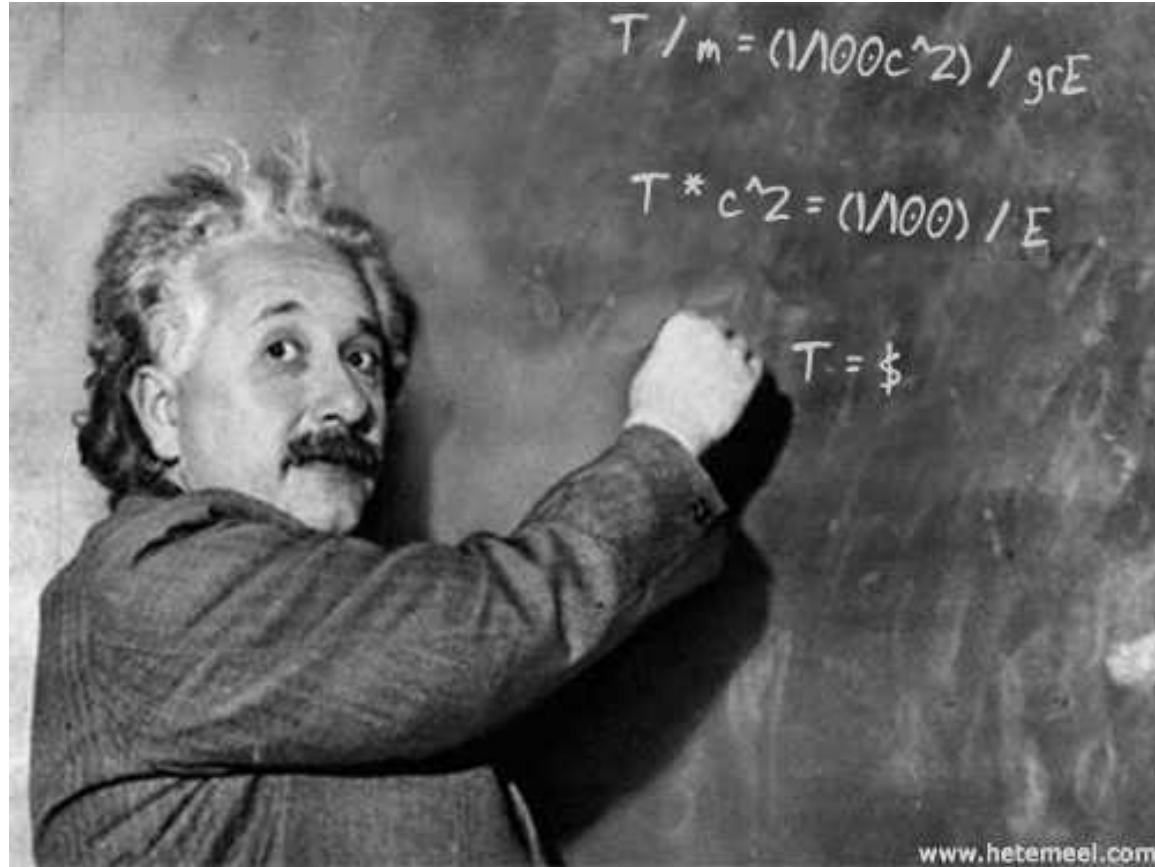
- The mass of an object affects **how fast it will fall**
- Objects with larger masses will **fall faster**



Italian scientist Galileo (1589):

- **The mass of an object does not affect the time it takes to fall to the ground**
- **Proof: demonstrated by dropping two different massed cannon balls from the Leaning Tower of Pisa and they landed at the same time**





**Student:** Dr. Einstein, Aren't these the same questions as last year's [physics] final exam?

**Dr. Einstein:** Yes; But this year the answers are different.



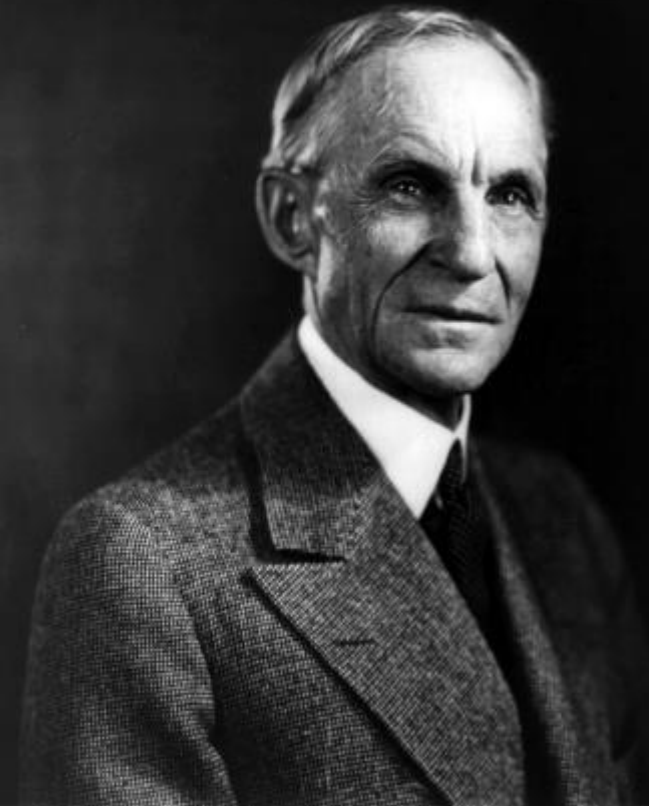
# Transfer



# Transform



[www.leandisrupter.com](http://www.leandisrupter.com) | © leandisrupter 2014



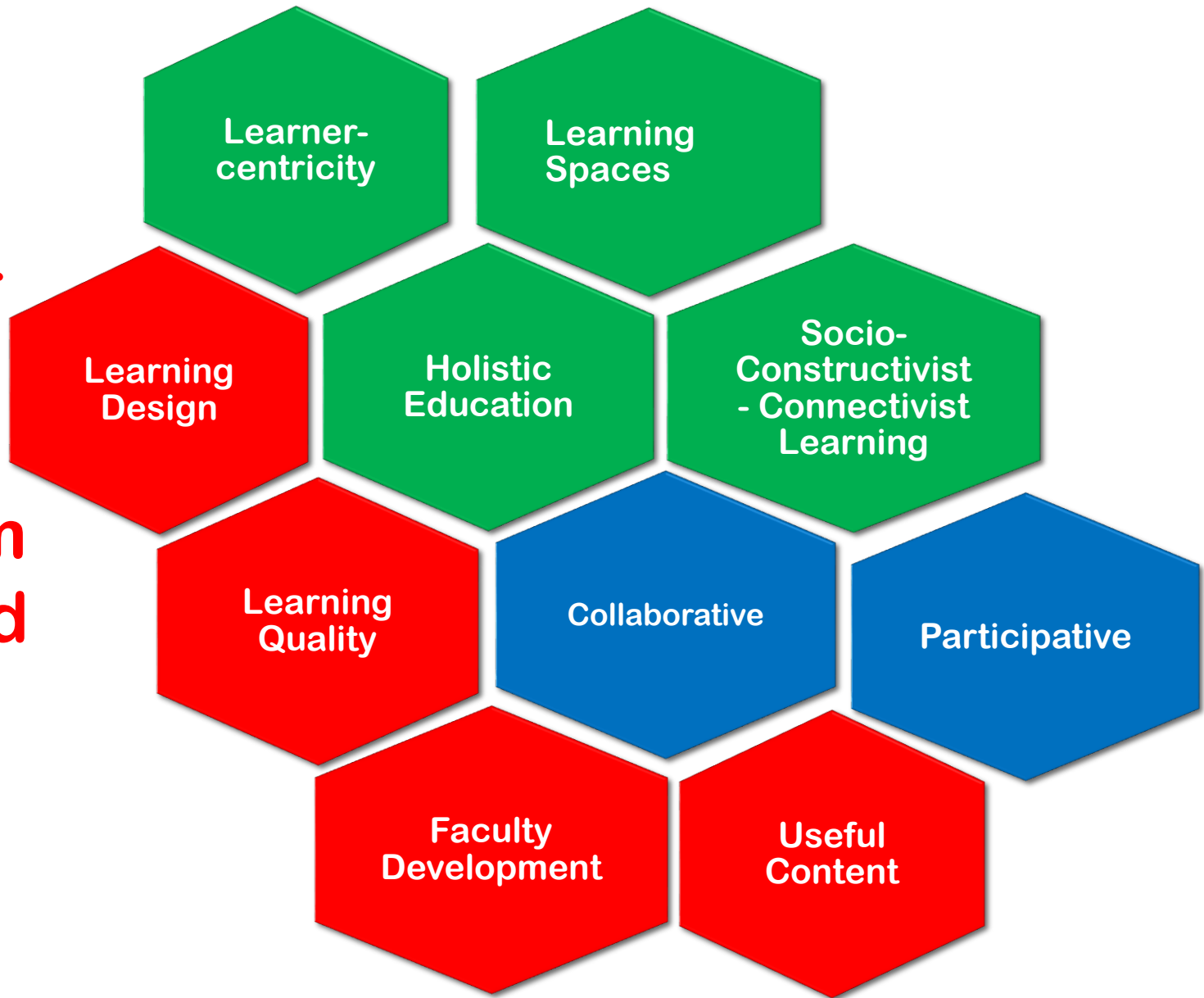
“IF I HAD ASKED PEOPLE  
WHAT THEY WANTED,  
THEY WOULD HAVE SAID:  
**FASTER HORSES...**”

Henry Ford

**Many  
Pieces  
Coming  
Together**

*vs*

**A System  
Designed  
with  
Many  
Parts**



Why?

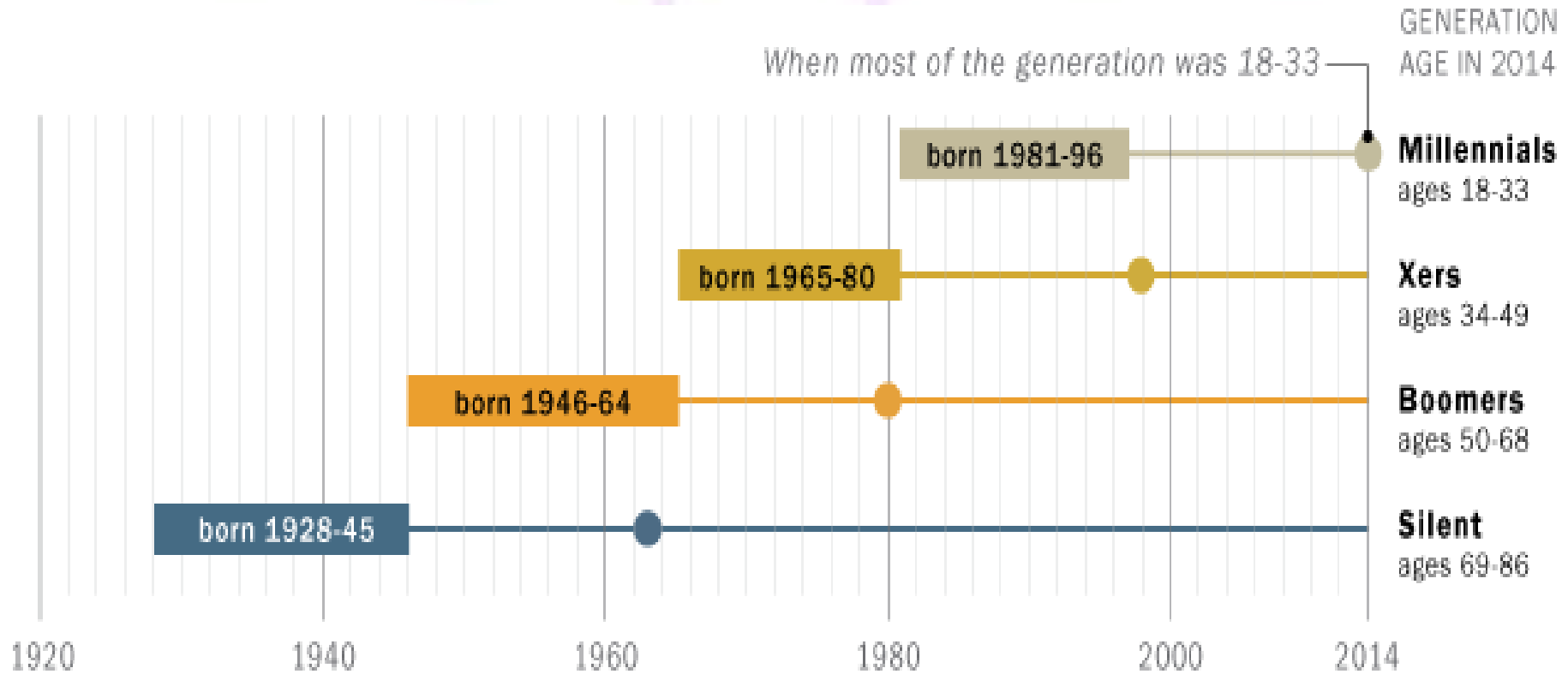
A graphic illustration on a solid red background. The word "Why?" is written in a large, white, rounded, sans-serif font. A black magnifying glass with a black handle is positioned over the question mark, with its lens centered on it. The magnifying glass has a thin red dashed outline. The entire composition is set against a solid red background.

# #1

**Generation Shift and  
Change in Student  
Profiles**



Born 1995 - 2009



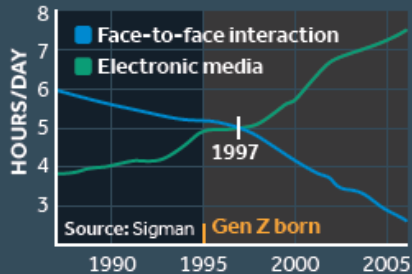


## UNI DEGREES



**X** 1 in 4   **Y** 1 in 3   **Z** 1 in 2\*

## SCREENAGERS



## MOBILITY



**5** CAREERS   **15** HOMES   **17** JOBS

IN A LIFETIME\*



**GLOBAL**  
**2,000,000,000**  
**2 BILLION GEN Zs**

## EFFECTIVE ENGAGEMENT

	Verbal	→	Visual	
	Sit & listen	→	Try & see	
	Teacher	→	Facilitator	
	Job security	→	Flexibility	
	Commanding	→	Collaborating	
	Curriculum centred	→	Learner centric	
	Closed book exams	→	Open book world	
	Books & paper	→	Glass & devices	

## TOP 6 POPULATIONS...

...if social media sites were countries

- Facebook **1600 mil.**
- China **1380 mil.**
- India **1320 mil.**
- Instagram **400 mil.**
- United States **325 mil.**
- Twitter **320 mil.**

## TOP NAMES

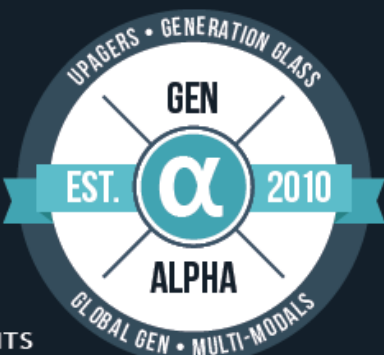
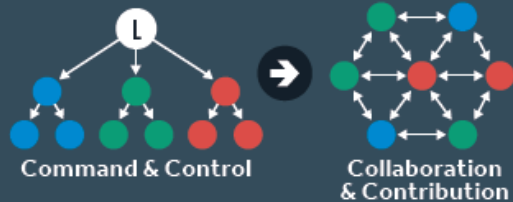


- |         |          |           |
|---------|----------|-----------|
| Oliver  | <b>1</b> | Charlotte |
| William | <b>2</b> | Olivia    |
| Jack    | <b>3</b> | Amelia    |
| Noah    | <b>4</b> | Ava       |
| Thomas  | <b>5</b> | Mia       |



**2,500,000** Gen Alphas born globally each week

## LEADERSHIP STYLES



## GEN Y PARENTS

**Age at first birth:**  
M 33.0 F 30.8

**Life expectancy:**  
M 80.1 F 84.3

**Age at first marriage:**  
M 29.9 F 28.3

**Total Fertility Rate:** **1.9**

## REDEFINED LIFESTAGES



## WORKFORCE OF 2025



*Kids In Parents Pockets Eroding Retirement Savings*

**BB 8%**   **X 28%**   **Y 33%**   **Z 31%**

## MEME OF THE YEAR

- Photo-bombing   Planking   Gangnam Style   The Fox   Icebucket Challenge   Blue & Black/White & Gold

## WORD OF THE YEAR

- App   Cloud   Hashtag   Selfie   YOLO

1997: Google.com domain registered

1998: Portable MP3 players

1999: USB flash drives

2000: Nokia 3310

2001: Wikipedia

2002: Myspace

2003: Skype

2004: YouTube

2005: Facebook opens to the public

2006: Twitter

2007: Dropbox

2008: Apple TV

2009: WhatsApp

2010: iPad

2011: Siri

2012: 1,000,000,000 1 billion active Facebook users

2013: GoPro HERO3

2014: 3D printers

2015: Google glass

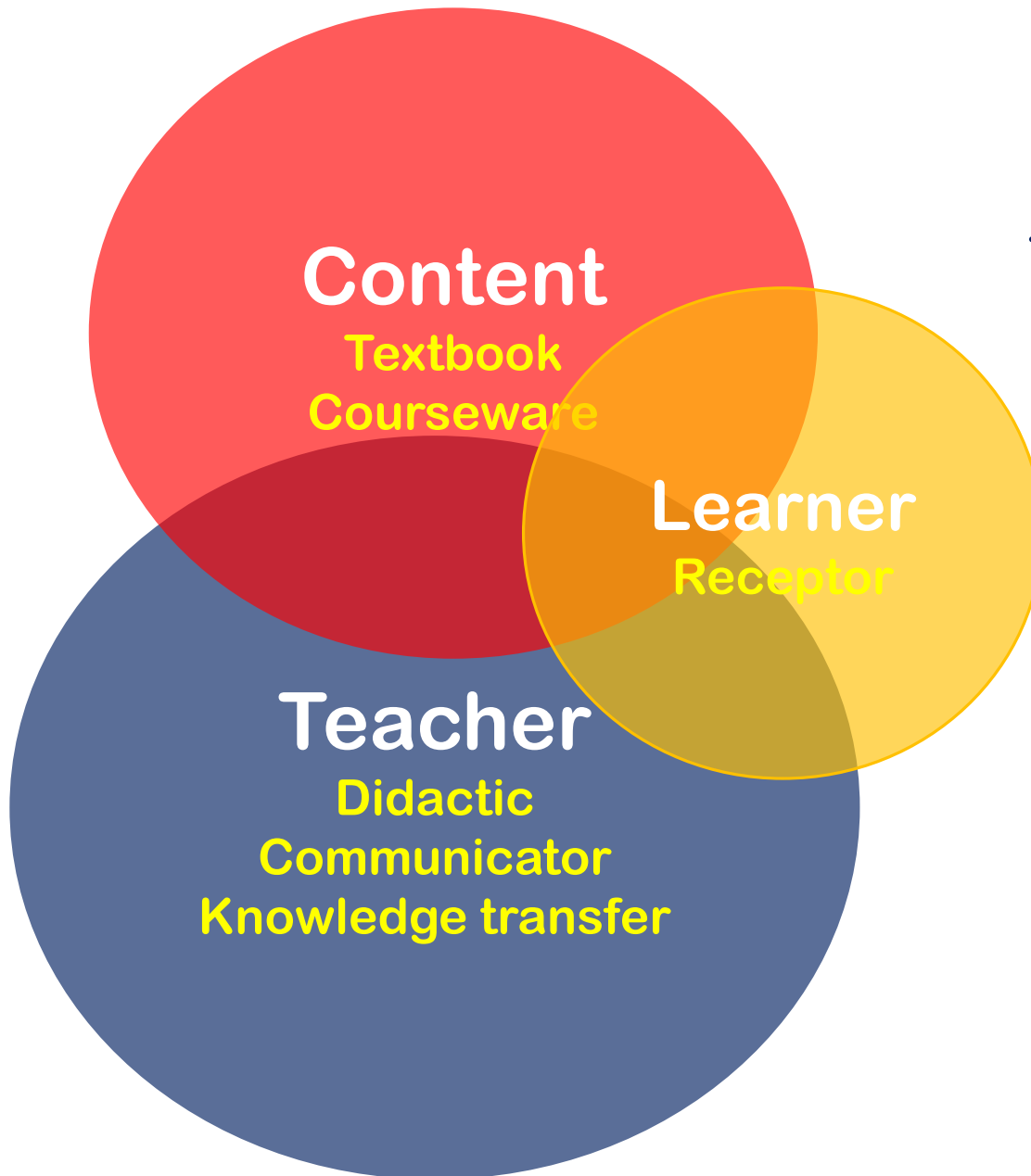
2016: Apple watch, Tesla Power Wall

**#2**

**New World of  
Everywhere Everyone  
Everything Technology**

# Current Mode

Content-based  
Teacher-centric



Education 1.0 Learners

- Receiving
- Responding
- Regurgitating



# Emerging Model

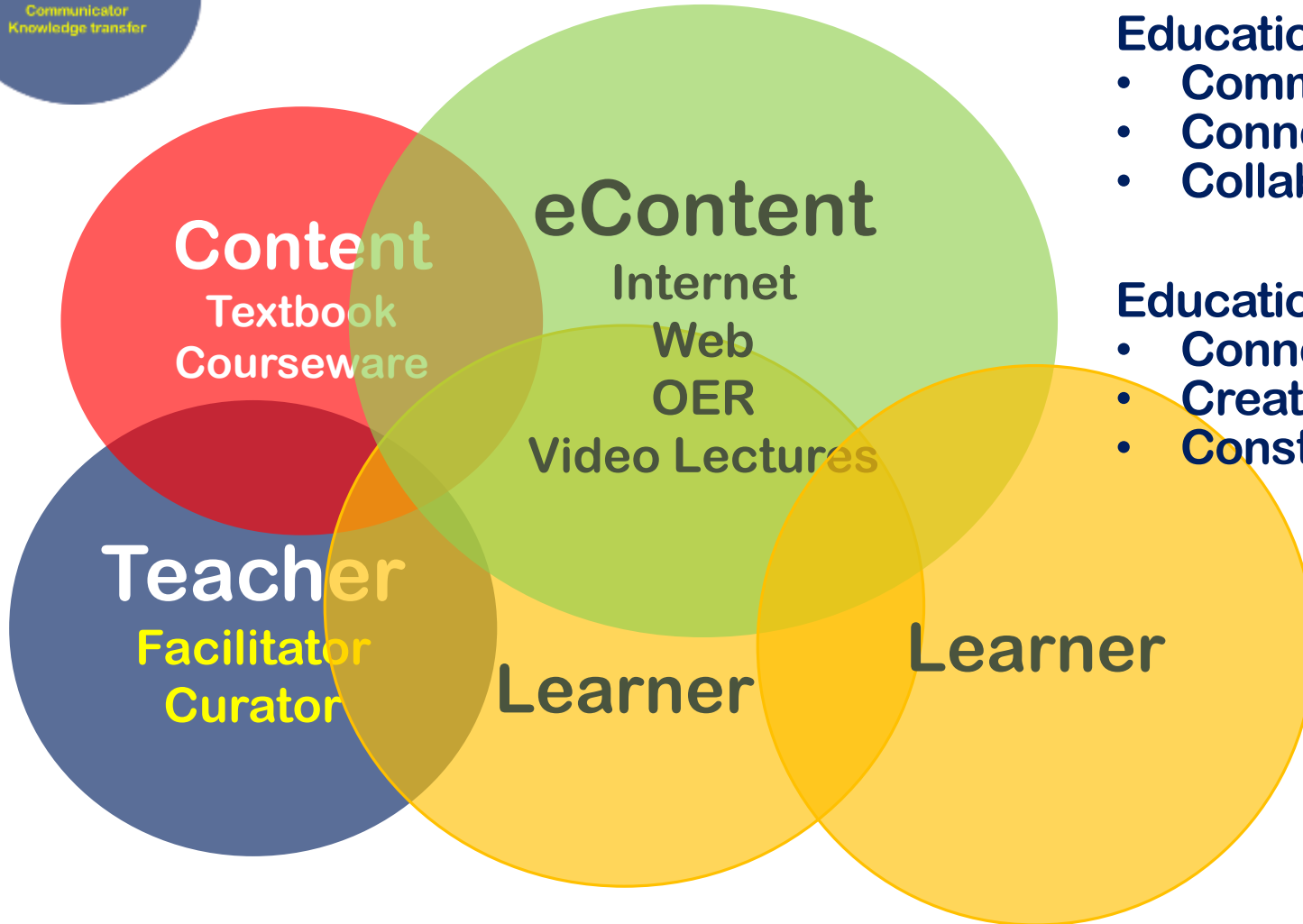
Learning-based  
Learner-centric

## Education 2.0 Learners

- Communicating
- Connecting
- Collaborating

## Education 3.0 Learners

- Connectors
- Creators
- Constructivists



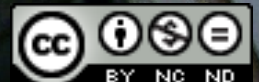


# 'New' learners are...

- more self-directed
- better equipped to capture information
- more reliant on feedback from peers
- more inclined to collaborate
- more oriented toward being their own  
“nodes of production”.

*Education Trends | Featured News*  
**John K. Waters**—13 December 2011

[http://coolshots.blogspot.com/2007\\_02\\_01\\_archive.html](http://coolshots.blogspot.com/2007_02_01_archive.html)



# #3

Change in Work Place  
Expectations &  
Disconnect of Employers  
and Graduates

# VUCA

## **VOLATILITY**

Equity, bond and currency market volatility; the lack of stability and predictability.

## **UNCERTAINTY**

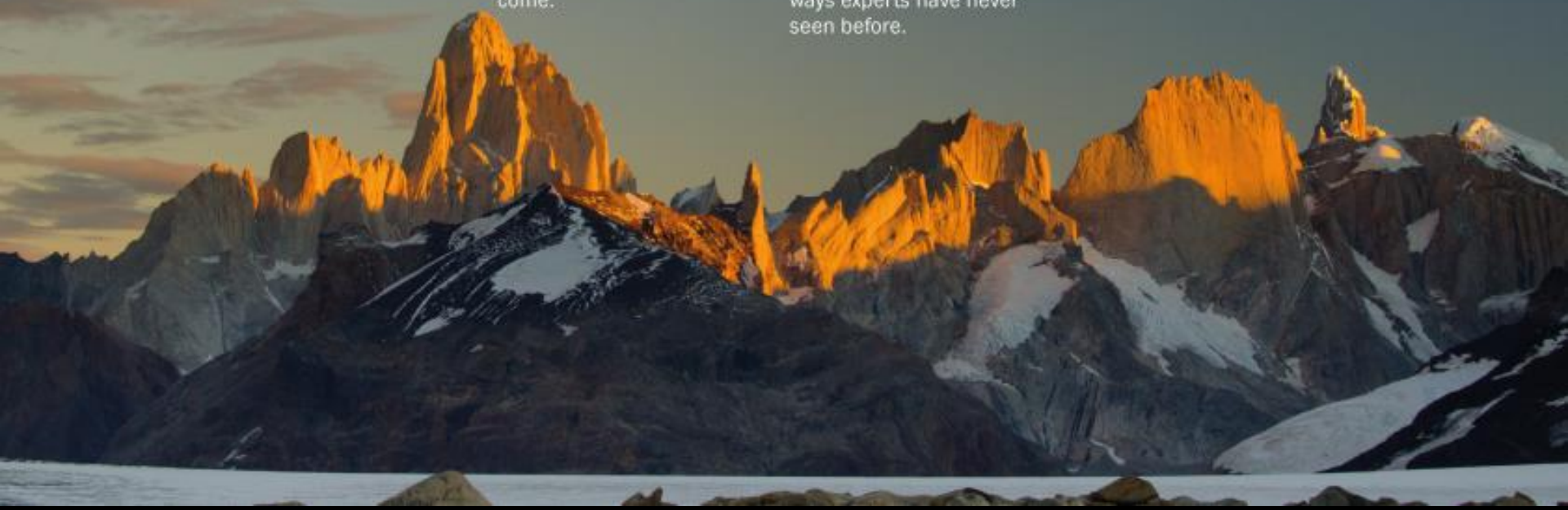
The potential change in the inflation index calculation, the potential switch to "smoothing" for pension funds calculating their recovery plan; the lack of ability to foresee what major changes might come.

## **COMPLEXITY**

In understanding these financial markets in the era of the "new normal". The proliferation and increasing complexity of new financial instruments and regulation to deal with increasingly complex markets, moving in ways experts have never seen before.

## **AMBIGUITY**

The resulting feeling. Is this the great rotation from bonds to equities? Or will bond yields stay low for longer? What is the best course of action?





# The First Mobile Phone



FreakingNews.com







Human Capital Institute  
The Global Association for Strategic  
Talent Management

Author: Jenna Filipkowski, PhD  
([Jenna.Filipkowski@HCI.org](mailto:Jenna.Filipkowski@HCI.org))  
Publication date: June 30, 2015 v.2

## Collaboration U: Business and University Partnerships To Secure Talent Pipelines

- Employers are struggling to find college graduates with the necessary skills for their jobs

Employers are encountering a "significant and constantly growing skills gap in today's workforce" and "there appears to be a **disconnect** between higher education institutions that are preparing the next generation of workers and the employers who expect to hire them."

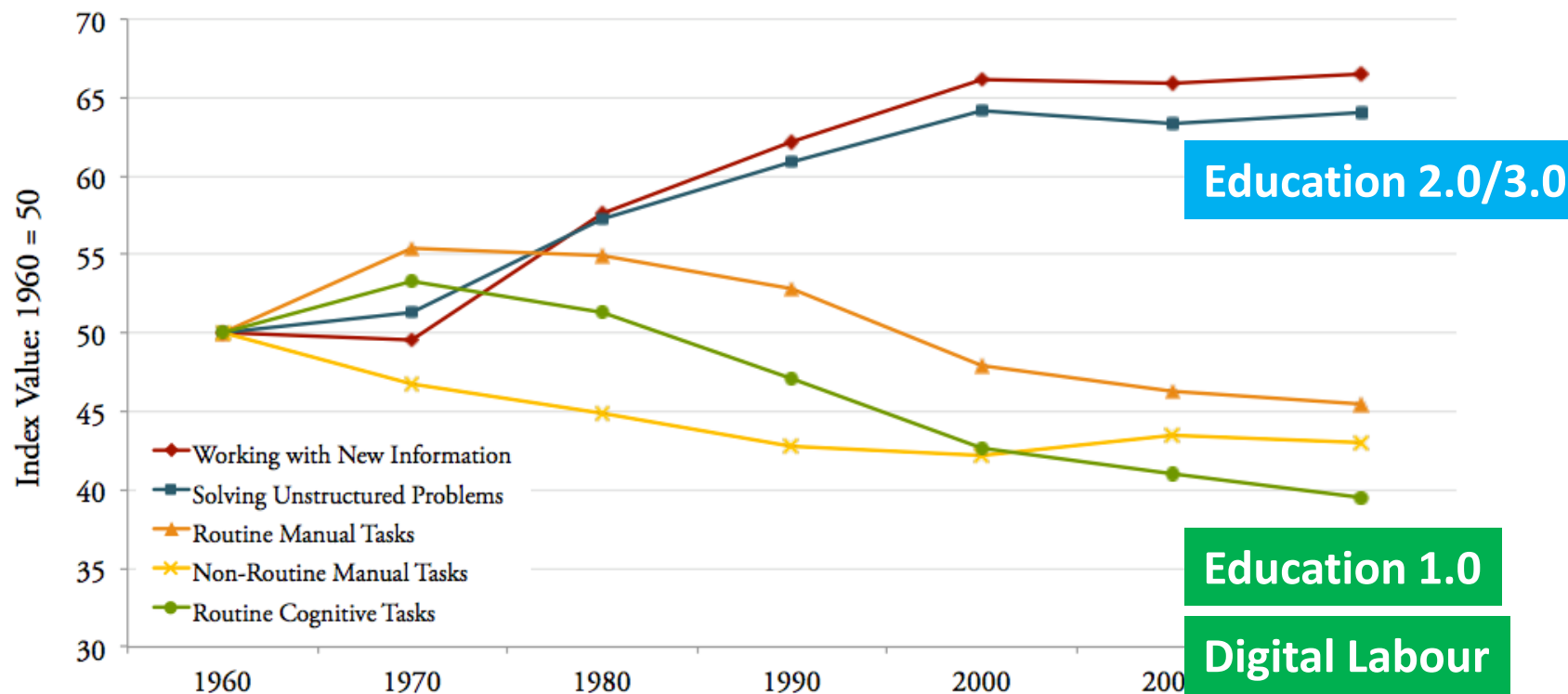
Source: Human Capital Institute (2015), Collaboration U: Business and University Partnerships To Secure Talent Pipelines.  
<http://www.hci.org/hr-research/collaboration-u-business-and-university-partnerships-secure-talent-pipelines>



# Training Network-Gen Students for Jobs Yet to be Invented

It's not the content but the pedagogical method

Figure 3: Index of Changing Work Tasks in the U.S. Economy 1960-2009<sup>21</sup>



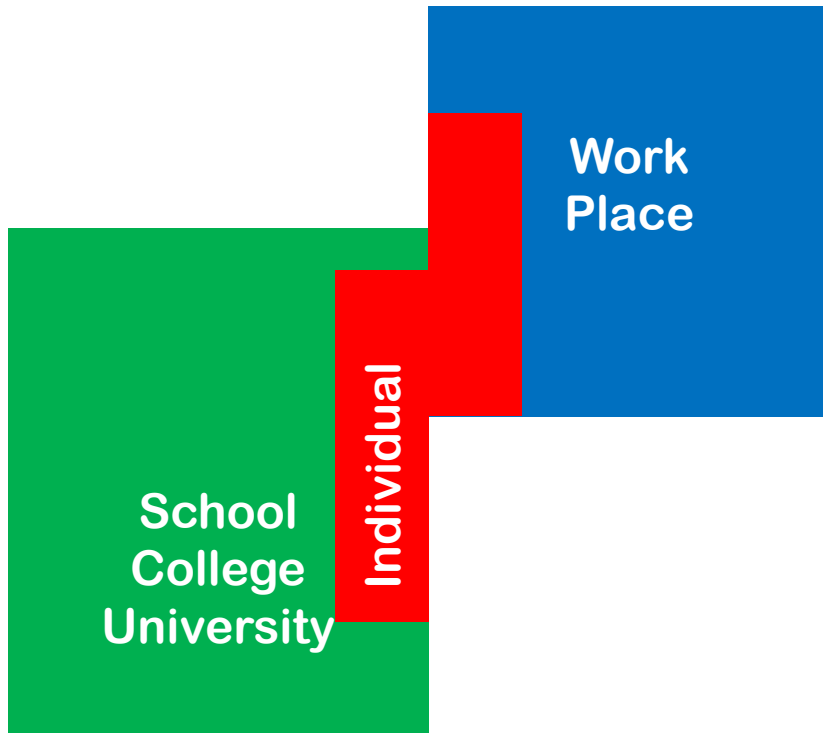
Education 2.0/3.0

Education 1.0

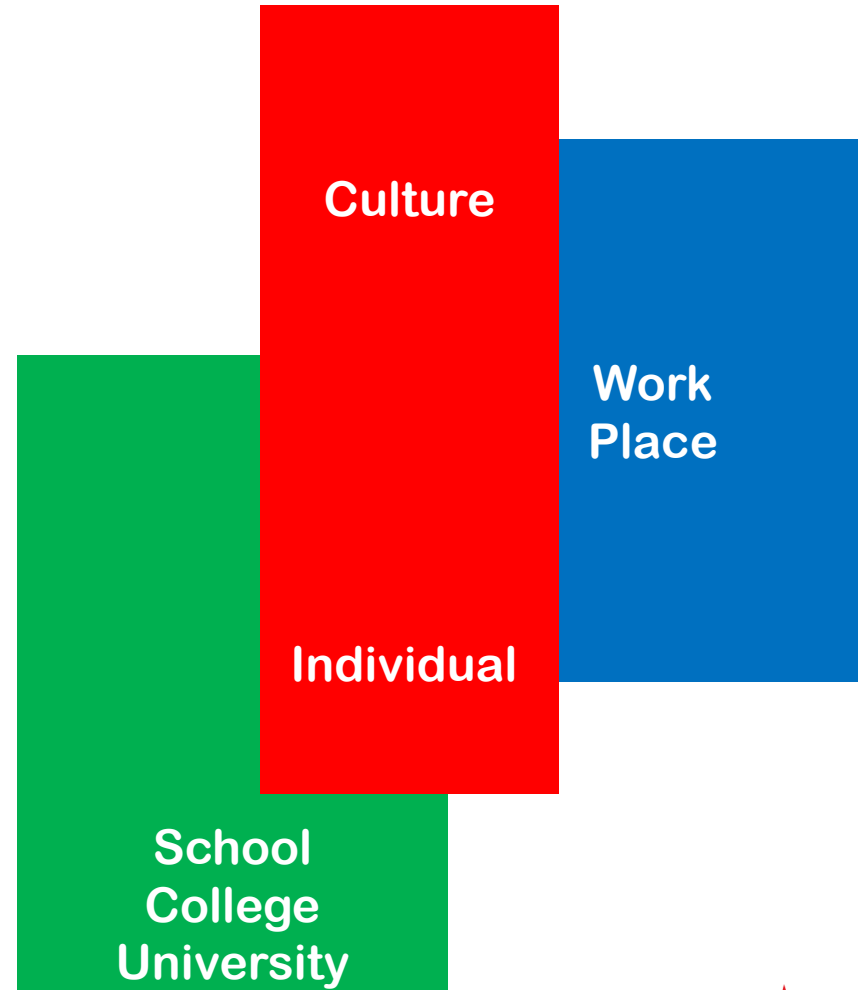
Digital Labour

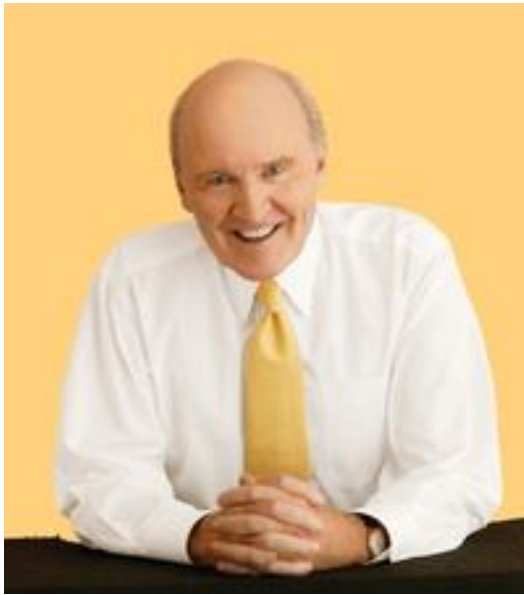


# Normal



# New Normal





Jack Welch

An organization's ability to learn, and translate that learning into action rapidly, is the **ultimate competitive**

If the rate of change on the outside exceeds the rate of change on the inside, the end is near.”







# Classical Work Organizations







# New Digital Organizations







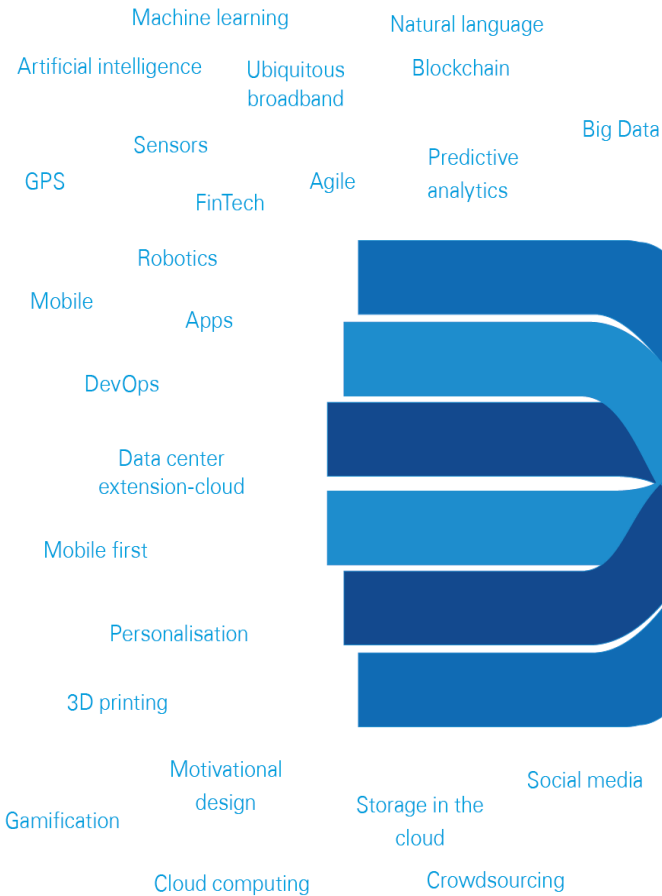
# Work-life Integration



# 4<sup>th</sup> Industrial Revolution

## Maturity of SMAC - social media, mobile, analytics & data, and cloud

### Third industrial revolution: Digital disruption



### Fourth industrial revolution: Disruptive capabilities

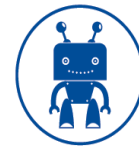
#### Innovation by harnessing the confluence of digital disruption for...



Autonomous vehicles



As a service computing



Cognitive automation



Digital currency



Tele-medicine



Smart cities







# The 10 Skills

You need to thrive In the Fourth Industrial Revolution

2015

- Complex Problem Solving
- Coordinating With Others
- People Management
- Critical Thinking
- Negotiation
- Quality Control
- Service Orientation
- Judgement & Decision Making
- Active Listening
- Creativity

[kpmg.com/fo](http://kpmg.com/fo)

#KPMGJordan

Source: @WEF

## The Future of Jobs

Employment, Skills and  
Workforce Strategy for the  
Fourth Industrial Revolution

January 2016



# August 21, 2016

## ST Future Economy Roundtable: Is Asia ready for the Fourth Industrial Revolution?

The Straits Times

<http://www.straitstimes.com/asia/is-asia-ready-for-the-fourth-industrial-revolution>



**“It's quite clear that the established models of education have to change and adapt to the new environment.”**



Source: Curt Bonk



# Challenge:

Workplace employers **expects** the new **employee** to be work ready!

**READY**



1. Complex Problem Solving
2. Critical Thinking
3. Creativity
4. People Management
5. Coordinating with Others
6. Emotional Intelligence
7. Judgment and Decision Making
8. Service Orientation
9. Negotiation
10. Cognitive Flexibility



# Response: Holistic Education Approach

Life Long

Academic  
Excellence

Blended  
Learning

Life Skills

Life wide

Academic  
Excellence

21CC

Life Skills

Mid 1990's

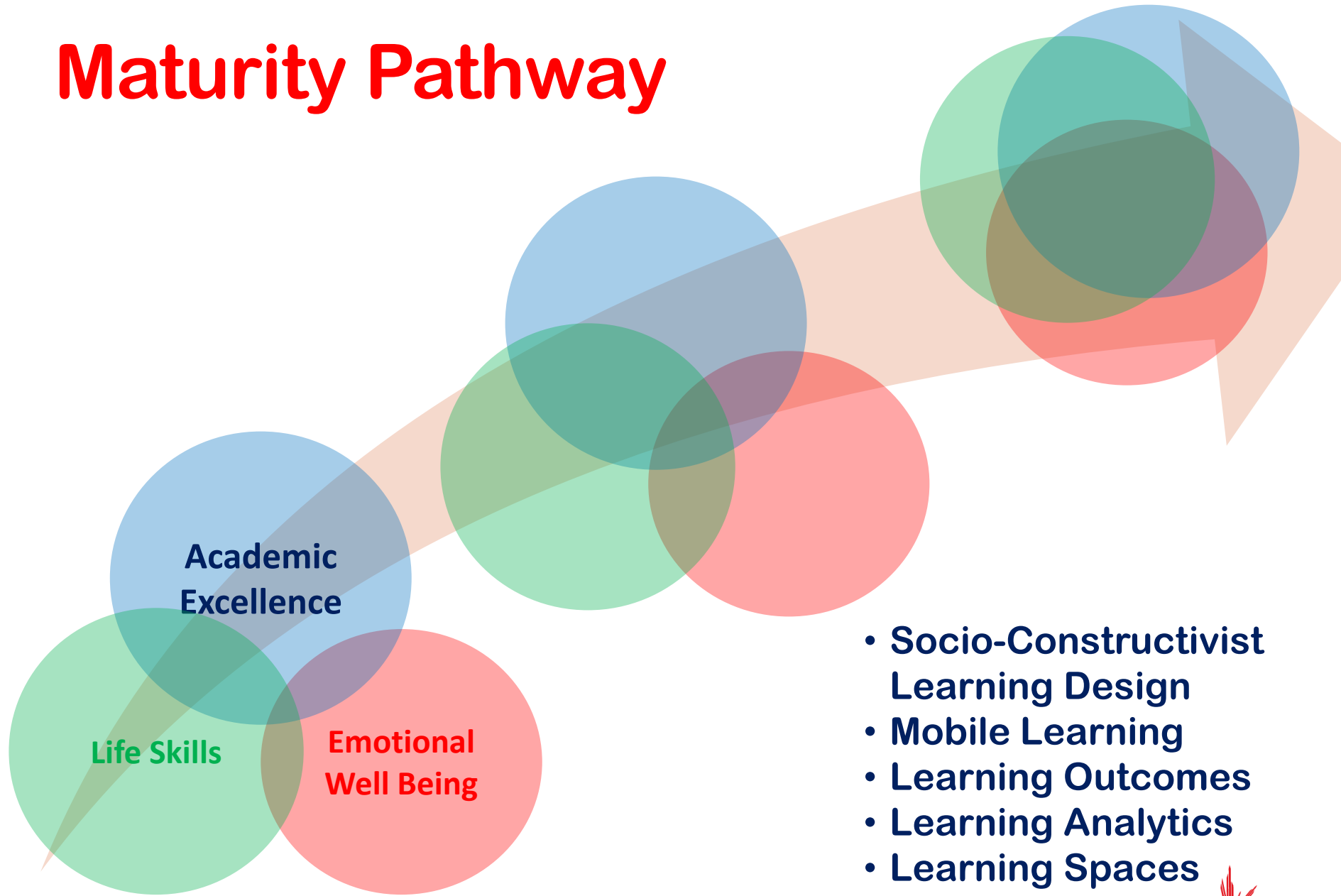
Life Deep

Emotional  
Well Being

- **Mindfulness**: character, behaviors, attitudes, trust, values
- **Performance**: adaptability, persistence, resilience, etc.
- **Moral**: integrity, justice, empathy, ethics, authenticity, etc.



# Maturity Pathway



**Meta-Learning:  
Learn, reLearn, unLearn**

**Academic  
Excellence**

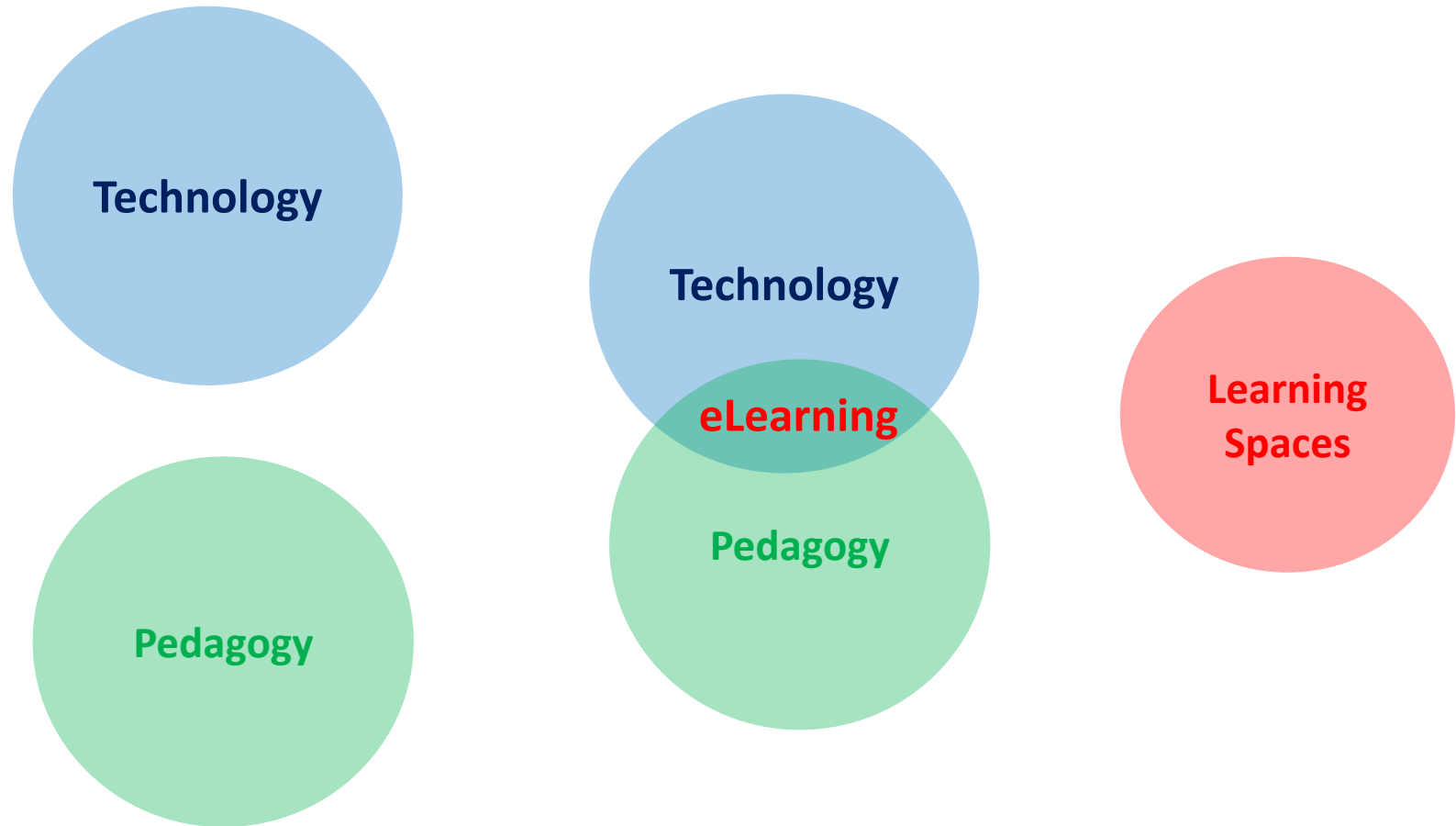
**Life Skills**

**Emotional Well  
Being**

- Learning how to learn: reflection, expertise, curiosity, creativity, contextualization, self-critique
- Passion
- Growth mindset



# Response to Implementation





Technology

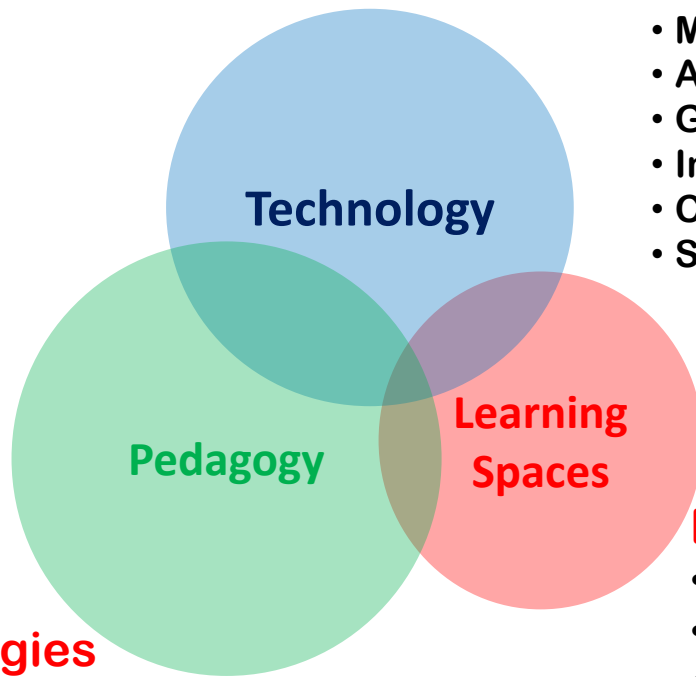
Pedagogy

Learning  
Spaces

- Learning Design
- Student Experience
- Learning Outcomes
- Social Constructivist Learning







## Fast evolution

- From Web 1.0 to Web 2.0
- Shadow IT & BYOD Mobility
- Mobile Learning
- Analytics
- Gamification
- Information (Big Data)
- Cloud
- Social Media



## Form supports function

- Formal & informal spaces
- Physical & visual spaces
- Didactic vs collaborative & facilitative
- Individual vs group & peer support
- Sage vs guide



## New Pedagogies

- From instructivist teacher/content-centric
- To constructivist learner/co-creator
- To social-constructivist learning
- Education 3.0
- Learning Design



# Socio-Constructivist-Connectivist Learning Framework

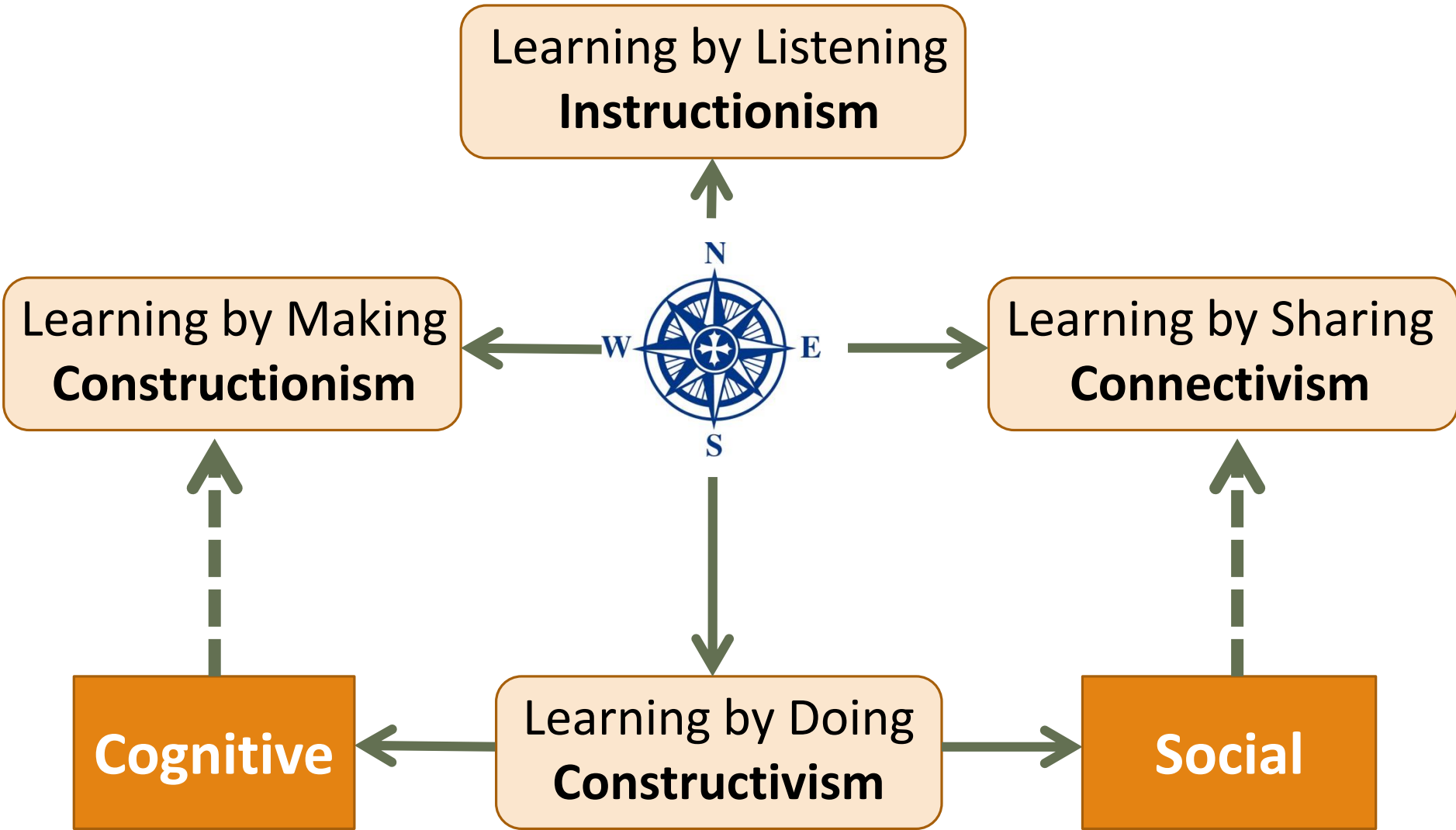
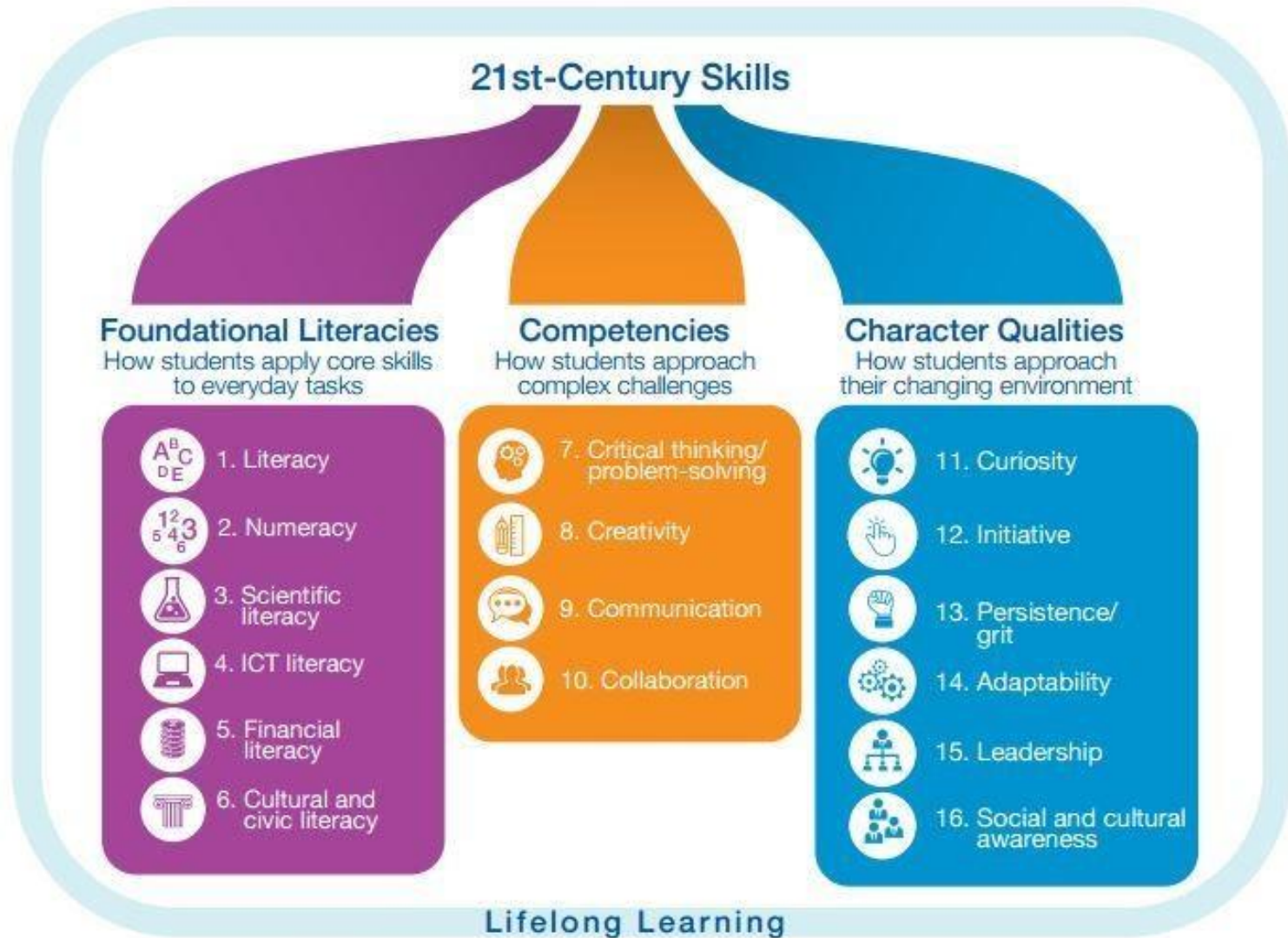


Exhibit 1: Students require 16 skills for the 21st century



Note: ICT stands for information and communications technology.



# Our Response

The **WHAT**  
to do next is easy  
when you know  
the **WHY**



# Case Example 2: Learning Spaces

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**Face-to-face**



# Philosophy of Next Gen Learning Spaces

- Noisy Classroom
- Wandering Professor
- Campus wide pedagogical culture
- Faculty friendly + Faculty Development
- Recognition – Student Teaching Feedback redesign

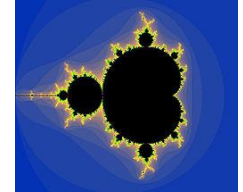


Photo: NTU



2011

2012



# Traditional Classroom Design



1986 - Pre-2011



# TR+: Professor-friendly Learning Space @ NTU



Post-2011

Windows 7 Enterprise

SAMSUNG

LOCAL

BROADCAST

Local

Broadcast



# Learning Spaces at Taylor's Lakeside Campus: X-Space Collaborative Classroom



# Early version of Faculty Training Room (2002)





# Learning Studio

## for Faculty Development & Technology Test-bed



2011



Teaching Assistants Programme  
email: TAP@ntu.edu.sg

- ✓ SHUT DOWN laptop and main switch after use
- ✓ CLEAR "your unwanted papers" when leaving



# Professional & Faculty Development Programme (2012)

Months	Planned Courses	Conducted Courses	Participants		
			NTU/NIE	External	Total
Jan	22	16	191	0	191
Feb	41	39	269	4	273
March	47	41	382	35	417
April	33	30	265	43	308
May	22	20	190	5	195
June	19	19	178	361	539
July	34	29	364	3	367
Aug	51	46	530	8	538
Sept	40	37	317	11	328
Oct	31	26	787	31	818
Nov	43	36	351	10	361
Dec	16	14	136	1	137
<b>Grand Total</b>	<b>399</b>	<b>353</b>	<b>3960</b>	<b>512</b>	<b>4472</b>





USB 1    USB 2  
 USB 3    USB 4  
 P2/P31  
 CONSOLE TABLE  
 FRONT  
 REAR  
 CLASS-L3-5.4

Audio power switch

LHS-TR-54  
 Remember to Shut Down AV system after use  
 Select any source followed by select Broadcast / Projector  
 Select Teaching Console Source  
 Select any ICON for projection  
 Remember to shutdown AV system after lecture  
 Back to student group screen  
 Extron  
 5

LHS-02-08 TR+ 54

Project the Presentation signal by pressing F1V and one of the F1-F12 key together according to the following instructions

Instruction	Keypress
Headlink Broadcast	FN F3
General	FN F3
AV/AV	FN F4
Front/Back	FN F5
Headlink	FN F6
Headlink	FN F7
Headlink	FN F8
Headlink	FN F9
Headlink	FN F10
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Headlink	FN F100

by NDL/14/03/2015

Operation Procedures in South Sains Learning Hub Tutorial Room (L3)

Select START ICON at touch panel for begin

**Start of Lecture / Session**

**Select touch panel**

Turn on the PC  
 Log on to the PC by using the username L3-TR-54 or your staff/student account  
 All start up software will be loaded in 30 seconds to start the projector and all TV displays  
 For the control tray at teaching console to control the respective displays in class room  
 Select Broadcast from **Teaching Console** to start the projector and all TV displays  
 Select Broadcast from **Teaching Console** to start the projector and all TV displays  
 Select Broadcast from **Teaching Console** to start the projector and all TV displays

**End of Lecture / Session**

Select Stop Screen Audio / Video system icon  
 To switch OFF LCD screens Press power button icon  
 Select Stop Screen Audio / Video system icon  
 To switch OFF LCD screens Press power button icon  
 Select Stop Screen Audio / Video system icon

**Select touch panel**

Select Broadcast icon **Teaching Console** (To Projector ONLY)  
 On select Projector icon **Teaching Console** (To Projector ONLY)  
 Select Broadcast icon **Teaching Console** (To Projector ONLY)  
 On select Projector icon **Teaching Console** (To Projector ONLY)

**End of Lecture / Session**

To switch OFF LCD screens Press power button icon  
 Select Stop Screen Audio / Video system icon

**Sound playback**

Sound send to ceiling speakers  
 Select any Student Group Display number(s) icon **Teaching Console** (To any TV)  
 Select any Student Group Display number(s) icon **Teaching Console** (To any TV)

**End of Lecture / Session**

To switch OFF LCD screens Press power button icon  
 Select Stop Screen Audio / Video system icon

**Audio power switch**


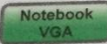
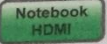
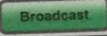
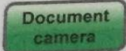
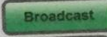






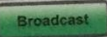
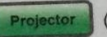


Switch OFF  
 Switch ON  
 Send Source from teaching console to appropriate source and set to Projector icon  
 To turn ON projector and all TV displays at Standby mode / No image


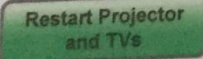
**Help Line**  
 Call 404 4740 6444 for AV assistance  
 Call 404 4740 6444 for AV assistance  
 Call 404 4740 6444 for AV assistance

**Note:** If projector does not have image after select Broadcast / Projector and Stop Audio and Broadcast icon, select emergency projector (PCA) mode icon

**Operation Procedures in South Spine Learning Hub Tutorial Room (TR)**

Select START ICON at touch panel to begin

Select touch panel	(Lecture Mode) Action send to TV displays and projector	End of Lecture / Session
	<ul style="list-style-type: none"> <li>- Turn on the PC.</li> <li>- Log in to the PC by using the common LT PCs ID or your staff/Student account</li> <li>- At start up (default) PC source is send to projector and all TV displays.</li> </ul>	Select Shut down Audio / Video system Icon
 OR 	<ul style="list-style-type: none"> <li>- Flip the cover tray at teaching console to access the notebook (VGA) or (HDMI) cable audio/network cable and connect the respective cables to user Notebook connector.</li> <li>- Select Broadcast Icon.  (To All TV displays and projector)</li> </ul>	Select Shut down Audio / Video system Icon
	<ul style="list-style-type: none"> <li>- Switch on the Document camera by pressing the power button once.</li> <li>- Select Broadcast Icon.  (To All TV displays and projector)</li> <li>- OR select Projector Icon.  (To Projector ONLY)</li> </ul>	To switch OFF DOC camera Press power button twice Select Shut down Audio / Video system Icon
Select touch panel	(Interactive Mode) Action send to TV displays and projector	End of Lecture / Session
Source from teaching console     Source from student table number(x) Icon 	<ul style="list-style-type: none"> <li>- Select Broadcast Icon.  (To All TV displays and projector)</li> <li>- Select Projector Icon.  (To Projector ONLY)</li> <li>- Select any Student Group Display number(x) Icon.  (To any TV display)</li> </ul>	To switch OFF DOC camera Press power button Twice Select Shut down Audio / Video system Icon
Audio power switch 	(Sound playback) Sound send to ceiling speakers	End of Lecture / Session
Switch ON	Select source from teaching console or student table and send to Projector Icon	Switch OFF Audio power switch
Switch ON	Adjust volume UP, DOWN or MUTE	Switch OFF Audio power switch

-  - Switch all student table source to their respective TV displays
-  - To turn ON projector and all TV displays at Standby mode ( No image )

**Help Line**  
Call NSS 6790 5343 for AV assistance  
OR email to servicedesk@ntu.edu.sg

Note: If projector does not have image after select Restart Projector and TVs Icon and Broadcast Icon, select emergency projector (VGA input) Icon





PHOTO CREDIT: HUFTON AND CROW

















GROUP 1

GROUP 2

00:18:10

00:18:10

00:18:10

00:18:10

00:18:10

00:18:10

00:18:10





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Everywhere  
with Everybody!**

**we-Learning**

What kind of the university do you want?

Good universities

teach

Great universities

transform

Thank You!

**Dr Daniel Tan**

Group Chief Learning Officer

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