Insights on Blended Learning: (Inputs from TPACK for STEAM Ed)

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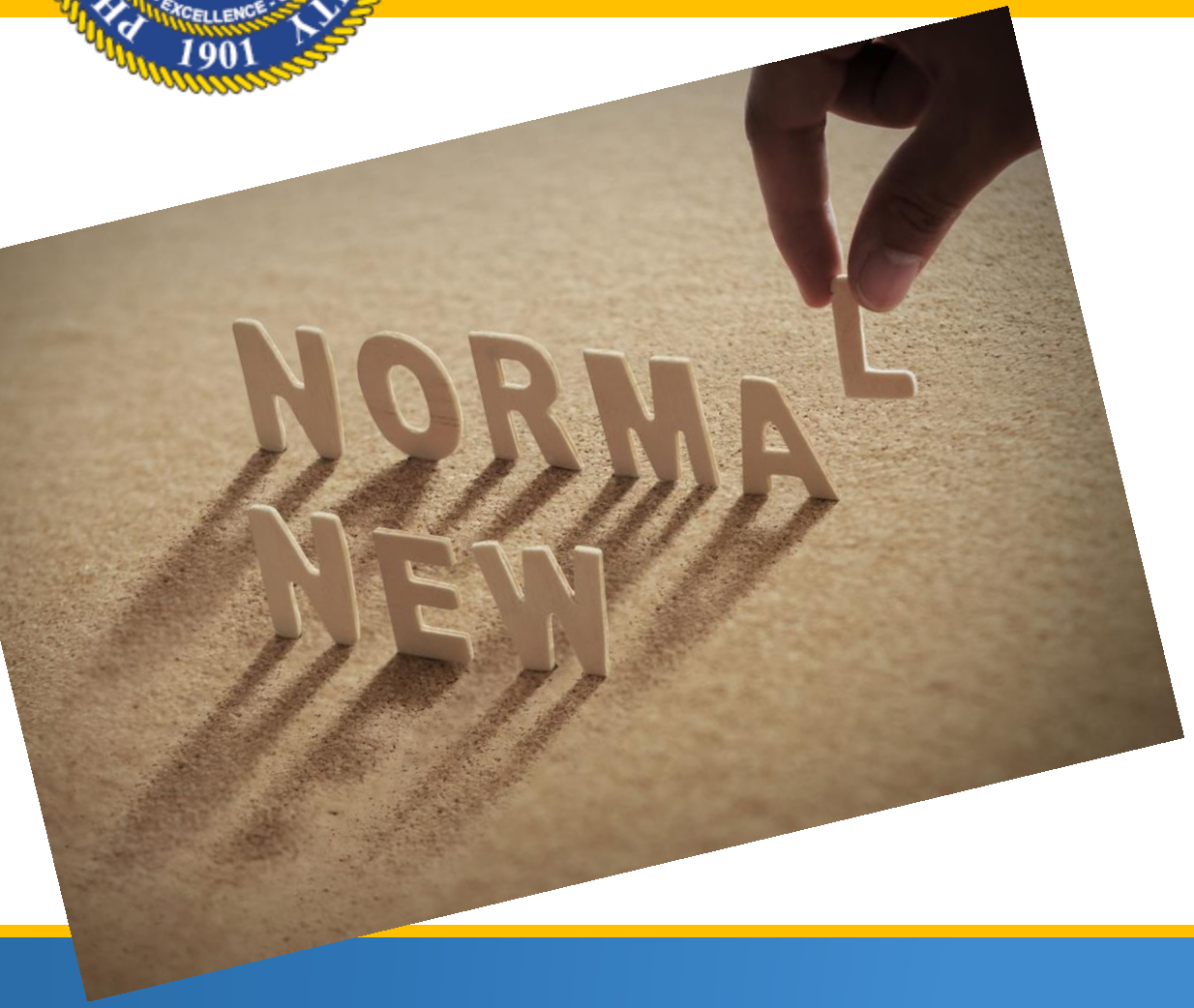
Menu for today…

- Some ideas on BL
- A little data in HE
- STEAM Education
- Non-prescriptive setting
- 3P's

What's the BUZZ?

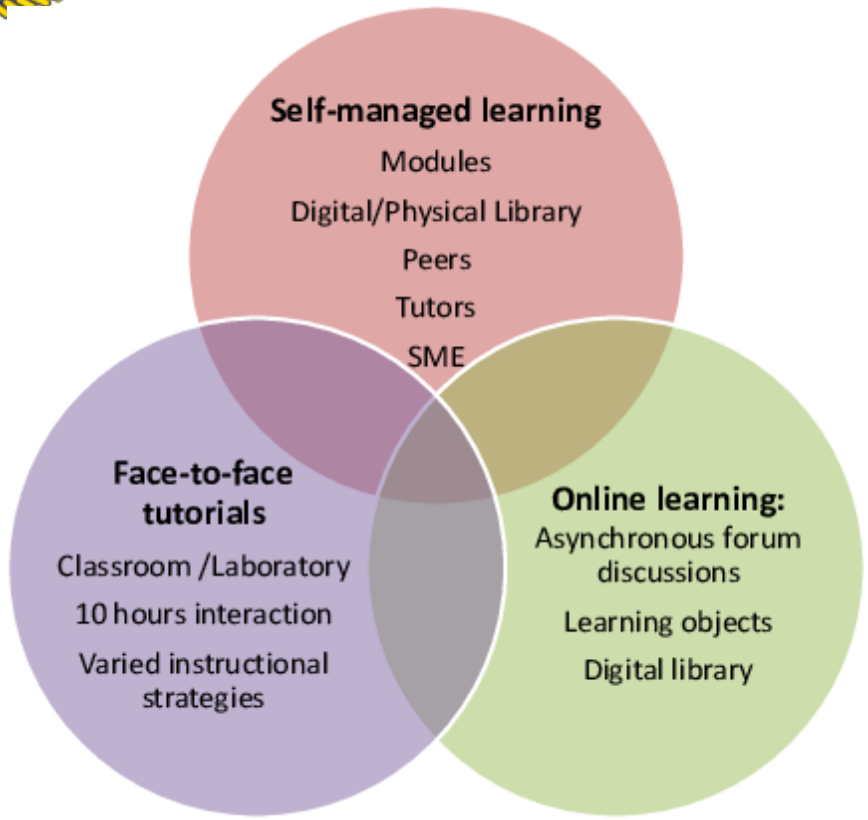


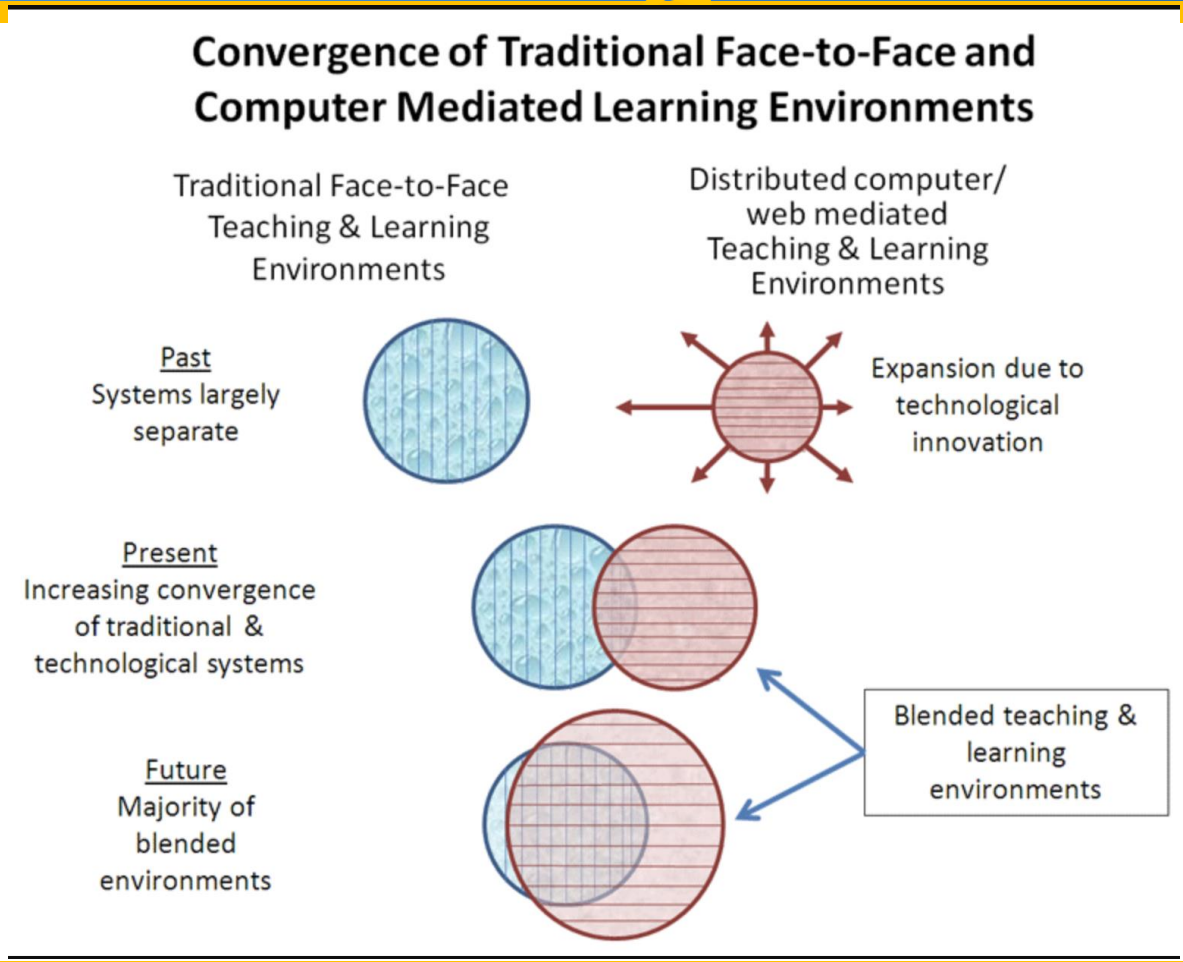
- No/Limited F2F
- Webinars
- Online Learning
- Zoom
- Google meet
- Blended Learning
- YouTube tutorials

What's Blended Learning?

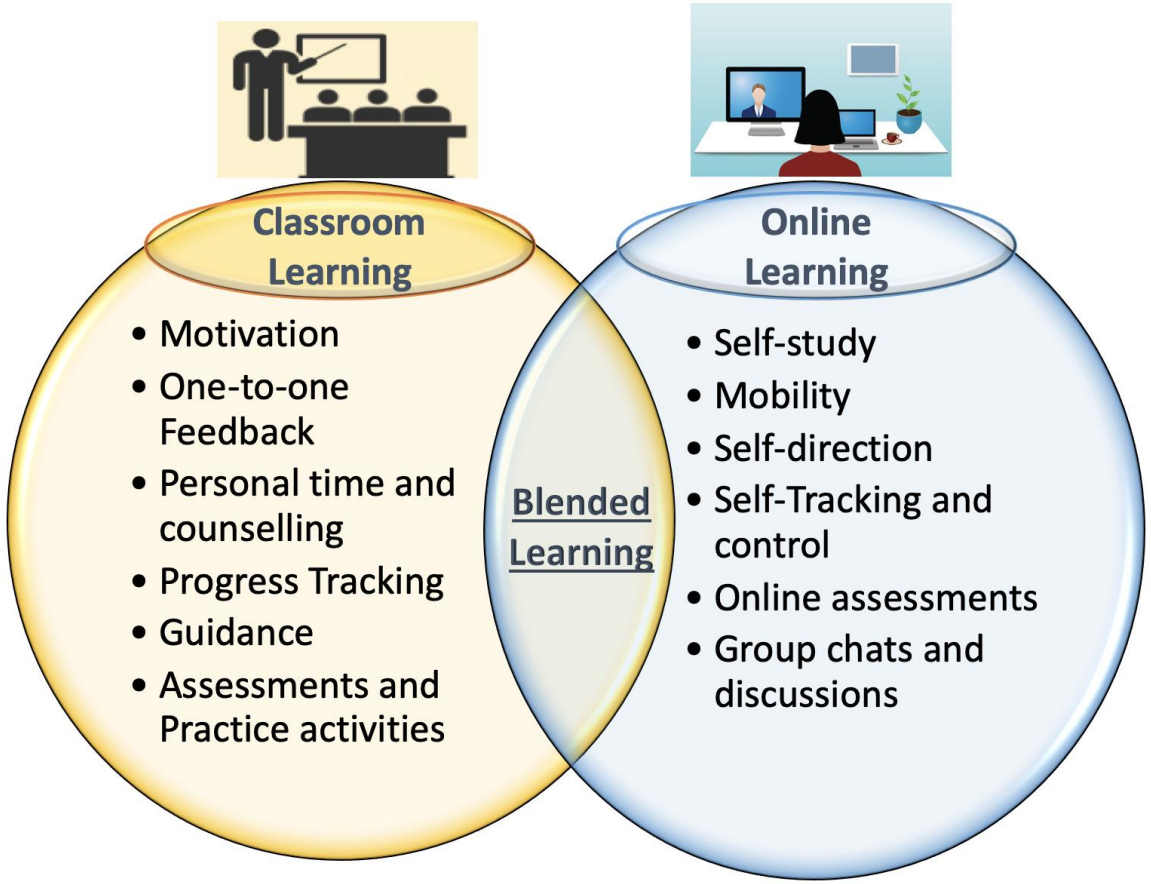
- Combining instructional modalities (or delivery media) *(Bersin & Associates, 2003; Orey, 2002a, 2002b; Singh & Reed, 2001; Thomson, 2002)*
- Combining instructional methods *(Driscoll, 2002; House, 2002; Rossett, 2002)*
- Combining online and face-to-face instruction *(Reay, 2001; Rooney, 2003; Sands, 2002; Ward & LaBranche, 2003; Young, 2002)*

What's Blended Learning?





Why Blend?


Classroom Learning
• Motivation
• One-to-one Feedback
• Personal time and counselling
• Progress Tracking
• Guidance
• Assessments and Practice activities
Blended Learning
Online Learning
• Self-study
• Mobility
• Self-direction
• Self-Tracking and control
• Online assessments
• Group chats and discussions

Why Blend?

The Why...

- For improved pedagogy
- Increased access and flexibility
- Cost efficiency

The How...

- Activity level
- Course level
- Program level
- Institutional Level

Gen Z's (1996-2010)...

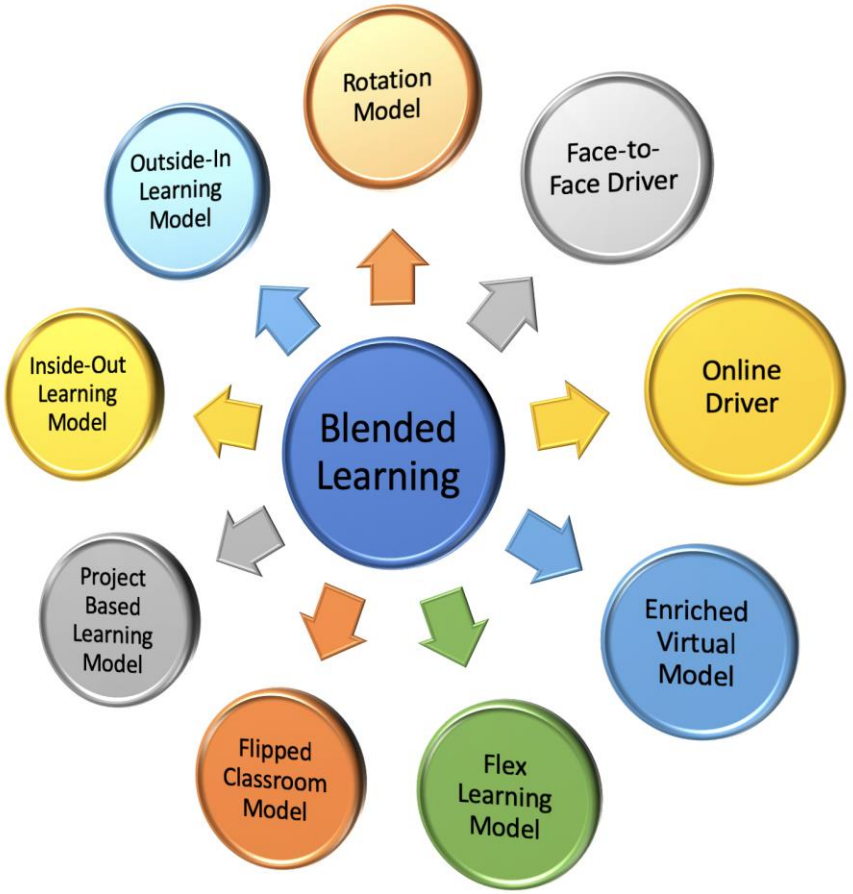
- Technologically advanced
- Have never seen the world without the internet
- Absorb tons of new information every day.
- Independent, self confident and autonomous
- Visual learners
- Accused of short attention span, actually has an **8-Second Filter**
- Environmentally aware
- They multitasking

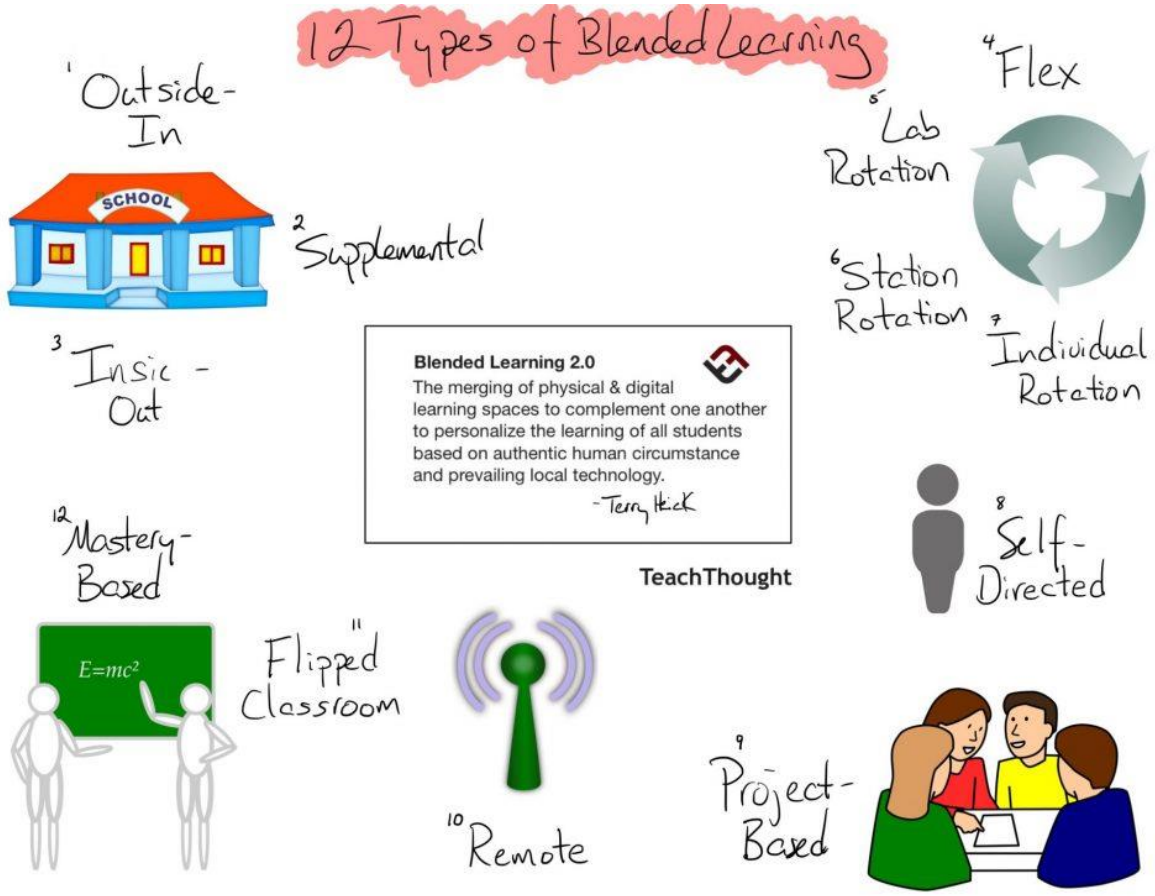
The Alpha's (beyond 2010)...

- The children of Gen X & Y
- Igen, Gen glass
- Ipads were there first babysitters
- They are intuitively and the natural digitals

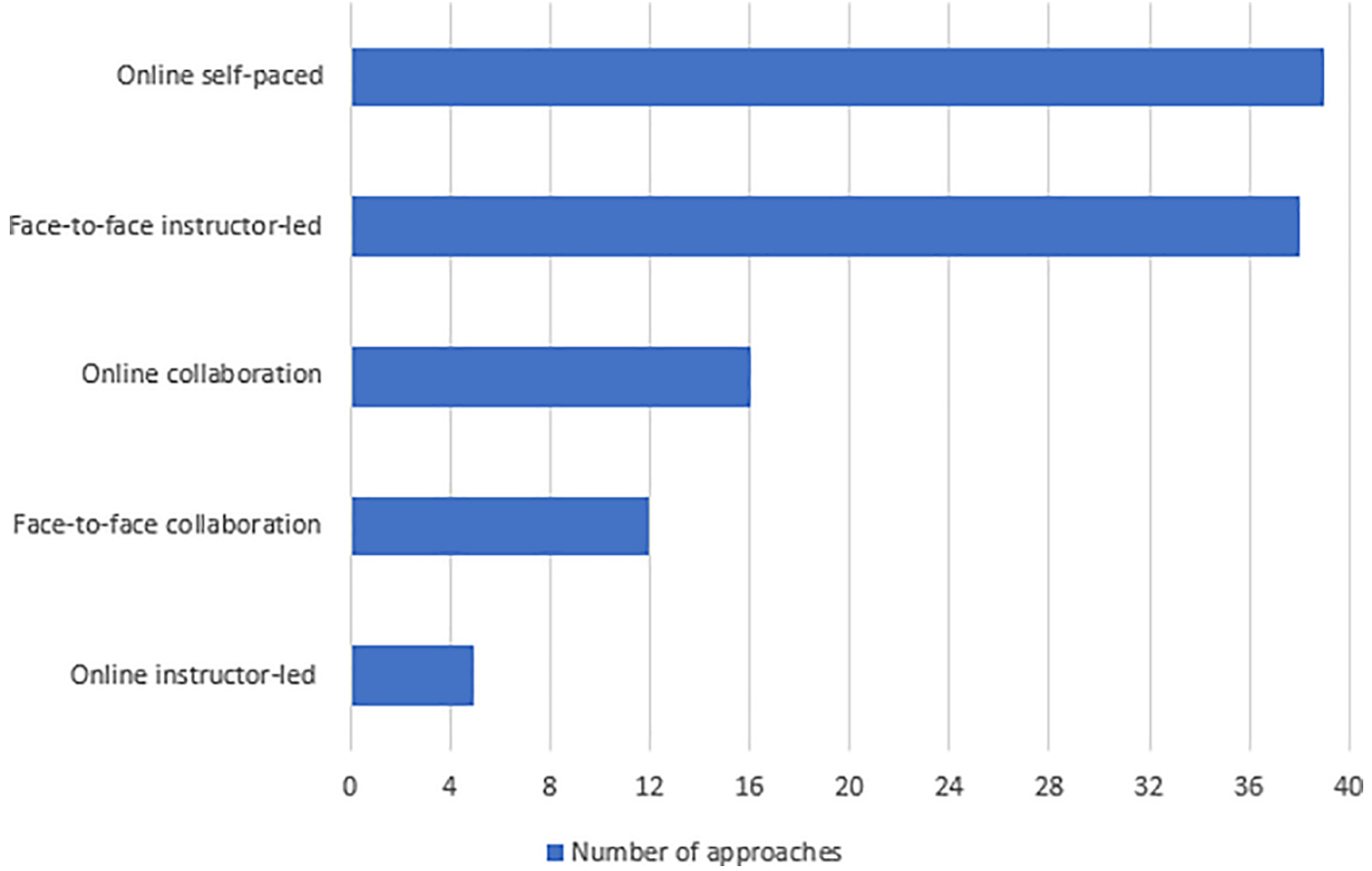
- They use voice commands in gadgets.
- They learn by trail and error.
- They are drawn to interactive media or apps that make them decide or have choices about the direction of a game, the manipulation of a character, figure, or setting, and apps that let them create movies and music
- They display a strong desire for instant gratification.

The types...


Blended Learning
Rotation Model
Face-to-Face Driver
Online Driver
Enriched Virtual Model
Flex Learning Model
Flipped Classroom Model
Project Based Learning Model
Inside-Out Learning Model
Outside-In Learning Model

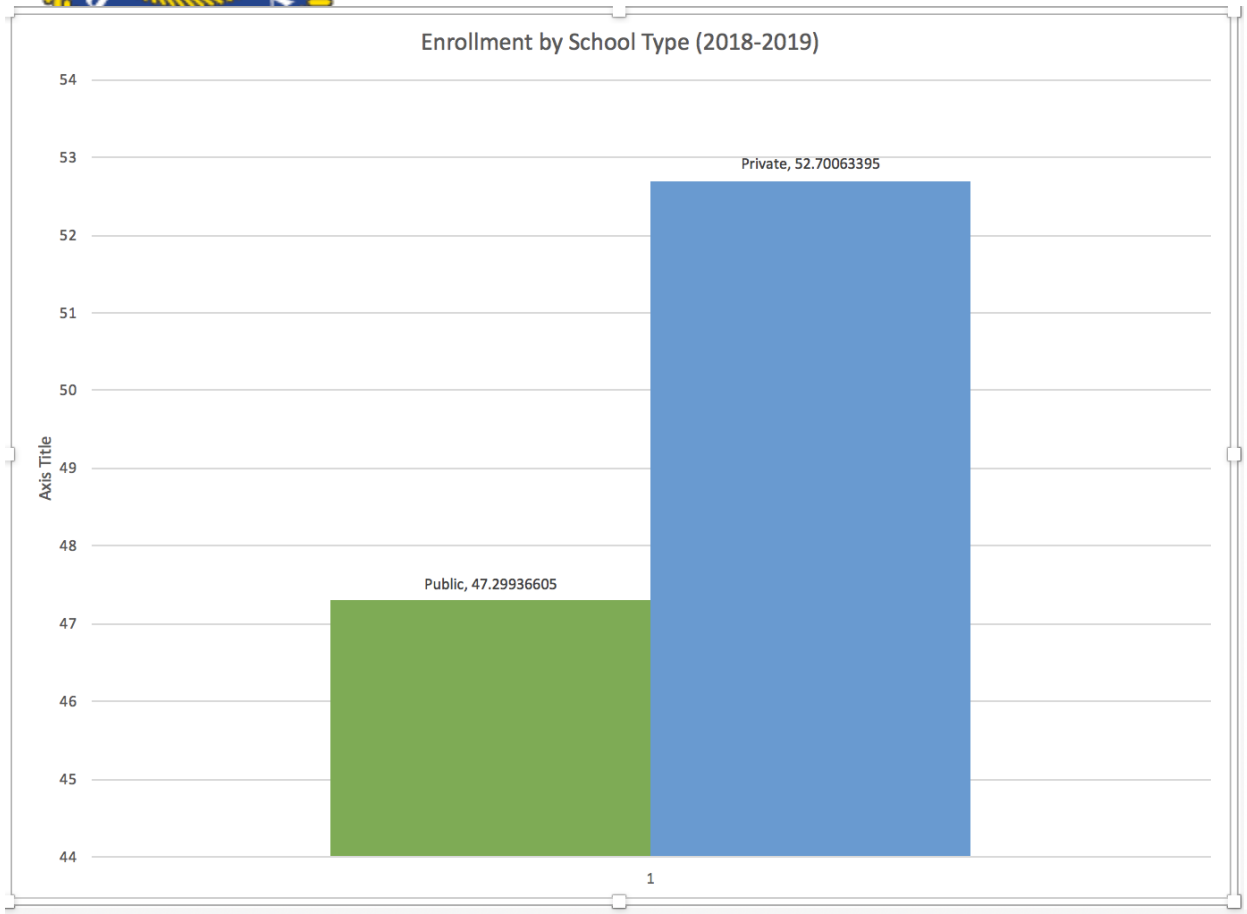

12 Types of Blended Learning
1 Outside-In
2 Supplemental
3 Insic - Out
4 Flex
5 Lab Rotation
6 Station Rotation
7 Individual Rotation
8 Self-Directed
9 Project-Based
10 Remote
11 Flipped Classroom
12 Mastery-Based
SCHOOL
E=mc²
Blended Learning 2.0
The merging of physical & digital learning spaces to complement one another to personalize the learning of all students based on authentic human circumstance and prevailing local technology.
-Terry Heick
TeachThought

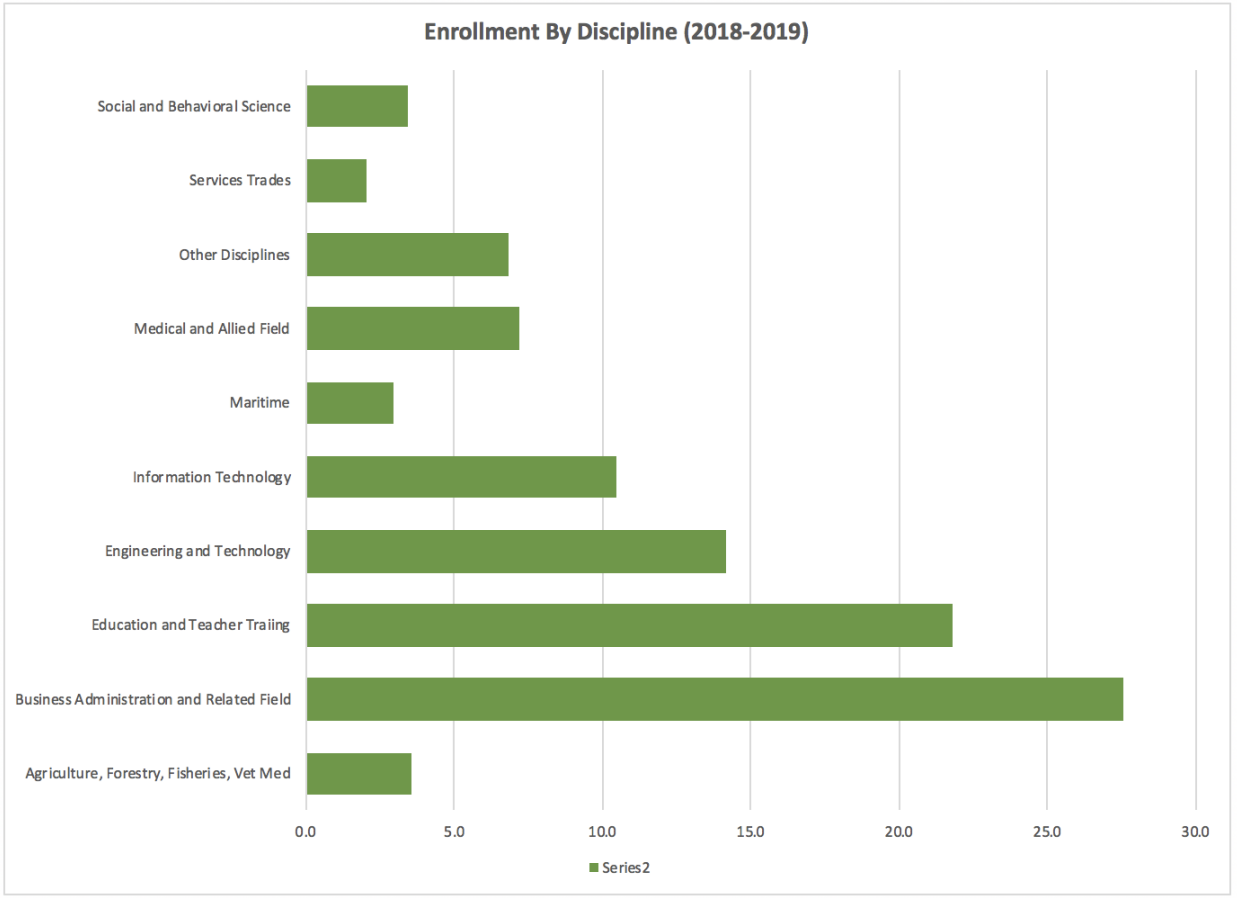
A Systematic Review



Alammary A (2019) Blended learning models for introductory programming courses: A systematic review. PLoS ONE 14(9): e0221765. https://doi.org/10.1371/journal.pone.0221765

Which is which?





[CHED] Commission on Higher Education. 2019. 2019 Higher Education Facts and Figures.

CHED Data

Number of HEIs	
SUCs	541
LUCs	118
Private	1721
Others	13
TOTAL	2,393

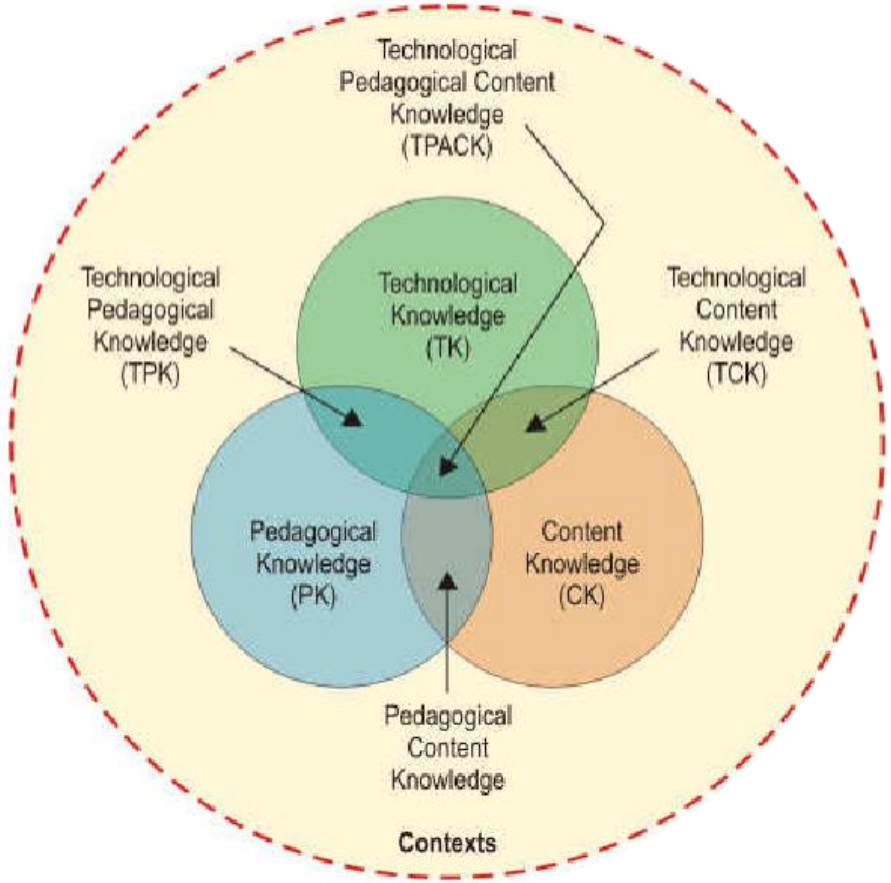
Faculty-Student Ratio	
Private	1:22
Public	1:25

[CHED] Commission on Higher Education. 2019. 2019 Higher Education Facts and Figures.

CHED Data

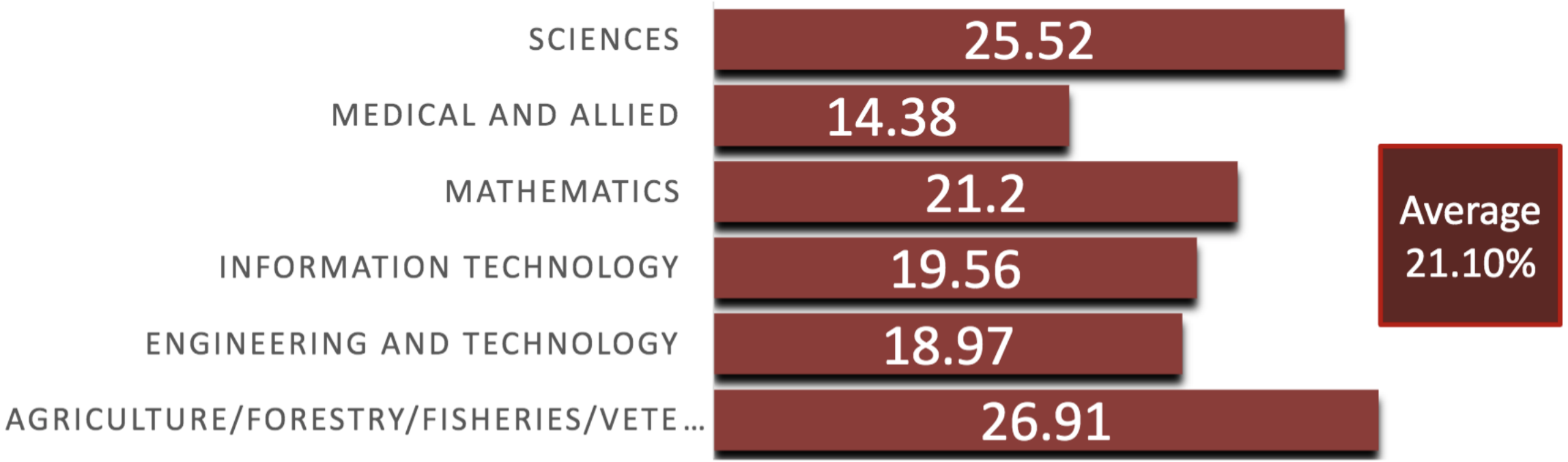
TPACK Framework

- TK, PK, CK
- TPK, TCK, PCK
- TPCK



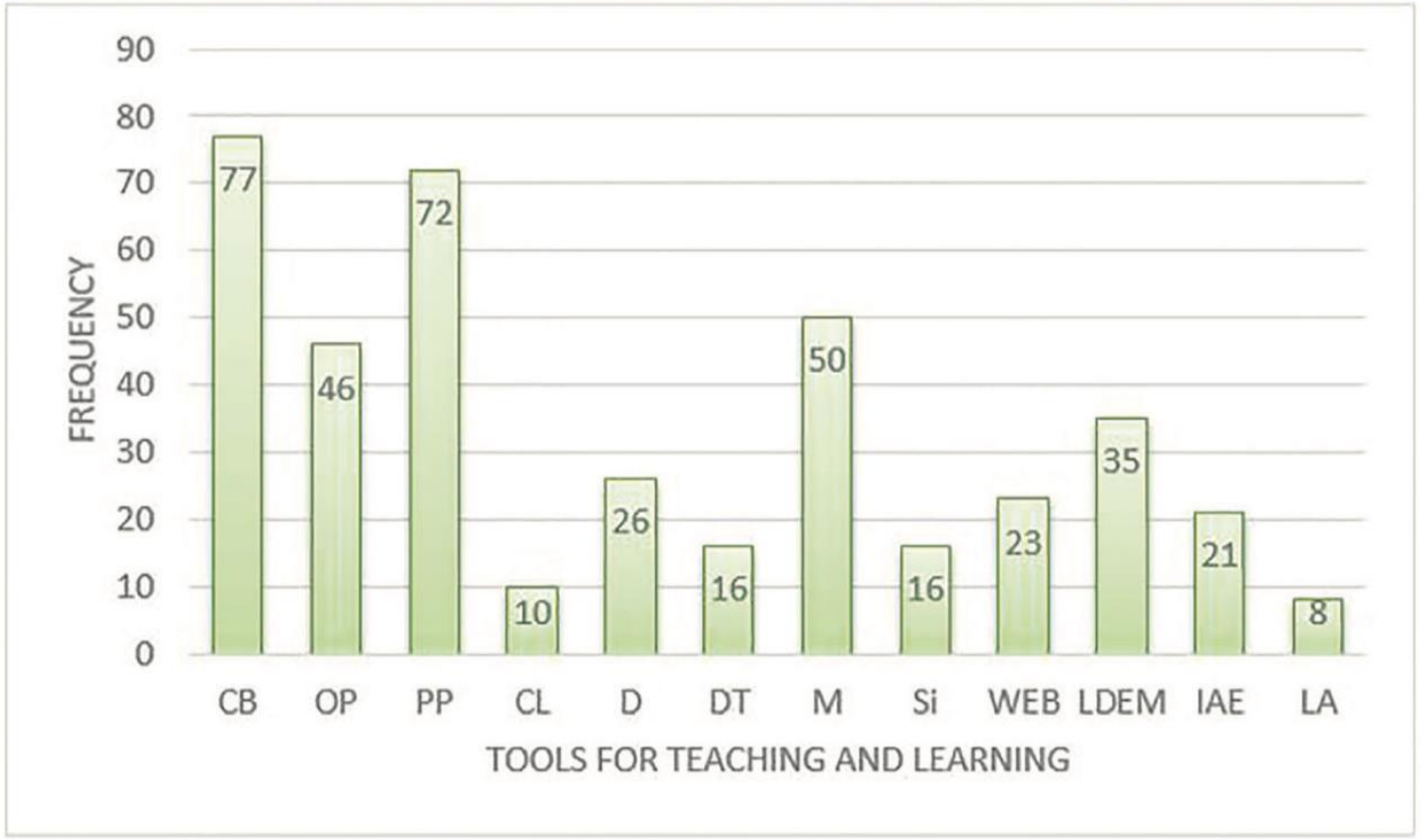
Data on STEAM Education

COMPLETION RATE (%) ACROSS STEAM AREAS
(AVERAGE CHED 5-YEAR DATA UNTIL 2016-2017)



Data on STEAM Education

Frequency of common tools for teaching and learning used

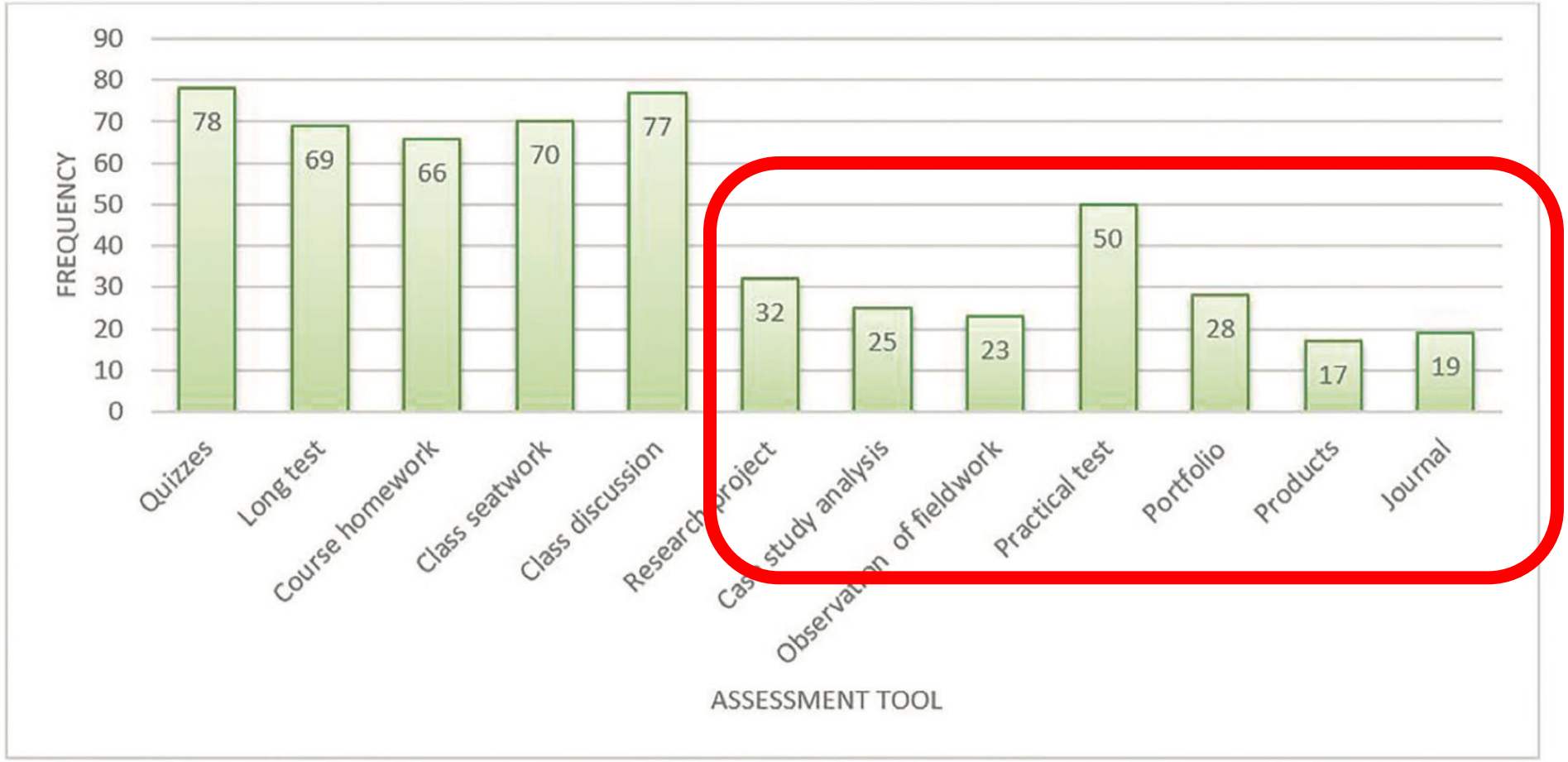


Legend:

- CB – Chalkboard/whiteboard/ SMART board
- OP – Overhead projector/ Opaque projector
- PP – PowerPoint or other digital slides
- CL – Clicker Response System
- D – Demonstration Equipment
- DT – Digital Tablets and the like
- M – Movie, documentary, video clips, or YouTube videos
- Si – Digital simulations
- WEB – Websites
- LDEM – Equipment
- IAE – Improvised apparatus or equipment
- LA – Learning applications

Data on STEAM Education

Frequency of common Assessment Tools used

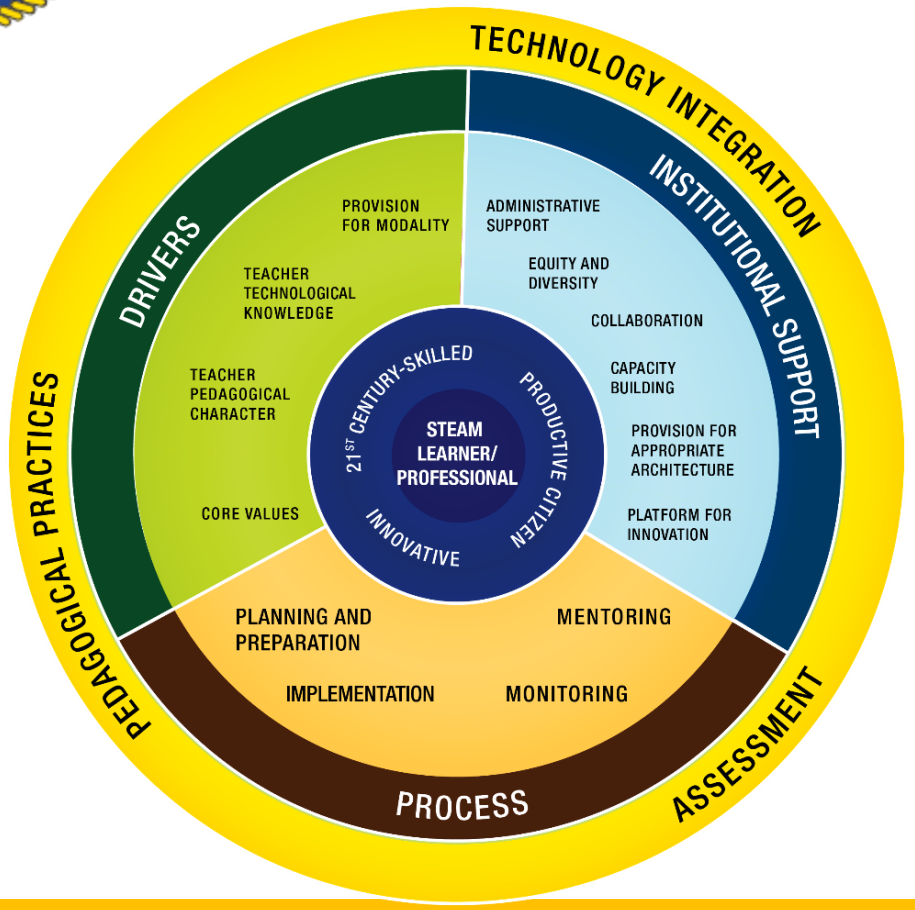


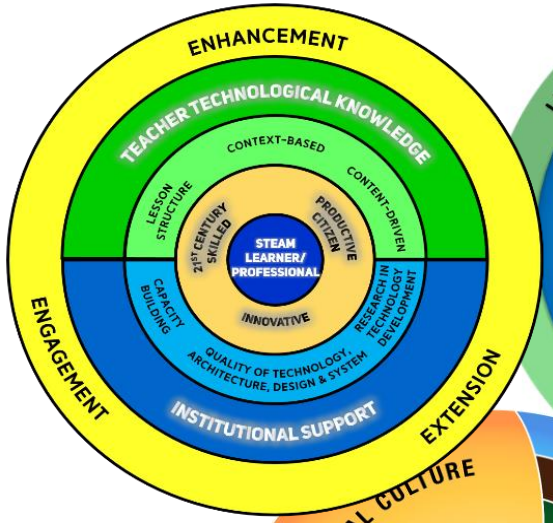
Data on STEAM Education

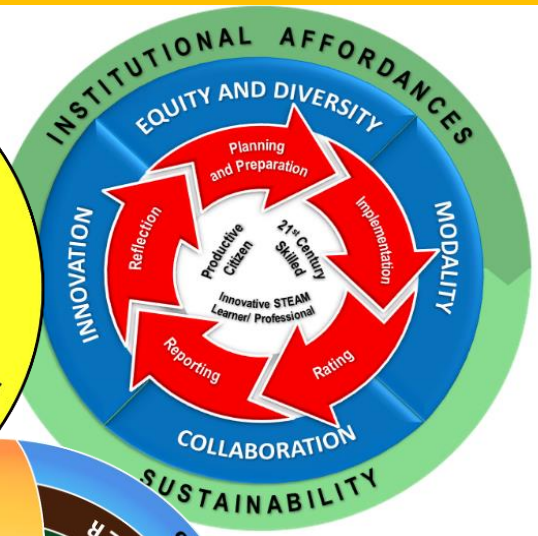
Common Pedagogy

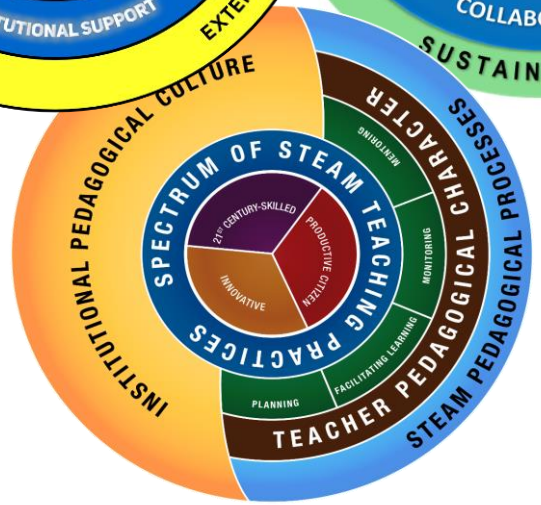
- Lecture Method
- Output-Based Learning
- Inquiry-Based Learning
- Apprenticeship/Mentoring

Our Products...





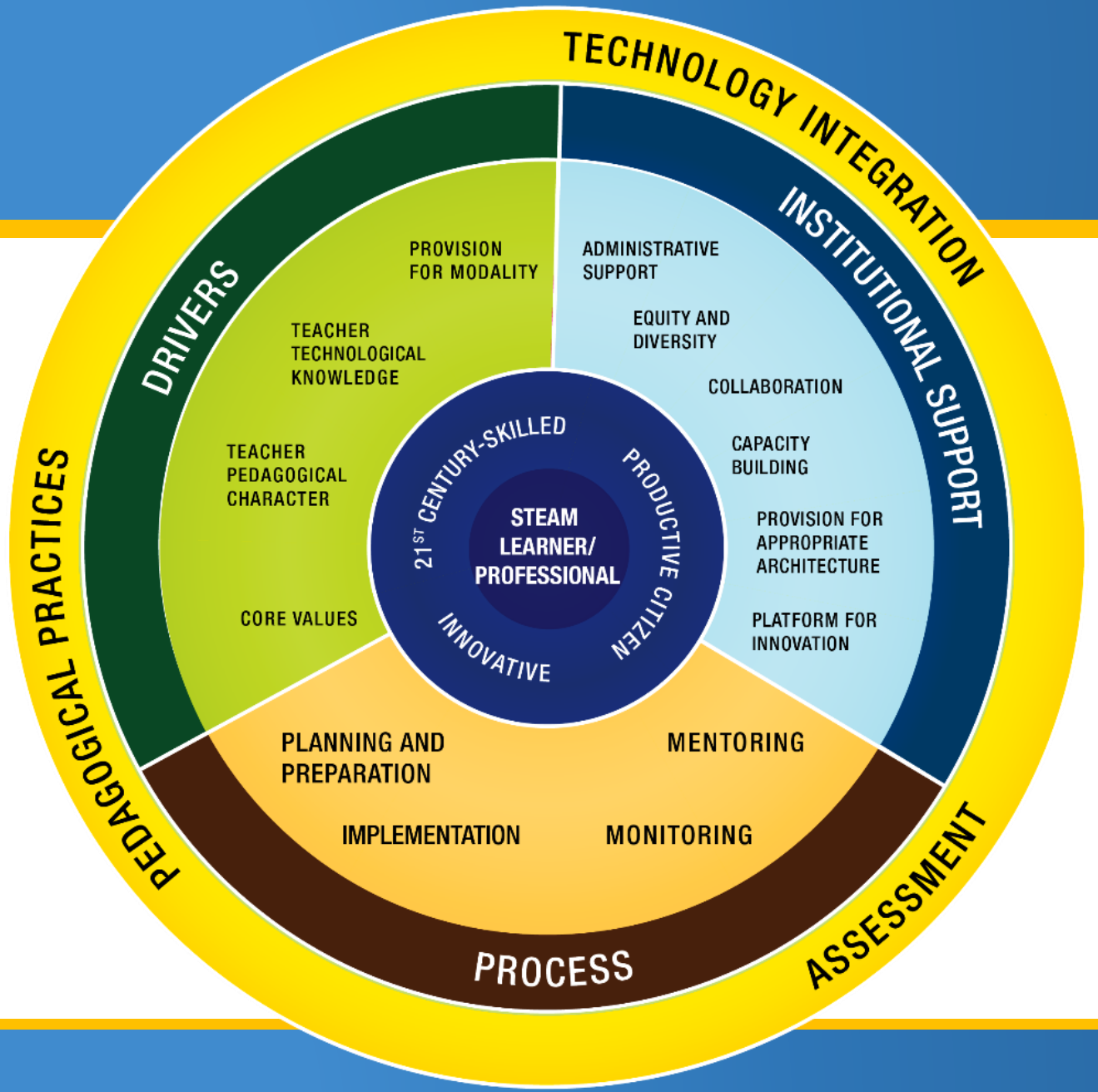




TPACK in Philippine STEAM Education (2017-2019)

Ground Models:

- TPACK Framework
- PSGs
- Standards of STEAM Teaching



TPACK in Philippine STEAM Education (2017-2019)

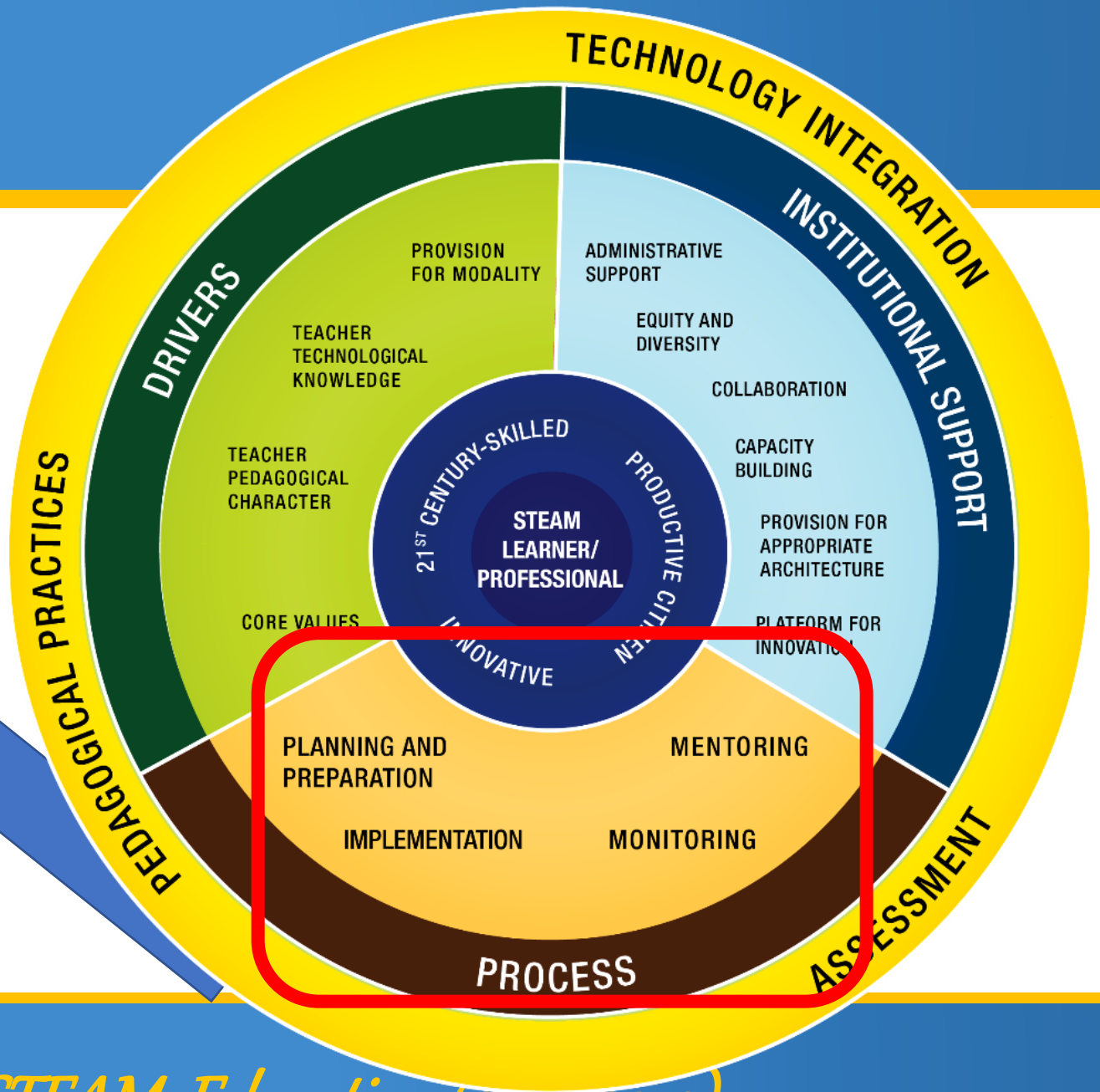
CMO No. 75, series of 2017:
PSG for Bachelor of Secondary Education

Outcomes	Drivers	Institutional Support

1. Demonstrate deep understanding of scientific concepts
2. Apply scientific inquiry in teaching and learning
3. Utilize effective science teaching and assessment methods
4. Manifest meaningful and comprehensive PCK
	• Teacher Pedagogical Character
	• Teacher Technological Knowledge
	• Core Values
	• Provision for Modality
		• Administrative Support
		• Equity and Diversity
		• Collaboration
		  ○ (Registrar, Admissions, IT, security, health unit, library, HR, Accounting and other departments)
		• Capacity Building
		  ○ (Do needs analysis here to be informed of what needs capacitating)
		• Platform for Innovation
		• Provision for Appropriate Architecture

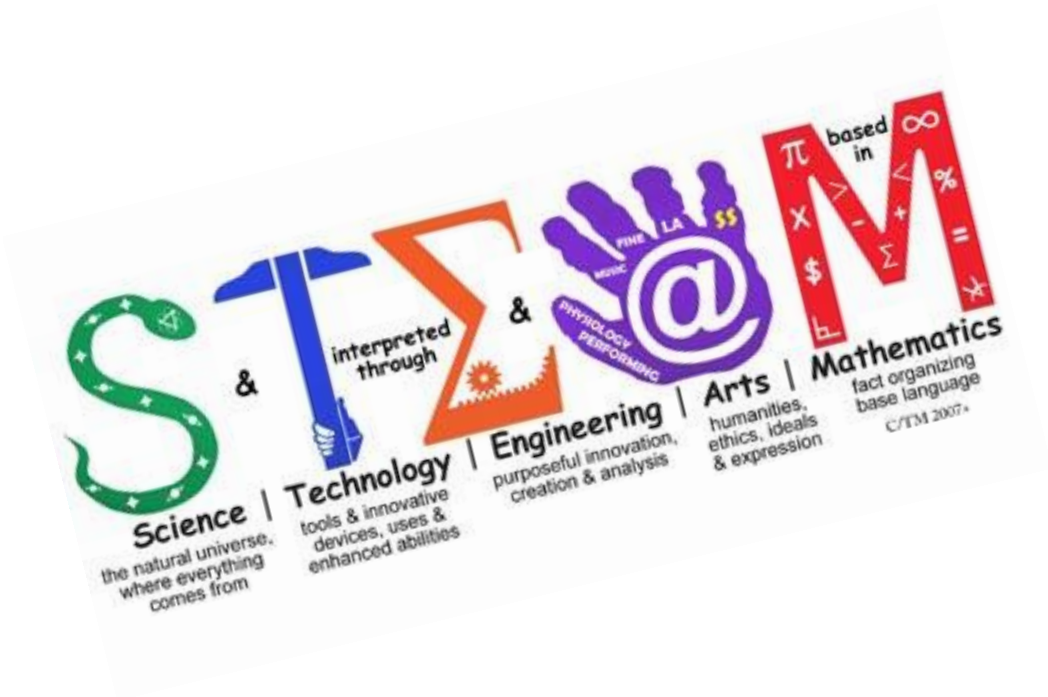
PROCESS

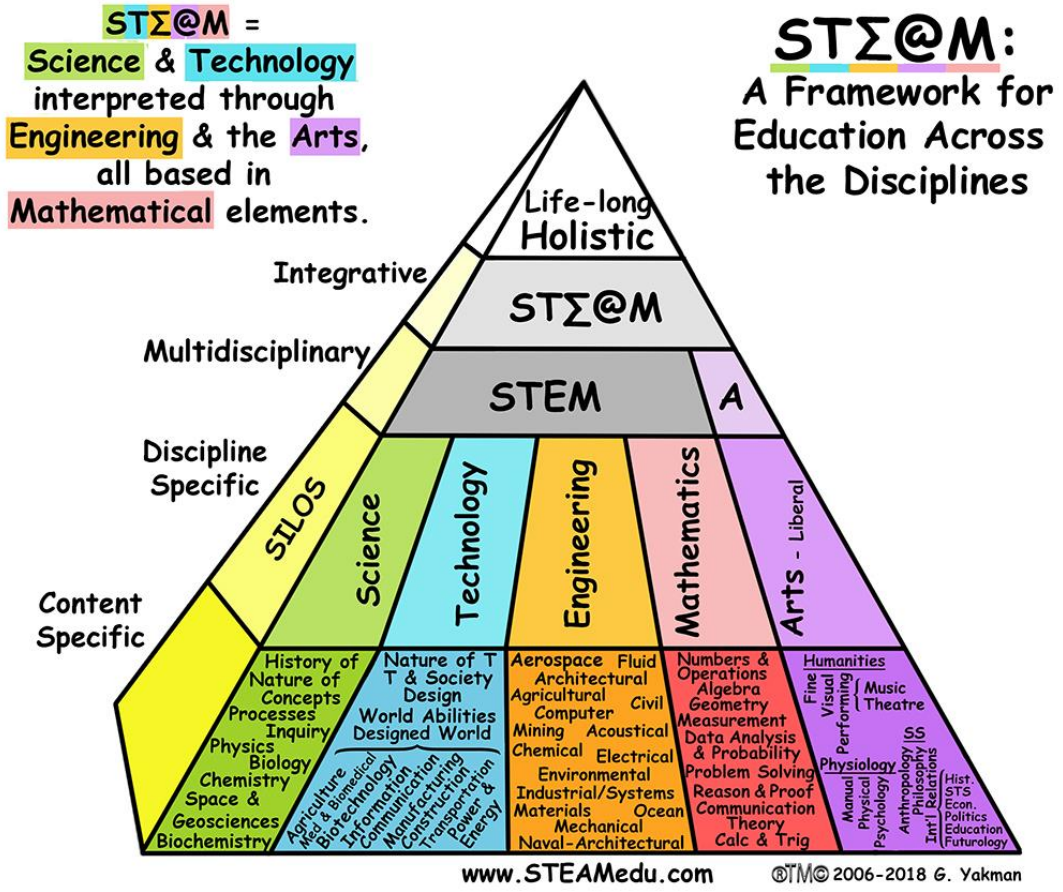
Planning and Preparation → Implementation → Monitoring → Mentoring



TPACK in Philippine STEAM Education (2017-2019)

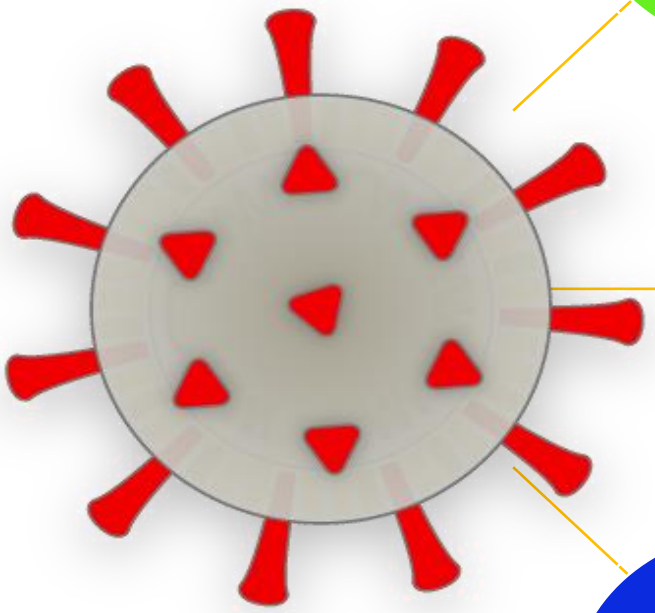
STEAM Framework/Approach...





STEAM Framework/Approach...

Physics in COVID-19?



Thermodynamic systems

- Closed
- Open
- Isolated

Thermodynamic Processes

- Isobaric
- Isochoric
- Adiabatic
- Isothermal

Thermodynamic Laws

- Zeroth Law
- First Law
- Second Law

FACT OR FAKE?

Can Air-conditioning Systems induce coronavirus transmission in closed areas?

Staying Healthy in a Closed System..

STEAM Lesson

1. Disinfect
2. Let the air in, lessen the heat out
3. Be mindful that this small thing is a dangerous thing
4. Keep all electrical appliances (AC for example) in good working condition.

STEAM Education Framework

- Lesson Exemplar Template
- Rubric Form
- Peer Review Form

Lesson Exemplar

- Learning Objectives with tasks
- Learner's Profile
- Pedagogies
- Technologies (what and how)
- Assessment (of, for, as)
- Reflection
- Modifications

STEAM Education Framework

- Lesson Exemplar Template
- Rubric Form
- Peer Review Form

Rubric Form

- *Connection among content, pedagogical approach and technology*
- *Rationale for Instructional strategy/ies*
- *Appropriateness of technology for instructor use*
- *Alignment to state standards for content and computer skills*
- *Completeness*
- *Language and Mechanics*

STEAM Education Framework

- Lesson Exemplar Template
- Rubric Form
- Peer Review Form

Peer Review Form

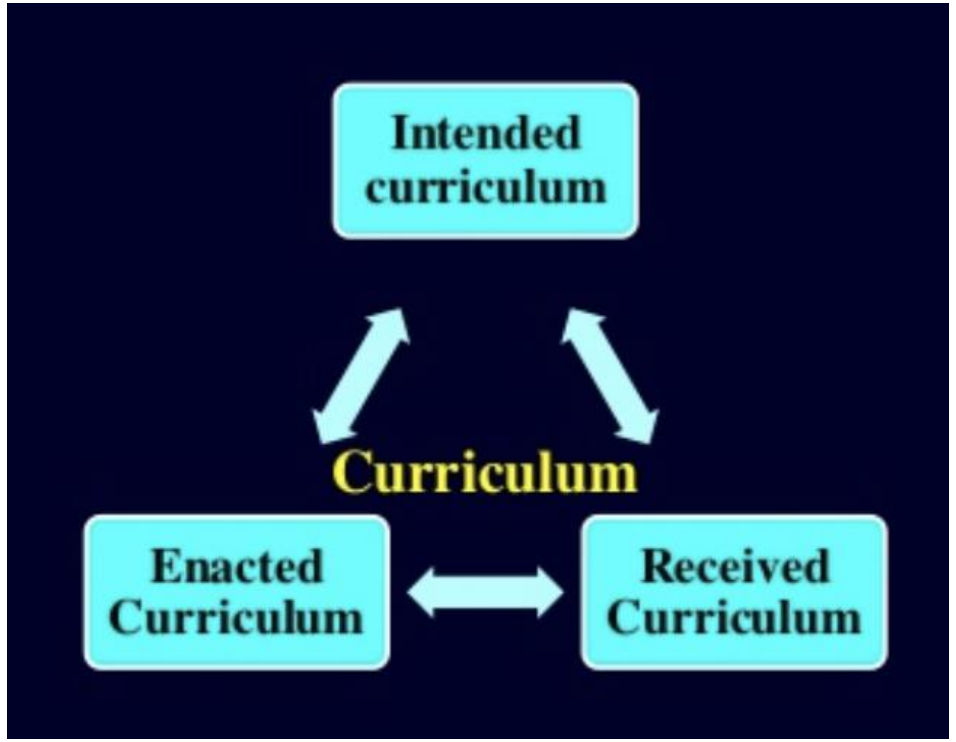
- Content
- Pedagogy
- Technology
- PCK
- TPK
- TCK
- TPCK

Which is Which?

Review...Revisit...

- Alignment
- Condition and Readiness
- Institutional Support
- Infrastructure

Alignment



Which is Which?

Opportunity for PLD:

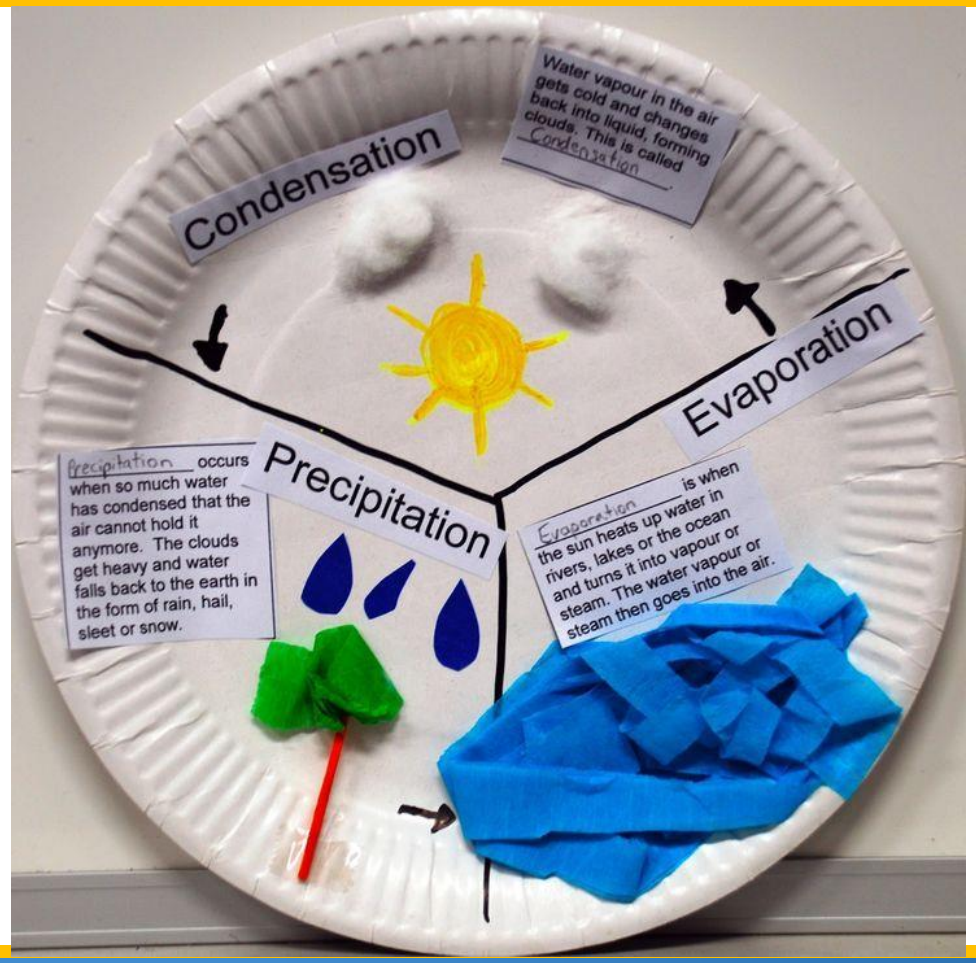
- Curriculum
- Learners
- Teachers
- Teaching

Things to consider

- What are the essentials?
- Who are our learners?
- What can they be?
- What can be said about their practice?

Teaching ...?

- Science
- An Art
- A Craft



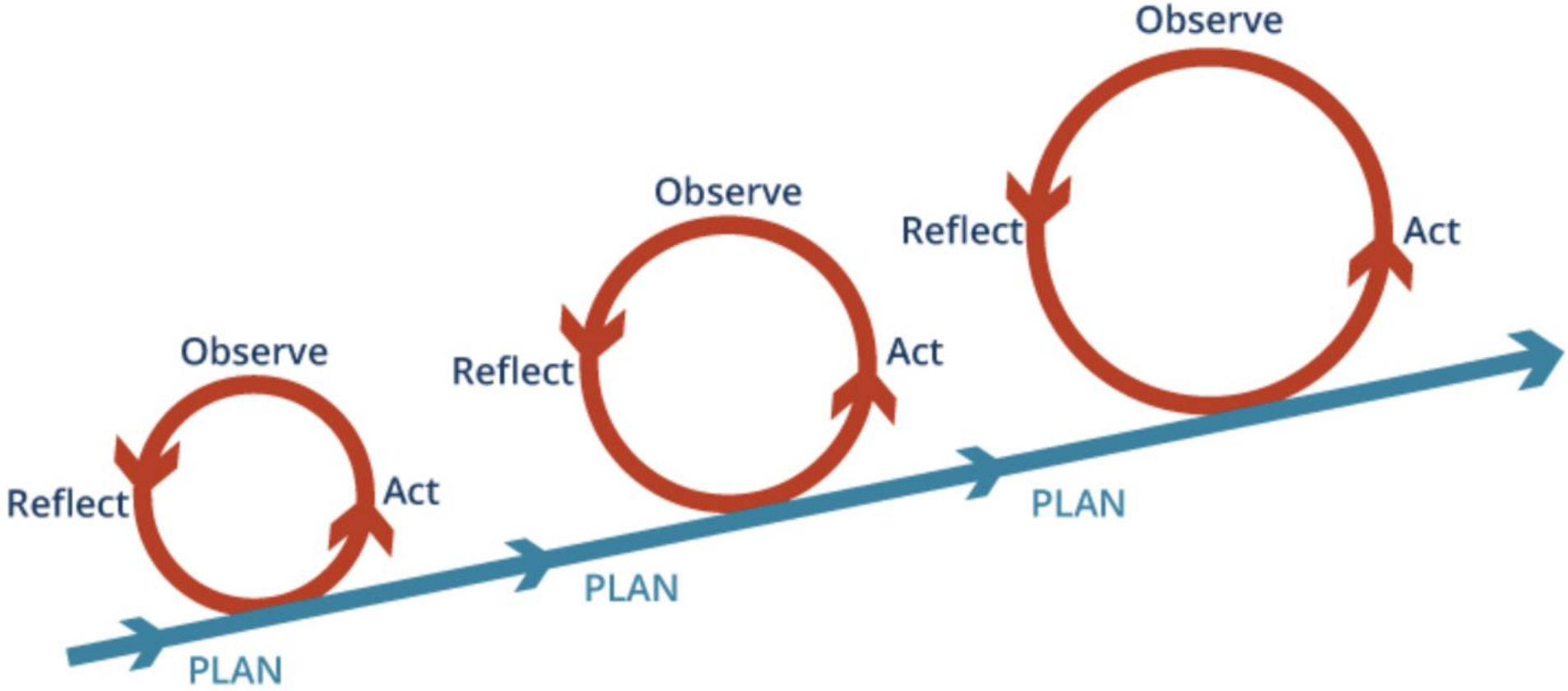
Professional Learning and Development?

- Co-designing
- Co-learning
- Community

The Processes

- **Meet** as a team
- **Plan** what best modalities
- **Act** up on the plan by co-development (e.g. LEs)
- **Reflect** on and **Discuss** each of the processes

PLD?


Observe
Reflect
Act
PLAN
Observe
Reflect
Act
PLAN
Observe
Reflect
Act
PLAN

Our Experience...

Product
- TPDP
- Co-developed LEs

Process
- Planning
- Acting/Observing
- Reflecting
  Discussing

Power
- Balance of power
- Emancipation
- Co-learning
- Co-development

In sum...

- We eye BL as a means to addressing education in the new normal
- In considering all factors: institution, teachers, infrastructures and learners, education in the new normal is non-prescriptive.
- As teachers, seat with others to plan, act and observe, reflect and discuss endlessly to better our craft.

- An opportunity for us to work with a team, and together we achieve our set goals
- An opportunity to improve our craft and become Reflective Practitioners and Practitioner Researchers.

We **zoom in** and work within our context to **zoom out**..

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Sources for TPACK:

http://pnu-onlinecommons.org/omp/index.php/chedpnutpack/index

Publication Office Website:
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STAY SAFE, EVERYONE!
SOAP
weimankow