

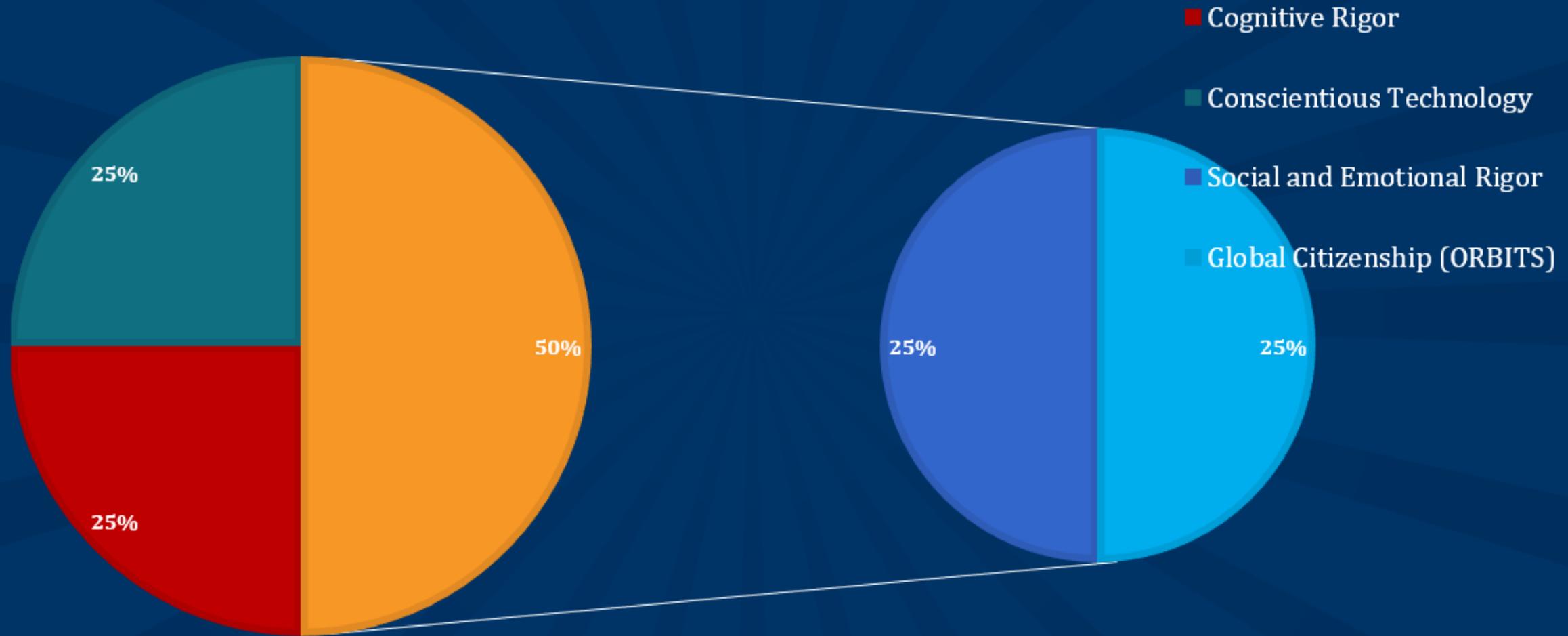


## 21<sup>st</sup> Century Education Series \_ O.R.B.I.T.S. Model Volumes 1 and 2

***Upcoming:*** Volume 3 for **2023-2024**

# SIMPLE, SYSTEMATIC, ENCOMPASSING MONTHLY RESOURCE

# 21<sup>st</sup> Century Learning \_ O.R.B.I.T.S. Model





First Half of the Focus

Cognitive Rigor



*Conscientious* Technology



Strategies and  
practices to  
foster cognition and  
metacognition



Catalyst for learning,  
assessment for learning  
and progress when used  
conscientiously



## Second Half of the Focus

Social & Emotional Rigor



Global Citizenship (*ORBITS*)



Strategies and  
practices to  
foster social and  
emotional rigor



*Catalyst* for assuring  
rights and  
responsibilities  
towards ourselves,  
our communities,  
and our planet



# EXCERPTS FROM PAST EDITIONS

Two volumes - 18 Editions – The four domains in each edition  
One topic per domain published in each edition



# Cognitive Rigor



## 2021-2022

- HESS\* CRM (General)
- HESS\* CRM (Reading & Listening, Written and Oral, Math and Science, Social Studies & Humanities)
- HESS\* CRM (Fine Arts, Health & Physical Education, World Languages, Career & Technical Education)
- 5E Model of Inquiry
- Socratic Seminar
- Metacognition
- Self-regulated Learning (SRL)
- Insight Learning and Insight Problem-solving

## 2022-2023

- Retrieval
- Formative self-assessment
- Brain Breaks
- Learnability Quotient LQ
- Collaborative Inquiry-based Learning
- Mobile Inquiry-based Learning M-IBL
- Peer Assessment
- Divergent Thinking
- Lateral Thinking

Most of the above topics include printable sheets, rubrics, and/or charts/figures, and framed within ORBITS approach.



# Conscientiousness Technology



## 2021-2022

- Rubric for Technology Implementation - (CIBP) Benchmarking
- TPACK & SAMR
- SAMR in Practice
- Technological Evolution (0.0 - 4.0+)
- Personalized Learning through AI \*
- Physiological, Behavioral, Contextual Data\*
- Measuring Learner Engagement with Technology
- Game-based Learning (GBL)\*

## 2022-2023

- Active Learning through Technology
- Computational Thinking
- Personalization Using Technology
- Adaptivity Using Technology
- Social Annotation
- Triple E-Framework
- E-Portfolios
- Blackboard Virtual Library
- Digital Citizenship

Most of the above topics include printable sheets, rubrics, and/or charts/figures, and framed within ORBITS\* approach.



# Social & Emotional Rigor



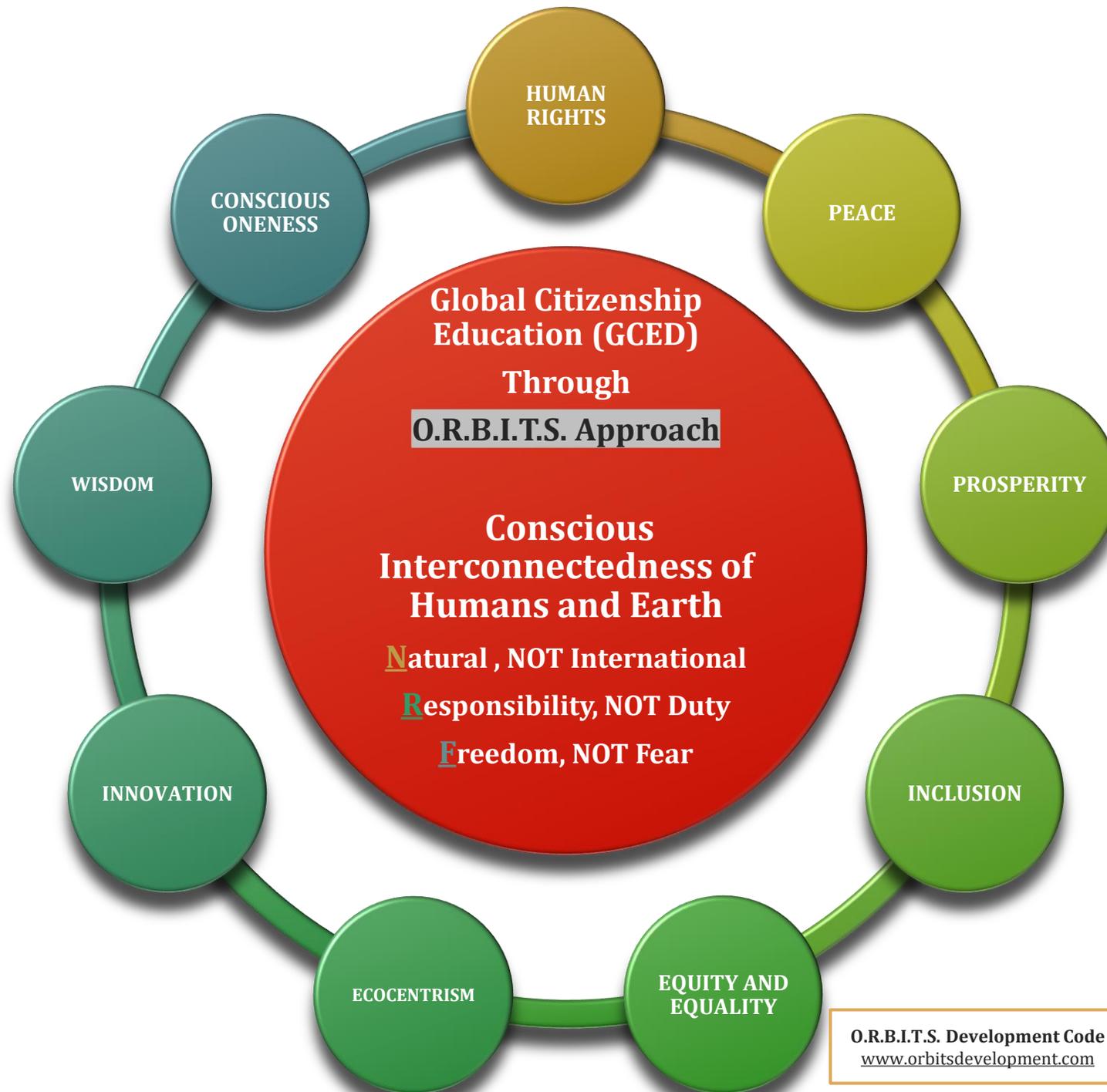
## 2021-2022

- Passive Listening
- Reflective Listening
- Critical Listening
- Active Listening
- Emotion Made Recognizable (Sketching)\*
- Emotional Competence
- Social Competence (perceptual-cognitive, motivational-emotional, and behavioral domains)
- Digital Empathy & Digital Harm

## 2022-2023

- Self-awareness
- Self-management
- Responsible Decision-making
- Social Awareness
- Relationship Skills
- Social Networking
- Trait Emotional Intelligence TEI
- Management of Physical and Social Environment
- Power of Language

Most of the above topics include printable sheets, rubrics, and/or charts/figures, and framed within ORBITS\* approach.



**Global Citizenship:** the ability to understand, value, and interact with universal aspects to bridge communication gaps and drive positive change.

O.R.B.I.T.S. Development Code  
[www.orbitsdevelopment.com](http://www.orbitsdevelopment.com)



# Global Citizenship (ORBITS)



## 2021-2022

- GCED Domains and Learning Outcomes \*
- Human Rights \*
- Peace (Outer & Inner)
- Prosperity
- Inclusion\*
- Equity and Equality \*
- Ecocentrism
- Innovation

## 2022-2023

- Getting Involved Locally and Globally
- Global Competence
- Social Cohesion
- Multilingualism
- Appreciation of Culture
- Intellectual Humility
- Positivity
- Evaluation of Information
- Sustainability Routines/Lifestyle

Most of the above topics include printable sheets, rubrics, and/or charts/figures, and framed within ORBITS\* approach.



**Rigor:** the quality of being detailed, careful and complete

**Cognition:** “the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.”



Sample page

## Self-regulated Learning (SRL)

SRL is in simple terms the monitoring, controlling, and reflecting on learning, as defined by educational psychologists. It is the umbrella of cognitive, metacognitive, behavioral, emotional and motivational aspects of learning.

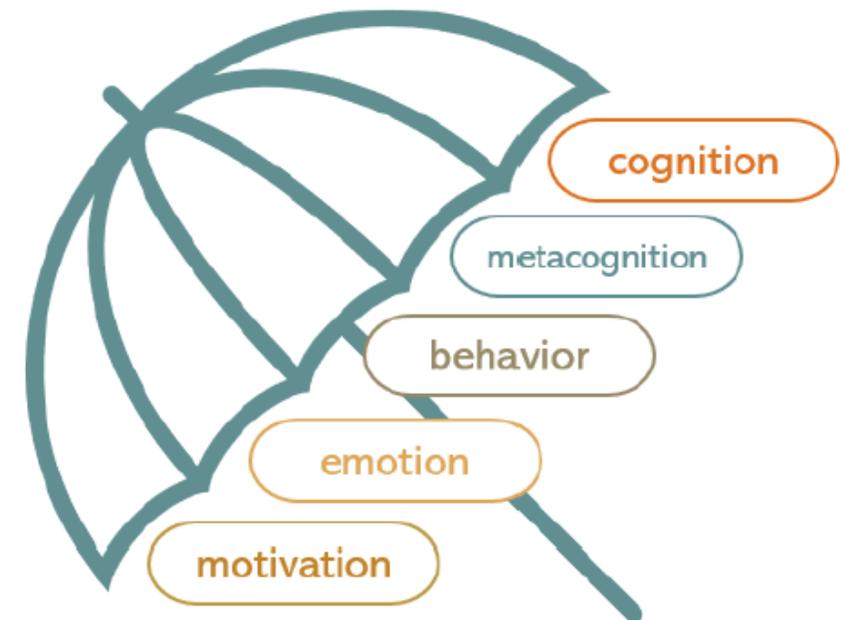
SRL is deep learning, that is intrinsic and self-driven by the learners themselves.

Teachers play the role of facilitating, motivating, and promoting the learning.

*"Self-regulated learning* is a form of learning in which the person, depending on the nature of his or her motivation to learn, self-determines one or more self-control measures (cognitive, metacognitive, volitional, or behavioral) and self-monitors the progress of the learning process."

Self-regulated Learning

External Goals



Self-directed Goals



**Metacognition:** The teacher's role is to allow facilitation of the metacognitive thinking. It is important to know how to identify metacognitive thinking and performance that aligns with it.

**Printable** Reflecting on learner's behavior so that **metacognitive thinking** is detected and encouraged. (Teachers can select their subject matter and reflect on the metacognitive thinking displayed by each learner)



Sample page

K-12 (Subjects vary by stage and system) Grade:... Week: ...	Learners (Names)	A	B	C	D	E	F	G	Criteria
<ul style="list-style-type: none"> <li>o First Language Arts</li> <li>o Mathematics</li> <li>o Science</li> <li>o Biology</li> <li>o Physics</li> <li>o Chemistry</li> <li>o Earth Science</li> <li>o Environmental Science</li> <li>o Social Studies</li> <li>o History</li> <li>o Geography</li> <li>o Foreign Language Arts</li> <li>o Other subjects (.....)</li> <li>(.....)</li> </ul>									<p><b>A.</b> Can follow-up easily in the classroom</p> <p><b>B.</b> Can finish notes and assignments when many others cannot</p> <p><b>C.</b> Can connect new concepts with concepts learned in the past</p> <p><b>D.</b> Can search for solutions to problems faced during studies by thinking logically or strategically (step by step/what makes sense to him/her)</p> <p><b>E.</b> Can find alternative methods to solve problems (checking with teacher, with peers, in books, or online searching)</p> <p><b>F.</b> Displays a positive sense of self-confidence and self-reliance (even when receiving a low grade, he/she can see this situation from strength to rectify or do things differently the next time)</p> <p><b>G.</b> Shows a great sense of responsibility in his/her own behavior (does not blame other people or situations)</p>



**Rigor:** the quality of being detailed, careful and complete

**Cognition:** “the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.”

Sample page

## Ways for Teachers to Allow Successful Metacognition

1	Creating opportunities (time, space, context) for learners to be metacognitive [learning environment]
2	Ensuring that classwork relies much less on recall and more on critical and creative thinking
3	Shifting the attitude and the need for discovery from teachers to learners
4	Making it clear to learners that they need to: <ol style="list-style-type: none"><li>1. clarify the goal of the task(s)</li><li>2. identify or select the most suitable strategy that suits the task</li><li>3. identify or select the most suitable strategy that suits the learner</li><li>4. be strategic and start first with planning, then monitoring, and regulating one's own learning and at the end, evaluating the learning result and the procedures accordingly.</li></ol>
5	Provide feedback to learners so that they can stay on track



**Rigor:** the quality of being detailed, careful and complete

**Cognition:** “the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.”



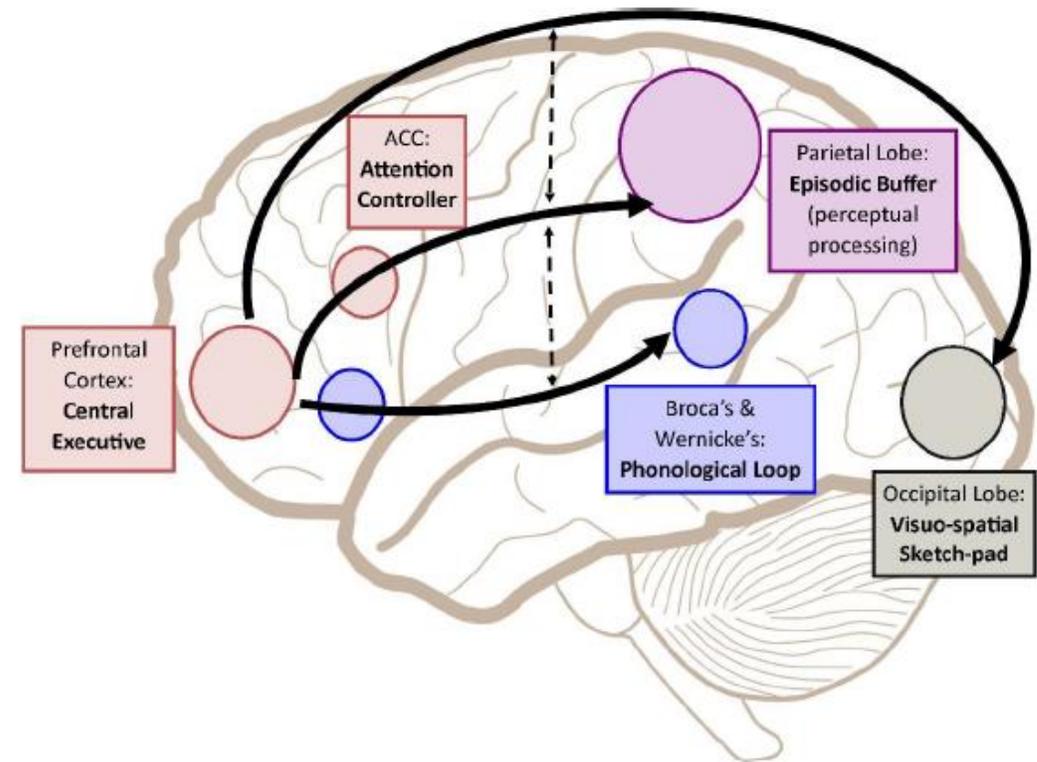
Sample page

## Insight Learning & Working Memory

**Insight problem-solving** does not demand much working memory compared to non-insight problem solving, which makes learners with weaker working memories able to do more of this problem-solving.

This is more about capturing an understanding of something, pausing and testing hypothesis, restructuring and verifying solutions.

Brain regions engaging in working memory are shown in the figure on the side. Control systems are not demanded to exert effort in insight problems as research shows.



Source: *Frontiers in Psychology, Cognitive Science, 2018, Article Working Memory From the Psychological and Neurosciences Perspectives: A Review*

## RESEARCH ,

- “ability to generate multiple alternative solutions to a given situation or problem”  
-Guildford (1956)
- “underpins the creative potential rather than creativity”  
-Runco & Acar (2012)
- “the generation of original solutions during divergent thinking can be enabled by the combination of related and unrelated categories”  
-Baughman & Mumford, (1995)

## PRACTICE ,

This is a way of thinking that involves creativity and is mainly needed in project-based and problem-based learning.

This usually happens at the beginning of projects or problem-discussion sessions as ideation. It is critical that quantity here is encouraged, rather than quality, to encourage the flow of ideas.

This can be done as such:

1. Brainstorming sessions to think of solutions and ways
2. Exploring solutions from different angles
3. Discussing new ideas in a sense that others' perspectives are well-considered and respected

## OBSERVATION

- Divergent thinking is mainly about creativity in finding solutions and ideas. That's why self-activated cognitive processes need to be allowed so that learners get the best of the learning experience, which is also implies real-life fluid learning
- There may be resistance while doing divergent thinking, mainly because of new ideas, but this is a natural part of the process.
- It is important to know that feedback does not always help in divergent thinking. Therefore, giving space for learners to explore and test by themselves may be more helpful.

## RESEARCH

- “data reveal a correlation—although perhaps not causality—between student use of the library and higher retention rates”  
-Thorpe (2016)
- “statistically significant relationship between library use and student success” & “nontraditional age (age 25 and up), Pell recipients, nursing students, and students who earned a higher GPA were more likely to use library resources than their counterparts” \*  
-LeMaistre (2018)

\*can be applied to middle and high school

## PRACTICE

This is a service that schools offer as digital support material. This is also very helpful in harnessing Information Literacy IL skills.

This virtual library can include:

- digital material
- guidebooks
- interactive instructional videos
- library assignments
- databases
- Ask a Librarian (Chat- email)
- e-books
- rewards
- “Reader of the Month” Board of Fame
- Interactive sessions via Zoom with learners

## OBSERVATION

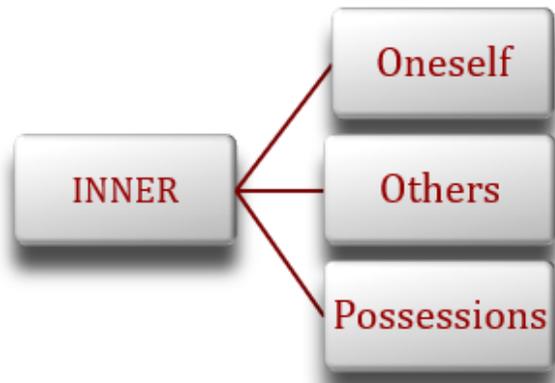
- It is important to understand that this service does not replace a librarian. It is designed to assist a librarian as more learners need guidance. In this case, the librarian can find more time to help learners with need for in-person support, while others can access material easily via the virtual library.
- Schools that can afford the service may also include some special supportive features, such as announcements of new material, points earnings, etc..



Peace has different facets. As per ORBITS approach, peace is all-encompassing. It is important that **learners and teachers** understand certain aspects or criteria and observe how they are being evident/not evident in their communities. This must be given attention to in schools and can be modified to fit stages and age groups for better understanding.

**Printable 1 Inner Peace (Learners and Faculty/Staff can shade the face: for observing and knowing)**

Sample page



<i>Oneself</i>	
Releasing limited beliefs (thoughts, such as “I am not good enough”, “I cannot do that”, “I cannot succeed in this”, “I always make mistakes”, “I always fail”, “I do not have enough courage”, etc..)	☺ ☹ ☹
Doing regular emotion processing	☺ ☹ ☹
Relinquishing what no longer serves oneself such as unhealthy or unsuitable lifestyle or habits	☺ ☹ ☹
Anchoring what fits in (anchoring means fixing ONLY what fits the situation instead of accumulating matters)	☺ ☹ ☹
Embracing plot twists (sudden, unexpected changes)	☺ ☹ ☹
<i>Others</i>	
Avoiding judging others based on generalization or personal, biased views	☺ ☹ ☹
Avoiding jumping into conclusions without enough evidence	☺ ☹ ☹
Having clear boundaries in relationships	☺ ☹ ☹
<i>Possessions</i>	
Having the needed more than the desired (reasonable consumption) <b>[chasing possessions more than capacity brings disturbance and lack of peace]</b>	☺ ☹ ☹
Doing as many gratitude exercises or practices as possible to remind oneself of tangible blessings	☺ ☹ ☹
Feeling content about possessions rather than wishing to have what others have	☺ ☹ ☹

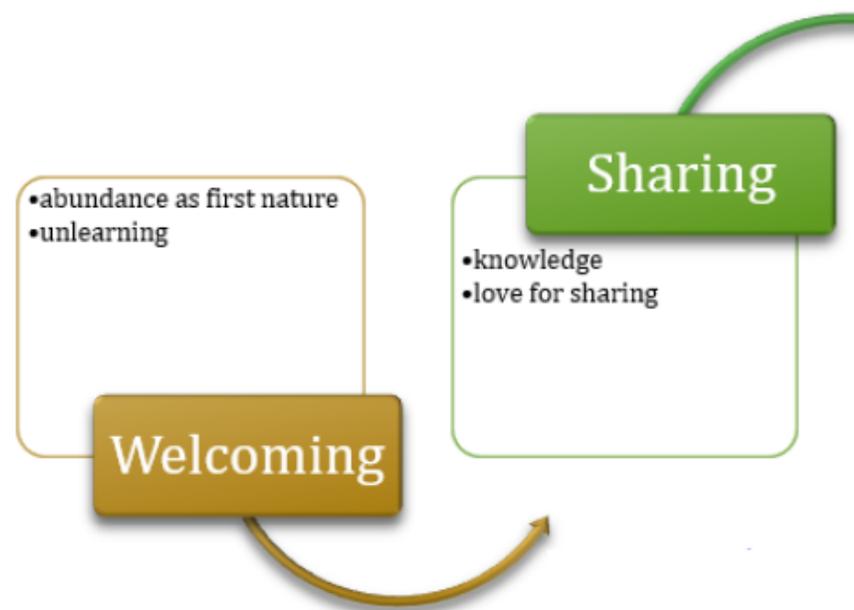


Prosperity has different facets. As per ORBITS approach, prosperity is the reason why we can have positive changes and development in our life that will eventually be positive for our communities. It is important that **learners and teachers** understand certain aspects or criteria and observe how they are being evident/not evident in their communities. This must be given attention to in schools and can be modified to fit stages and age groups for better understanding.

**Printable 1 Prosperity (Faculty/Staff can select the face: for observing and knowing/Learners can have a similar charge.**

Sample page

<b>Welcoming</b>	
Expecting prosperity as first nature i.e. natural phenomenon, not as we are told by society	😊 😐 😞
Expecting prosperity at anytime and from any source	😊 😐 😞
Understanding that prosperity is energy (cannot be seen but it is a life force)	😊 😐 😞
Understanding that prosperity is a choice (we can choose to be prosperous or lacking)	😊 😐 😞
Analyzing patterns of behavior to detect built-in prosperity or lack and fear	😊 😐 😞
Looking at prosperous people , especially the rich and the creative, and judging them as bad or undeserving	😊 😐 😞
Not being worried or afraid of losing any form of prosperity	😊 😐 😞
Not complaining about other people, situations, and circumstances	😊 😐 😞
Not resisting what life brings, including unpleasant incidents	😊 😐 😞
Decluttering mind from limited thoughts, such as "I do not deserve to have all this", "success is scary I will not know what to do"	😊 😐 😞
Decluttering home and work area (sending away what is no more being used, sending the old to welcome the new)	😊 😐 😞
<b>Sharing</b>	
Writing or speaking to audience or family (speaking and initiating opportunities for quality time)	😊 😐 😞
Not being afraid to stand up for beliefs and values	😊 😐 😞





This is a quick assessment that teachers can do to identify learners' falling into digital harm. This can be explained to learners in a simple way so that they know the harm that can be done when digital empathy is not practiced. (It is important that the teacher takes the right steps to assist the learner and/or refer him/her to a counselor if any concern is noticed. )

**Printable [For Learners]: Reflecting on digital harm (Learners recording times they have done digital harm / which also depicts lack of digital empathy)**



Sample page

Type of Digital Harm	1	2	3	4
Gossiping	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Teasing	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Using mean words	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Lies	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Name-calling	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Harassments	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Rumors	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Threats	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Insults	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞
Ridiculing	😊 😐 😞	😊 😐 😞	😊 😐 😞	😊 😐 😞



# HOLISTIC LEARNING WELL-GROUNDED SUSTAINABILITY CONSCIOUS LEARNING AND BEING

## MANAL ZEINEDDINE



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