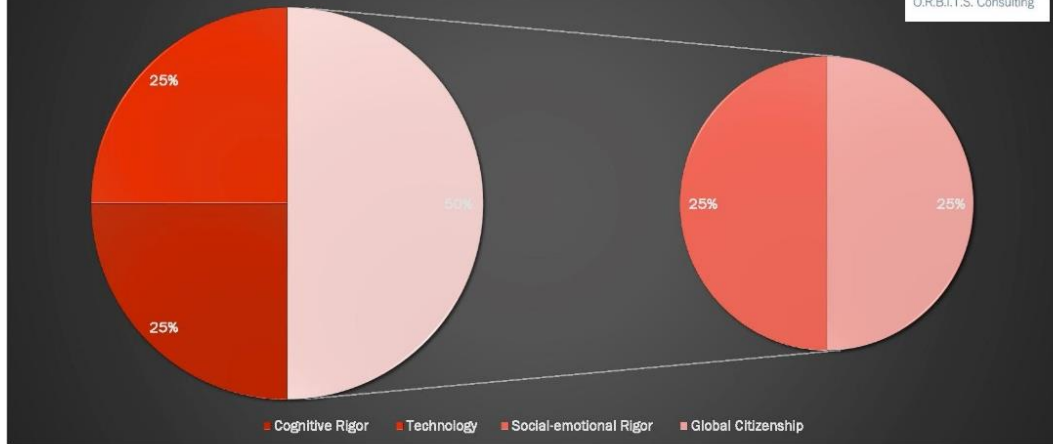




21st Century Learning – O.R.B.I.T.S. Approach

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O.R.B.I.T.S. DEVELOPMENT CODE

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21ST CENTURY EDUCATION SERIES

O.R.B.I.T.S. MODEL



COGNITIVE RIGOR



Rigor is the result of work that challenges students' thinking in new and interesting ways.

It occurs when they are encouraged toward a sophisticated understanding of fundamental ideas and are driven by curiosity to discover what they don't know.

(Sztabnik, 2015)



Rigor: the quality of being detailed, careful and complete

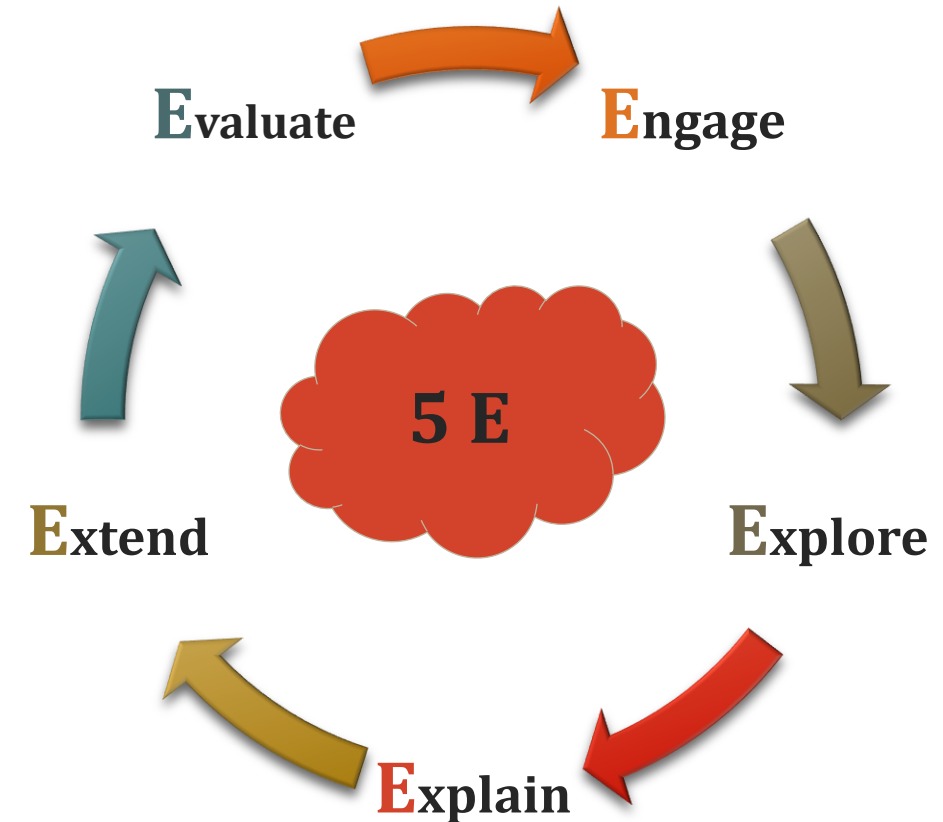
Cognition: “the mental action or process of acquiring knowledge and understanding through thought, experience, and the senses.”



5 E Model of Inquiry

5 E is an inquiry-based approach and targets *gradual transfer of responsibility from the teacher to the learner*. It is like solving a mystery or a puzzle and it is related to constructivist theory.

- **Engage:** This is mainly about stirring brainstorming and questioning so that learners start digging into their experiences, thoughts, and knowledge they already know. It is about hypothesizing and building up ways to validate their input.
- **Explore:** This is about working together to clarify understanding of the skills and concepts involved. This includes investigations (systematic observations), open communications and collecting evidence.
- **Explain:** This is about explaining in a logical manner the concepts involved, including establishing relationships based on evidence and logical argument, validating factors and showing evidence.
- **Extend:** This is about practice and application of what has been learned to the analysis (explanations).
- **Evaluate:** This is about assessing the entire learning process without judgement or criticism. For example, even when hypothesizing in certain subjects cannot be proven to be true, this is seen as productive and fruitful.





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.”

Gradual Transfer of (Problem - Process - Solution) from Teacher to Learner

Level 3: Open Inquiry	Learner	Learner	Learner
Level 2: Guided Inquiry	Teacher	Learner	Learner
Level 1: Structured Inquiry	Teacher	Teacher	Learner
Level 0: Demonstration	Teacher	Teacher	Teacher

Based on TEMI project

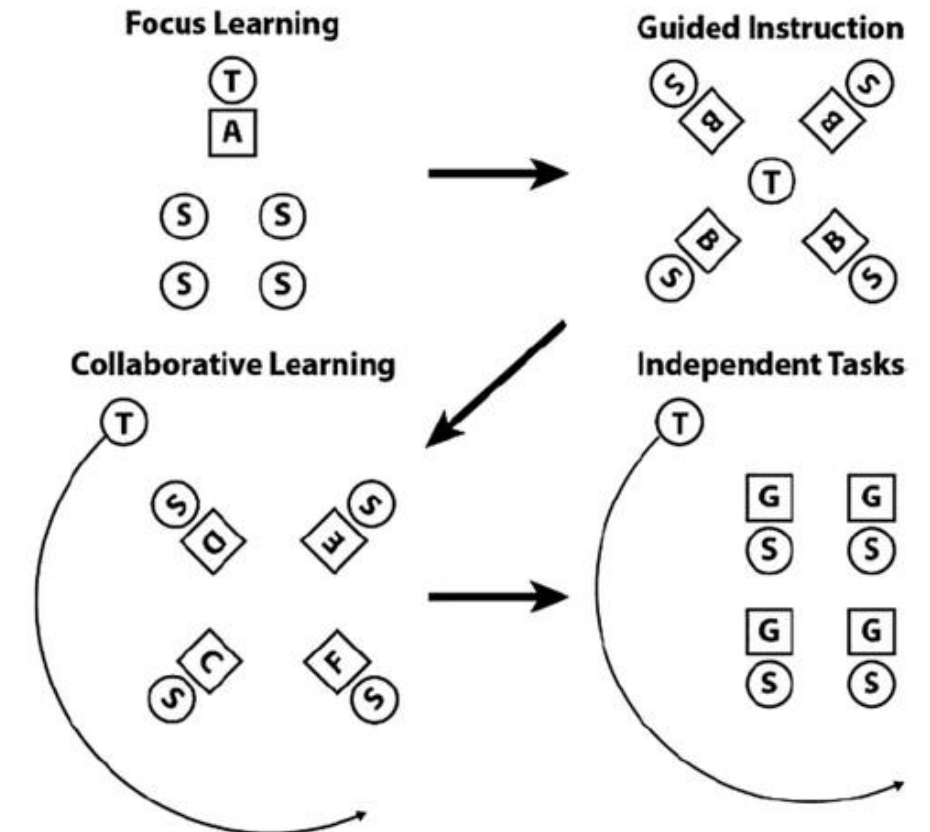
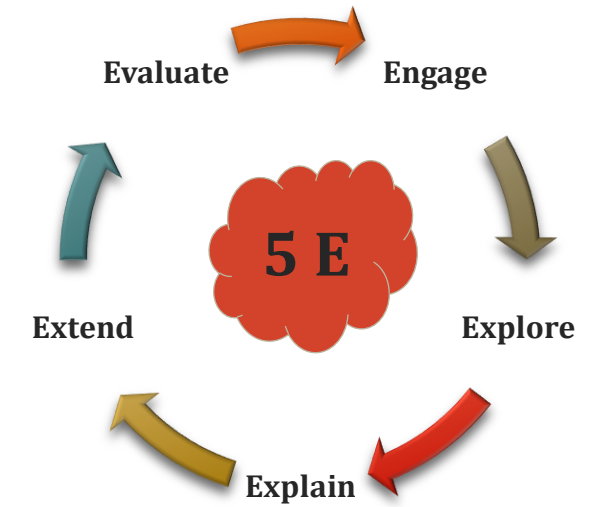


Figure A.1 A Visual Representation of the Gradual Release of Responsibility Model. Here, S and T stand for the student and teacher, respectively, and A–G stand for individual tasks. Source: The Art and Science of Lesson Design



5 E Model: inquiry-based approach that targets *gradual transfer of responsibility from the teacher to the learner*. It is like solving a mystery or a puzzle and it is related to constructivist theory.

Printable Reflecting on **5 Es** to ensure maximum planning for active learning. (Teachers can select their subject matter and reflect on their weekly preparation and implementation by writing practices under each category accordingly).



K-12 (Subjects vary by stage and system) Grade:Week:.....	Engage	Explore	Explain	Extend	Evaluate
<input type="checkbox"/> First Language Arts <input type="checkbox"/> Mathematics <input type="checkbox"/> Science					
<input type="checkbox"/> Biology <input type="checkbox"/> Physics <input type="checkbox"/> Chemistry					
<input type="checkbox"/> Earth Science <input type="checkbox"/> Environmental Science <input type="checkbox"/> Social Studies					
<input type="checkbox"/> History <input type="checkbox"/> Geography <input type="checkbox"/> Foreign Language Arts <input type="checkbox"/> Other subjects					
(.....) (.....)					



HOLISTIC LEARNING SUSTAINABILITY CONSCIOUS LEARNING AND BEING

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