The Cognitive Enrichment Advantage (CEA) Approach: Supporting and Meeting the Hidden Needs of Learners

Objectives
- Discuss CEA ideas about teaching/learning supported by research and theory
- Describe CEA’s unique role in a learner-centered classroom
- Describe CEA’s unique role in family-school partnership
- Share key attributes of CEA Building Blocks of Thinking and Tools of Learning
- Introduce CEA’s Student Success Project for high school and university settings

Contact Information:
Katherine Greenberg, Professor
University of Tennessee, Knoxville
khgreen@utk.edu

Jessica Nina Lester, Assistant Professor
Washington State University
Jessica.lester@tricity.wsu.edu

Jonathan Taylor, Assistant Professor
Troy University
jetaylor@troy.edu
CEA Unique Features

1. **Approach—Not Program**
   CEA is an approach rather than a program. CEA does not replace programs—it provides comprehensive knowledge and skills for helping students become more effective independent and interdependent learners. CEA is designed to help learners understand the multidimensional nature of the process of learning and develop skill in messing about with personal strategies.

2. **Art & Science of Mediated Learning**
   CEA shares perspectives on the art and science of mediated learning. It helps teachers think about the ways that mediated learning occurs naturally and how cultural values change the way certain qualities of mediated learning are used to a greater or lesser degree. CEA explores what it means to meet students within Vygotsky’s zone of proximal development; what it means to use Feuerstein’s parameters of mediated learning: intentionality, reciprocity, meaning and transcendence; ways to avoid co-opting the learning opportunity of a struggling learner; how to use techniques for helping students turn stumbling blocks into stepping stones; and how to position oneself as a facilitator of learner-centered teaching.

3. **Situated—Not Separate Curriculum**
   CEA is designed to be situated within content rather than taught as a separate curriculum. It is based on the belief that learning is best accomplished when connected to personal experience rather than through the presentation of abstract ideas. CEA is not designed to be taught as “thinking skills class time.” It is embedded within the content, the subject matter or other specific situations.

4. **Shared Vocabulary of Metastrategic Knowledge**
   CEA provides a shared vocabulary of metastrategic knowledge for everyone seeking to assist marginalized learners—including students and educators as well as family members who may be marginalized as well. CEA includes Building Blocks of Thinking (12 cognitive learning processes) and Tools of Learning (4 processes for understanding feelings and 4 for motivating behavior).

5. **Personal Learning Strategies—Not Expert**
   While most of cognitive education focuses on teaching expert strategies, CEA focuses on teaching students how to develop and adapt personal learning strategies. Expert strategies related to one or more BBs and Ts are discussed but then students are encouraged to develop their own and then refined until effective. CEA’s perspective is that students need to learn to develop and adapt personal strategies to meet all kinds of challenges and adapted to very specific situations.

6. **Relationship -Driven Communities of Practice**
   CEA furthers relationship-driven communities of practice that nurture an open, caring classroom atmosphere. By first understanding students’ lived experiences, teachers and others can better assist a marginalized learner. Instead of co-opting a learning opportunity (telling instead of asking, moving on to someone else, or seeking one-right answers) teachers and other students help by suggesting BBs and TS the struggling student can use to develop an effective strategy. CEA encourages open-ended, learner-centered activities and opportunities for students to justifying responses and gaining a multi-dimensional understanding of the content.
Building Blocks and Tools Critical Attributes

Building Blocks for Approaching the Learning Experience

Exploration
- the ability to search systematically for information needed in the learning experience
  - I think about what I need to know before I start to work.
  - I listen carefully before I answer questions.
  - I gather all the information or supplies I need before I begin to work.
  - I search for information or supplies in an organized way.
  - I think carefully about what others are saying before I share my thoughts.

Planning
- the ability to prepare and use an organized approach in the learning experience
  - I think about my goal.
  - I decide what steps I am going to take in order to reach my goal.
  - I decide the order in which I am going to do the steps I plan.
  - I use my plan while I am working.
  - I change my plan when it is not helping me to reach my goal.

Expression
- the ability to communicate thoughts and actions carefully in the learning experience
  - I clearly communicate what I want to express in certain activities.
  - I use my plan as I communicate my thoughts and actions.
  - I express everything needed to make my response effective.
  - I express my thoughts and actions in the order I intended to express them.
  - I express my thoughts and actions without co-opting the opportunity of others to learn.

Building Blocks for Making Meaning

Working Memory
- the ability to use memory processes effectively
  - I can use information stored in my brain to help me think.
  - I can clear thoughts and feelings from my Working Memory that keep me from learning.
  - I can focus energy on the thoughts I need in my Working Memory.
  - I try to use all the space I can in my Working Memory.
  - I focus energy in my Working Memory on storing important information in my brain.

© CEA, 2003
Building Blocks for *Making Meaning*, continued

**Making Comparisons**
- the ability to discover similarities and differences automatically among some parts of the learning experience
  - I know there is a need for Making Comparisons all the time.
  - I automatically make comparisons while I work.
  - I think about two or more concepts are the same or different in some way.
  - I compare my thoughts and actions to what I expect them to be and catch careless mistakes.
  - I am able to make more meaning by Making Comparisons.

**Getting the Main Idea**
- the ability to identify the basic thought that holds related ideas together
  - I automatically think about Getting the Main Idea while I work.
  - I think about what several related ideas share in common.
  - I am aware of the need to think about Getting the Main Idea in order to learn effectively.
  - I try to see how objects, ideas, and actions are related to each other.
  - I talk with others to see if we agree about the main idea.

**Thought Integration**
- the ability to combine pieces of information into complete thoughts and hold onto them while needed
  - I think about the need to combine bits of information while I work.
  - I use Thought Integration automatically when necessary.
  - I hold on to all the bits of information that I need to combine in the learning experience.
  - I develop strategies for using Thought Integration in the learning experience.
  - I change my strategies for using Thought Integration when I needed to do so.

**Connecting Events**
- the ability to find relationships among past, present, and future learning experiences automatically
  - I think about the need for Connecting Events while I worked.
  - I think about how certain activities relate to events that happened in the past.
  - I think about how certain activities relate to events that might happen in the future.
  - I think about how to use what I know about other events to help me learn in certain activities.
  - I share my connections with others.

© CEA, 2003
Building Blocks for Confirming

Precision + Accuracy
- the ability to know there is a need to understand words and concepts and use them correctly and to seek information automatically when the need arises
  ➢ I think about the need for Precision and Accuracy while I work.
  ➢ I find appropriate ways to seek a precise understanding of words and concepts.
  ➢ I am able to get a precise understanding when I need to understand words and concepts better.
  ➢ I am able to use words and concepts accurately when expressing my ideas.
  ➢ I develop strategies for using Precision and Accuracy when needed.

Space + Time Concepts
- the ability to understand and use information about space and time that is important in almost all learning
  ➢ I think about the size of things as they relate to each other.
  ➢ I think about the shape of things as they relate to each other.
  ➢ I think about the distance things are from each other and the location of things in relation to each other.
  ➢ I think about the order of events and the importance of that to my work process.
  ➢ I think about how long events last and the amount of time between particular events.

Selective Attention
- the ability to choose between relevant and irrelevant information and to focus on the information needed in the learning experience
  ➢ I decide what is important to think about as I work.
  ➢ I develop learning strategies for using Selective Attention as I work.
  ➢ I focus attention on relevant information.
  ➢ I ignore irrelevant information.
  ➢ I help others to use Selective Attention.

Problem Identification
- the ability to experience a sense of imbalance automatically and define the cause when something interferes with successful learning
  ➢ I think about the need to use Problem Identification.
  ➢ When a problem occurs, I feel it.
  ➢ I define problems that I experience.
  ➢ I experience and define problems automatically.
  ➢ I develop strategies for using Problem Identification effectively.

© CEA, 2003
Tools of Learning for *Understanding Feelings*

**Inner Meaning**
- the ability to seek deep, personal value in learning experiences that energizes thinking and behavior and leads to greater commitment and success
  - I think about why my work is important to me.
  - I think about why my work is interesting to me.
  - I think about why my work is useful for me to do.
  - I think about how my work relates to my world.
  - I encourage others to find their Inner Meaning.

**Feeling of Challenge**
- the ability to energize learning in new and complex experiences by focusing on the learning process rather than fear and anxiety about a possible unsuccessful product
  - I am aware of any positive or negative feelings of challenge.
  - I change behaviors that are helping me avoid challenges.
  - I focus more of my attention on positive feelings about the learning process and less on fear and anxiety about a possible unsuccessful product.
  - I break complex learning into manageable parts.
  - I think about what I already know that can help me with the challenge.

**Awareness of Self Change**
- the ability to recognize and understand feelings related to personal growth and to learn to expect and welcome change and development
  - I think about how I have changed in my ability to work.
  - I think about how I expect to change because of learning self-awareness.
  - I welcome change and feel comfortable with it.
  - I understand feelings I have about change.
  - I welcome change.

**Feeling of Competence**
- the ability to energize feelings, thoughts, and behaviors by developing beliefs about being capable of learning and doing something effectively
  - I am aware of my secure/insecure feelings about my ability to work.
  - I look for reasons to believe that I am capable of learning to do work effectively.
  - I think about things I know I can do well that would help me be able to work.
  - I think about the importance of overcoming doubts that I can work.
  - I help others to build a feeling of competence by giving them reasons to believe they are capable of doing or learning to do work.

© CEA, 2003
Tools of Learning for Motivating Behavior

Self-Regulation
- the ability to reflect on thoughts and actions as they occur to energize, sustain, and direct behavior toward successful learning and doing
  - I think about my thoughts and actions while they are occurring.
  - I make changes in the way I approach the learning experience with this special thinking.
  - I use Self-Regulation to help me think about Building Blocks and Tools that I can use to be more effective as I work.
  - I develop learning strategies to help solve my problems based on this special thinking.
  - I regulate how fast or slow I work based upon how complex, how familiar, and how much time I need to do well with my work.

Goal Orientation
- the ability to take purposeful action in consistently setting, seeking, and reaching objectives
  - I set goals for myself that are important to me.
  - I persist in working toward my goals even when it was difficult.
  - I feel energized by trying to reach my goals.
  - I reach those goals that can be reached while I work.
  - I share my goal oriented behavior with others.

Self-Development
- the ability to appreciate special qualities in everyone and to enhance personal potential
  - I think about what I can do best in relation to my work.
  - I work on goals related to my strengths to develop them more.
  - I think about what I don’t do so well that keeps me from using my strengths.
  - I work on goals to improve in ways that let me use my strengths more effectively.
  - I help others to see how much I appreciate their strengths.

Sharing Behavior
- the ability to energize life and learning for everyone by sharing thoughts and actions through effective interdependent learning skills
  - I share my thoughts and actions with others.
  - I listen carefully to what others are saying.
  - I ask questions that help me better understand the thoughts of others.
  - I try to learn from the ideas of others.
  - I try to learn new things by combining my thoughts with those of others.

© CEA, 2003
Questions Good Mediators Ask

➢ They ask learners to identify a Building Block or Tool that they can use to help solve a problem, and then help them learn how to integrate another relevant Building Block or Tool.

➢ They ask learners to share their personal meaning about Building Blocks and Tools, and then help them learn more my connecting this meaning to a deeper level of understanding.

➢ They ask learners to develop their own bridging principles, and then help them make certain the principle fits the learning experience AND can be applied in other home, school, work and social settings. (See Advanced Bridging Worksheets in the CEA Family-School Partnership Handbook and/or procedures for bridging in the CEA Teacher Handbook.)

➢ They ask learners to share learning strategies that apply bridging principles to other situations and then help them develop the strategies further to accurately fit the principle.

© CEA, 2003

More Questions Good Mediators Ask

Teachers [good mediators] contribute to meaningful learning by asking questions that otherwise would not be raised in the learners’ minds.

--They ask students to look back when they are looking forward,

--They ask students to anticipate when they are fixated with a past or present experience,

--They ask students to compare an experience with other experiences when they may be content with an episode,

--They ask students to compare their experiences to their friends’ when they are satisfied with their own.

--They ask students to label their experiences and define their learning outcomes when the students think they have already accomplished their learning task.

--They ask students to give examples to situations where what was learned can be applied when students are ready to move on “to the next chapter.”
The Cognitive Enrichment Advantage (CEA) Approach

Student Success Project

Katherine Greenberg, CEA Founder & Professor, The University of Tennessee, USA
Jessica Lester, Consultant & Assistant Professor, Washington State University, USA
Jonathan Taylor, Consultant & Assistant Professor, Troy University, USA

Nontraditional and underachieving college students face a number of difficulties due to their social, cultural, and cognitive backgrounds, which eventually may force them to abandon their studies. We infer that this “silent withdrawal” is undermining the diversity of the student body. Throughout the world, increasing numbers of universities are seeking ways to improve student success. Many large scale studies identify factors that predict success across students and result in programs that help improve student success but fail to identify the often hidden needs of learning. The CEA University Student Success Project is developing tools to meet these more personal student needs.

The Cognitive Enrichment Advantage (CEA) model fosters the acquisition of metacognitive skills to increase college success through a student-centered approach that helps students identify their “hidden needs” and adopt strategies to help them overcome learning challenges.

We propose three distinct but overlapping approaches for addressing this silent withdrawal through CEA. First, we are developing an inventory to measure students’ present awareness of these “hidden rules” of learning so that highly individualized feedback and assistance can be provided. Second, we are developing a card game that can be used by students in a collaborative and fun way to gain insight into personal strengths and weaknesses, develop an awareness of the CEA model, and develop personalized learning strategies that will assist them in their studies. A version of this card game is presently available to download and printout for use. Third, we propose an online generative, adaptive, digital game made up of two interrelated cores. On the one side, students are presented with challenges to be overcome by using the Building Blocks of Thinking and Tools of Learning of the CEA model. On the other side, they will be able to share their perceived needs and personal learning strategies by participating in the in-game community, monitored by CEA mediators. Students’ input is analyzed and re-integrated in the game: the more it is played, the more it evolves and improves. The game also features an “embedded survey” as an innovative way to gather data. Presenters will share a prototype of the game and discuss how it can be used with adolescents and college students. We envision including high school and college students in the development and field testing of both the digital game and inventory world-wide.

Learning the language of “metacognitive thinking” is beneficial not only at a college level, but also from a lifelong learning perspective. Increasing the success and retention of students in colleges translates in a diversified population of educated citizens and leaders, valuing diversity as a key resource for innovation.

The presenters will discuss the Student Success Project and also provide an introduction to the comprehensive CEA approach, including their related research. CEA has been used in more than six countries to increase students’ potential in settings from preschool through adults.

Other members of the research team include Drs. Carolyn Staples and Vittorio Marone, The University of Tennessee, USA.