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***Cranium CoRE* and the Marzano Art and Science of Teaching Framework**

Domain 1: Classroom Strategies and Behaviors

Lesson Segments: Involving Routine Events
DQ1: Communicating Learning Goals and Feedback

1) Providing Clear Learning Goals and Scales
   With *Cranium CoRE* this can apply to declarative knowledge based on content covered in the text, i.e., understanding how prejudice affects judgment OR procedural knowledge based on the process of finding support for an answer (clear claim), i.e., show the best example from our text of how prejudice affected someone's judgment in this chapter?
2) Tracking Student Progress
   Each *Cranium CoRE* game is comparable to a classroom meeting with all students encouraged to participate through gaming and discussion. You can set goals for percentages of correct answers for the whole class for this activity if you choose.
3) Celebrating Success
   This can be accomplished with *Cranium CoRE* based on the tracking of the classroom's percentage of correct answers OR individually through the discussion or defense of an answer (clear claim). For example, individually, after a student explains why an answer was correct and how he or she determined that (metacognition), you can celebrate not only the correct answer, but, even better, the good thinking that went into the decision. This brings into play Dr. Carol Dweck's entity theory versus incremental theory of intelligence and mastery.

Domain 1: Classroom Strategies and Behaviors

Lesson Segments: Involving Routine Events
DQ6: Establishing Rules and Procedures

4) Establishing Classroom Routines
   Whether *Cranium CoRE* is used every day, once a week or in some other time frame, the way it is used is very flexible and open ended from both a content as well as process standpoint. The more it is used to practice the thinking skills of reading, writing, speaking and listening, the more the students will master those skills.
5) Organizing the Physical Layout of the Classroom
   Due to the Instructional Strategy using academic gaming emphasizing collaborative learning with *Cranium CoRE* the layout of students into small groups is advantageous. This can also benefit group processing, jigsaws, critical input experiences, and reciprocal teaching, among other things.

***Cranium CoRE* and the Marzano Art and Science of Teaching Framework,** cont'd

Domain 1: Classroom Strategies and Behaviors

Lesson Segments: Addressing Content

DQ2: Helping Students Interact with New Knowledge

6) Identifying Critical Information
   During the game playing part of *Cranium CoRE* this identification process takes place with any textually complex question as the game show host (teacher) poses the question "Can anyone show me from the text why this was the correct answer?"
   During the question composition part of *Cranium CoRE*, this identification process takes place when the individual or team looks for thematic material they want to put into a textually complex question.
7) Organizing Students to Interact with New Knowledge
   The way the teams are organized is up to each teacher. The classroom layout for collaborative learning in teams with *Cranium CoRE* uses academic gaming with team response systems to foster friendly controversy based on complex questions. The subsequent conversation, high engagement and debate make each classroom a lively place to learn and deepen understanding, regardless of the content.
8) Previewing New Content
   This happens quite naturally with *Cranium CoRE* since it is up to the teacher to determine the content. *Cranium CoRE* is an open source environment that works well for any subject with either academic game play or complex question writing for academic game play.
9) Chunking Content into "Digestible Bites"
   Whatever portion of material is desirable for the learning goals assigned to any student population for which a teacher is responsible, *Cranium CoRE* has the ability to allow the teacher to chunk it into the appropriately sized "bites."
10) Processing New Information
    Whatever material is selected, fiction, non-fiction, a portion of a textbook, a short story, a field trip, etc., *Cranium CoRE* allows the teacher to address the topic/s in what ever organizational structure or sequence that is needed. The academic game format fosters friendly competition and allows for clear claiming per answer given in an electronic "literature circles" framework.
11) Elaborating on New Information
    The complex textual questioning, clear claiming nature within *Cranium CoRE* provides an engaging, lively classroom environment. This, in turn, gives students a chance to develop a deeper understanding of any content, whether they are playing an academic game or they are developing one for the community to use and give feedback about it.

***Cranium CoRE* and the Marzano Art and Science of Teaching Framework,** cont'd

12) Recording and Representing Knowledge
One of the major strengths and most engaging attributes of *Cranium CoRE* is the ability of any member, be they teacher or student, to compose textually complex questions for any content. This critical input experience can be an individual or collaborative way for students to demonstrate their mastery of content.
13) Reflecting on Learning
Fit within the framework of how to address content with relevance and authenticity, *Cranium CoRE* fosters reflection through conversation while the students learn. It is an electronic form of literature circles.

Domain 1: Classroom Strategies and Behaviors

Lesson Segments: Addressing Content
DQ3: Helping Students Practice and Deepen New Knowledge

14) Reviewing content
Whether students are on the receiving end or developing end of the academic game questions within *Cranium CoRE*, the chance to review content is limited only by your imagination.
15) Organizing Students to Practice and Deepen Knowledge
The way teams for academic gaming can be set up or organized is unlimited with *Cranium CoRE*. This can be accomplished within a class, from one classroom to another, from one school to another. There is great potential for mentoring and deepening knowledge by composing games for younger students to use as well. The complex questions use inferring, hypothesizing, persuasive arguing, sequencing, validation, compare and contrast, and author's purpose as a means to challenge the students with the questions.
16) Using Homework
Cranium CoRE can provide a very engaging way to take knowledge and apply it in a very relevant, exciting, collaborative venue as homework for a team of students. They can use group processing to deepen their knowledge by composing complex questions for any subject or any text chosen by the teacher.
17) Examining Similarities and Differences
One of the many types of textually complex questions used and taught using the *Cranium CoRE* academic gaming questions and tutorial for how to compose textually complex questions are the compare and contrast questions.
18) Examining Errors in Reasoning
The very nature of the discussion and defense of answers to textually complex questions is standard operating procedure for *Cranium CoRE* academic gaming. Therefore, whether this gaming experience results in friendly competition and debate over the clear claim process or examining the logic and reasoning in the questions composed, self and group reflection about reasoning will be abundant.

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19) Practicing Skills, Strategies and Processes
Cranium CoRE is analogous to a gymnasium on the Internet to practice the language arts skills of reading, writing, speaking and listening. Additionally, the group processing that takes place collaboratively for higher order thinking is a tremendous way to practice reasoning strategies and processes in a lively, engaging and challenging way.
20) Revising knowledge
The whole *Cranium CoRE* process is one of thinking, self-reflection, assessment and revision of your knowledge base in a fun, academic gaming environment collaboratively with others.

Domain 1: Classroom Strategies and Behaviors

Lesson Segments: Addressing Content
DQ4: Helping Students Generate and Test Hypotheses
21) Organizing Students for Cognitively Complex Tasks
Whether the group is a small guided reading group or a large classroom of 30 plus students, *Cranium CoRE* works well for the sake of thinking safely with group processing to answer textually complex questions. You can even provide leadership and mentoring opportunities by allowing the more gifted students to work on the same team as those less gifted.
22) Engaging students in Cognitively Complex Tasks Involving Hypothesis Generation and Testing
This can involve both a micro view and a macro view in a classroom. Within *Cranium CoRE* one type of textually complex question is a hypothetical question, i.e., "If Charlotte were to help the President solve a difficult problem she mostly would __?__." That is a micro example. The opportunities are limited only by the text and imaginations of the students.
On a macro level the open source nature of *Cranium CoRE*, allows for any interdisciplinary topic to be examined and discussed for concept attainment, i.e., "From the book *Things They Carried*, what type of complex questions and discussion lead to a better Critical Input Experience for students to deepen their understanding of the effects of the Vietnam War on the soldiers fighting there?"
23) Providing Resources and Guidance
Since the *Cranium CoRE* academic games are open source, the resources are somewhat unlimited. A teacher can choose any topic as well as books and/or digital versions of same to guide students in a self-directed manner. In a like way, the discussions/conversations that ensue from the complex questions posed provide guidance to deepen understanding.

***Cranium CoRE* and the Marzano Art and Science of Teaching Framework**, cont'd

Domain 1: Classroom Strategies and Behaviors

Lesson Segments: Enacted on the Spot

DQ5: Engaging Students

24) Noticing When Students are Not Engaged
The standard way to play *Cranium CoRE* academic games is in teams with a radio frequency, team response system. A team size of three students is optimal. Under those circumstances, the teacher occupies all quadrants using one computer and one big screen for all the student's to be highly engaged. The teacher's response device allows the teacher (game show host) to be in and among the students for quick assessment/interaction purposes.

25) Using Academic Games
The essence of *Cranium CoRE* is academic gaming within a classroom or from one location to another using technology to virtually bridge the distance.

26) Managing Response Rates
One of the features of *Cranium CoRE* is to manage the time the students have to collaborate and look within the text for the answers to the textually complex questions. The teacher/game show host has the ability to stop the clock at any point beyond the set time for any question to allow more time, if needed, for more challenging questions posed to any audience.

27) Using Physical Movement
This is a major, somewhat subtle, factor for *Cranium CoRE* gaming. It is not unusual to witness a lot of animated discussion and shifting of body positions due to the high-energy environment with friendly competition.

28) Maintaining a Lively Pace
The *Cranium CoRE* pace is always lively. The teacher can slow it down as need be for the purposes of discussion for deeper understanding.

29) Demonstrating Intensity and Enthusiasm
The very nature of *Cranium CoRE* academic gaming is intense with enthusiasm occupying all quadrants of the classroom.

30) Using Friendly Controversy
Cranium CoRE is all about playing a team game, defending your answers and discussing the clear claim the teams make to support each answer.

31) Providing Opportunities for Students to Talk about Themselves
This is an area where *Cranium CoRE* acts as a tremendous springboard for discussion while in the middle of friendly controversy. The teacher has to simply take any thematic issue being debated and ask, "Has anything like this ever happened in your life?"

32) Presenting Unusual or Intriguing Information
The teacher has the ability, because of the open source nature of *Cranium CoRE*, to infuse within the classroom any unusual or intriguing topic he or she would like to cover.

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Domain 1: Classroom Strategies and Behaviors

Lesson Segments: Enacted on the Spot

DQ7: Recognizing Adherence to Rules and Procedures

33) Demonstrating "Withitness"
Cranium CoRE is like (Withitness) classroom management methods 101. The games have rules and regulations. The teacher will use all of the quadrants and have his/her positioning in the heart of the action with high engagement and high relevance.
The students typically are so highly engaged that problem behavior is not nearly as prevalent. Additionally, students practice and improve the added social skills of communicating with teammates under the pressure of a timer, collaborative problem solving and critical thinking, as well as conflict resolution.

34) Applying Consequences for Lack of Adherence to Rules and Procedures
Cranium CoRE games are so engaging and fun that they promote self-regulation of the Rules and Procedures. The students do not want to lose the privilege of playing the academic games.

35) Acknowledging Adherence to Rules and Procedures
The acknowledgement of adhering to rules and procedures with *Cranium CoRE* comes with the high engagement and intrinsic focus on the goal of working together successfully with your teammates.

Domain 1: Classroom Strategies and Behaviors

Lesson Segments: Enacted on the Spot

DQ8: Establishing and Maintaining Effective Relationships with Students

36) Understanding Students' Interests and Background
Cranium CoRE fosters dialogue and conversation at various levels among students as well as between the teacher and students. This provides opportunity for any contributor to the conversations to better know and understand the others involved and their perspective on a variety of topics, including their interests and background.

37) Using Verbal and Nonverbal Behaviors that Indicate Affection for Students
Just participating in *Cranium CoRE* games will give teachers ample opportunity to demonstrate how much they care for the players. Students like to be heard and have their opinions valued. This, among other things, is one of *Cranium CoRE's* strong points.

38) Displaying Objectivity and Control
If you allow the *Cranium CoRE* process to follow its normal course of reading along, answering the questions, discussing and defending the answers contextually, both the objectivity and control will rise to the top.

***Cranium CoRE* and the Marzano Art and Science of Teaching Framework**, cont'd

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Lesson Segments: Enacted on the Spot

DQ9: Communicating High Expectations for All Students

39) Demonstrating Value and Respect for Low Expectancy Students
One of the interesting phenomena while playing *Cranium CoRE* academic games with students, both of high and low expectancy, is that you hold the bar of achievement up high enough to challenge them with complex questions. Beyond that, you give them the respect they deserve by hearing their line of thinking to prove their points contextually.

40) Asking Questions of Low Expectancy Students
This not only applies to point 39 listed above, the complex textual questions in the *Cranium CoRE* academic games, but also to the questions that follow to inquire about how they came up with the answers.

41) Probing Incorrect Answers with Low Expectancy Students
The opportunities will abound in the process of playing *Cranium CoRE* games to have a discussion about why a student or students thought the way they did in trying to answer a challenging, textually complex question. At its best, in this process the students will help each other with the correct way to think about how to answer these questions, think more critically and problem solve collaboratively.