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A Brain-Compatible Lesson

There are five questions that every teacher should be asking and answering when planning a memorable lesson. These five questions are reflected in the lesson plans which follow and are outlined below. Is it necessary that teachers write down the answers to the questions when planning? No! Teachers might have a required lesson plan format that is different from the template contained in this book. Is it necessary that teachers ask the five questions? Absolutely!

SECTION 1: LESSON OBJECTIVE

What Do You Want Your Students to Know and Be Able to Do?

I have been taught Stephen Covey's (1996) *7 Habits of Highly Effective People*. I learned that Habit Two of the seven is *Begin with the End in Mind*. In other words, before you begin a task, visualize a successful outcome to that task. Then plan just how you will ensure that the successful outcome becomes a reality. Planning a lesson is no different!

Teachers are given approximately the same amount of instructional time annually but asked to teach more and more content and to do it all well! They are then assessed by how well their students have mastered the content delivered; therefore, teachers will be tempted to just cover content.

However, if all teachers are doing is covering content, then they should do what Madeline Hunter suggests and cover the content with dirt because it is dead to memory. To leave out the activity is to leave out the memory!

Before you begin to plan a lesson, visualize what you want your students to know, understand, and be able to do once that lesson is completed. Then, and only then, will you be ready to actually plan the lesson. Learning begins with the teacher, and hopefully the student as well, knowing what the desired results are and then working backward to where the student starts the lesson (Hattie, 2012). Here is an analogy that Covey uses. A pilot of an airplane cannot possibly plan the flight route until the destination has been determined.

In their book *Understanding by Design* (2005), Wiggins and McTighe refer to this concept as *backward lesson design.* The starting point should then be determined by the student's prior knowledge and where the student falls in the learning process. Wiggins and McTighe relate that teachers must *shift their thinking* regarding the student learning they are seeking and the evidence that the learning has taken place before even considering what activities will be used to deliver the learning (2005).

The 100 lesson plans contained in this book begin with the end in mind and state what students should know and be able to do at the beginning of each plan itself.

SECTION 2: ASSESSMENT

How Will You Know That Students Have Mastered Essential Learning?

Note that this is the second question in the lesson plan template and not the last question. There is another way to ask it. *How will you know when students know?* What will you do both during (formatively) and after (summatively) the lesson to determine whether students have learned what you need them to learn?

When my sisters and I were in school, it was always important to us and our parents that we make good grades. My father had the highest of expectations for our success. I can still hear him saying, *On the report card, a grade of C means Fair. My children are not fair. They are exceptional!* We lived up to those high expectations!

I always wanted to score well on any test to be administered; therefore, I spent a great deal of time in my room studying. However, I usually had to guess what was going to be assessed. If I guessed correctly, I made an A. If I guessed incorrectly, I was upset because my studying time had not been productive. Today's lesson planning involves not only telling students what you expect them to know, understand, and be able to do but also how those expectations will be assessed.

These assessments can, and probably should be a combination of more traditional selected types of assessments (such as multiple choice,

matching, or short-answer items) and constructed types of assessments (such as products and performances). Selected types help to ensure that students are familiar with the formats encountered when taking teacher-made, benchmark, or summative assessments. Constructed types are more aligned with the way many students learn and are more indicative of what will be expected of them in the actual world of work.

Each of the following lesson plans will indicate the specific assessments that will be used to determine what students should know, understand, and be able to do and how we will know when they can do it. Those assessments should be a combination of both authentic and traditional forms of assessment if we really want to know if all students are learning.

SECTION 3: WAYS TO GAIN/MAINTAIN ATTENTION

How Will You Gain and Maintain Students' Attention?

Whether we like it or not, when we are teaching, we are vying for the attention of our students. If our lesson is not worthy of that attention, then it is going elsewhere. Years ago, that attention could be directed toward talking to a peer about things totally unrelated to the learning or writing and passing a note that was often intercepted by the teacher. Today, a lack of attention could still result in talking with a peer or texting while the teacher is oblivious to what is happening. Students can even be quiet and maintain eye contact with the teacher while simultaneously not paying a bit of attention to what is being taught.

There are four major ways to gain and keep the attention of students. They are *need*, *novelty*, *meaning*, or *emotion*. Note the word *or*, which means that a teacher does not need to employ all four ways to get the student's attention. One of the four is sufficient.

(CONSIDER *NEED, NOVELTY, MEANING,* OR *EMOTION*)

Need

The brain tends to pay attention to and remember things it perceives the need to remember. For example, when I was working on my master's degree in remedial reading at the University of Michigan, my grade in one course was dependent on the ability to increase the reading level of a high school student whom I tutored for one semester. My student was a ninth grader who was reading at approximately a third- to fourth-grade level and impatiently waiting to drop out of school due to his inability to read his textbooks. After I had tried a variety of instructional techniques, it dawned on me that Ricardo's immediate need was to secure his driver's license and ultimately become more mobile. I went to the motor vehicle's

bureau and secured a driver's manual from which I taught Ricardo sight words, the use of context clues, and other essential language arts skills and strategies. Was I able to get his reading to grade level? No, I regret that I simply did not have enough time. Did his performance improve? Absolutely! When the semester ended, Ricardo had the confidence to believe that he could take and pass his written driver's test, and I became one of his favorite teachers!

Students acquire knowledge so much easier when they perceive the need for the information. Some of the following lesson plans use *need* to gain the attention of students.

Novelty

Our brains pay attention to those things in the environment that look or sound new or different. For example, before we bought a house in the subdivision where we raised our three children, I was apprehensive due to the fact that a railroad track ran right beside it and I thought the passing trains would be disturbing. I asked some of the neighbors if that was the case, and they assured me that it would not be. We bought the house and moved into it. For the first week, I could set the clock by the noise of the passing trains that were right on schedule. I was upset since I figured the neighbors had not been truthful with me. The recognition of that noise lasted only a few weeks and then I, too, failed to notice. They say that people who live near airports experience the same thing.

If teachers want students to stop paying attention to their lessons, then they will want to teach the same way every day with little or no novelty in the lesson. Simply changing the teacher's location in the classroom as the lesson is being taught adds some novelty but the 20 brain-compatible strategies on which the lessons in this book are based will help to ensure that instruction continues to be taught in new and different ways.

There is no magic number of strategies which should be included in each lesson. The lesson objective should guide the determination of which ones fit the best. However, to use the same strategy too often is not a good thing! Many school systems today are thinking that every lesson should reflect the strategy of technology. While that strategy is certainly important, it becomes mundane and as boring as a worksheet if every lesson revolves solely on that one strategy.

Meaning

If teachers want to make lessons meaningful, they should think of ways to connect the content of those lessons to the lives of their students. This concept was delineated as one of the characteristics of a brain-compatible classroom in Chapter 1 and goes a long way in answering the question, *Why do we have to learn this?*

The strategy of *metaphor, analogy,* and *simile* enables teachers to take a concept that they must teach and make it more meaningful by connecting

it to another real-world concept that students already understand. For example, telling students that a main idea and details are like a table and legs or the layers of the earth are formed like the dirty clothes in a laundry basket with the most recent layers of clothes on top makes difficult concepts much easier to comprehend. Helping them to understand that the Richter scale for measuring the intensity of earthquakes is an example of a logarithmic scale would be another example of making content meaningful.

Emotion

Of the four ways to gain the brain's attention, *emotion* is the most powerful! The brain does not remember *days*! It remembers moments! Therefore, anything that happened in the world that had an emotional impact on the public will be long remembered. For example, visualize where you were on January 28, 1986, when the *Challenger* exploded. If you were old enough, you will probably recall that we lost seven astronauts that day including Christa McAuliffe, an extraordinary American teacher from New Hampshire who was specially selected to join the other six astronauts on the space shuttle.

However, I do not want to use a negative definition of emotion when talking about teaching and learning. If you were ever in the classroom of a teacher you disliked, you will never forget being in that teacher's room, but you are unlikely to recall much of the content taught. This is probably due to the fact that your brain was in survival mode while sitting in that class.

Teachers should want students to recall their content. Therefore, they must teach with passion and enthusiasm. According to Eric Jensen (2013), teachers can positively affect the state of students' minds simply by being in a positive state themselves. Passion and emotion are contagious! I have even told my husband, Tyrone, that the day I facilitate professional learning or teach students with no passion or enthusiasm, that day will be the last day I work as an educational consultant!

SECTION 4: CONTENT CHUNKS

How Will You Divide and Teach the Content to Engage Students' Brains?

As stated in Chapter 1, most human brains can hold approximately seven isolated bits of information simultaneously. This is the reason that so many real-world lists come in sets of seven. If I want my students to hold more, then I should chunk or connect the content. It is in this section of the plan that the teacher determines how much students' brains can hold at one time. That amount determines the size of a chunk or lesson segment. The amount of content contained in one chunk may be different for a special education student than for a gifted, regular education, or an ESL student.

Students with poor working memory can be supported if taught in fewer and smaller chunks of content (Jensen, 2013). A chunk, then, is one segment of a lesson objective. Many lessons will have only one chunk since the entire objective can be addressed. However, multiple activities may be used in teaching that one chunk.

Let's use this analogy to explain the concept of chunking. Visualize this scenario. You are listening to a speaker and the speaker tells you that he will be addressing three points or concepts in the speech. Now, your brain is positioned to listen for those three points, and you are disappointed if those points are not made. Each point would then include a strategy for getting the point across to the audience, such as visuals, storytelling, or the use of an analogy.

A teacher must determine which brain-compatible activities will be incorporated into each chunk. Due to the large amount of content to be taught, some teachers are tempted to leave out the student activity and simply tell students what they need to know in a boring lecture. What they don't know is that for most students, to leave out the activity is to leave out the memory!

Activities in each chunk should include those that indicate a gradual release of responsibility on the part of the teacher and an increase in responsibility on the part of the student. The motto *I do, we do, you do* depicts this relationship perfectly and will be reflected in the lesson plans that follow.

SECTION 5: BRAIN-COMPATIBLE STRATEGIES

Which Will You Use to Deliver Content?

As teachers are integrating the activities into the designated chunks, the 20 brain-compatible strategies should be reflected. A place is provided on the template for teachers to check off which strategies have been included. I am mindful of including at least one strategy for my visual learners (i.e., graphic organizers, visuals, visualization), at least one strategy for my auditory learners (i.e., brainstorming and discussion, reciprocal teaching and cooperative learning, or storytelling), at least one strategy for my tactile learners (i.e., drawing and artwork, manipulatives, or writing) and at least one strategy for my kinesthetic learners (i.e., movement, role play, or project-based learning) in every lesson. If a lesson is planned and not one strategy is used to deliver instruction, then the lesson is not brain-compatible and should be planned again.

The lessons which follow are written in an attempt to enable teachers to begin teaching in brain-compatible ways. They represent a small sample of plans regarding standards and objectives that many teachers must deliver. Once you get the hang of planning and teaching this way, the creation of subsequent plans becomes much easier. So, hop on board and enjoy the ride into brain-compatible teaching!