

Introduction

20 Instructional Strategies That Engage the Brain

SCENARIO I ■

Let me tell you a true story. Visualise the following classrooms, if you will.

Mrs Taylor teaches civics and citizenship at Mainstreet Middle School. Lecture is her primary method of delivering instruction. Sometimes, the lectures last more than half the period. Today, the objective is to teach the branches of the federal government, and as usual, she is delivering a 30-minute talk on the three branches. She has no accompanying visuals and is depending on students to retain her content simply from listening to her talk and taking notes. Some of the higher-achieving students are paying close attention because they know that much of the information will appear on the upcoming exam. Other students are maintaining eye contact with Mrs Taylor while thinking about everything except the branches of the government. Several students are engaged in conversation and are promptly reprimanded. Mrs Taylor doesn't even realise that most of the class stopped listening to her lectures during the first few days and weeks of school.

During the second half of the period, Mrs Taylor changes her strategy so she can more actively engage students. She decides to have students round-robin orally read the chapter in the textbook. She assigns sections of the chapter in the order in which students are seated with the expectation that they will take turns reading their assigned sections aloud. What she hasn't noticed is that when the first student is reading aloud, all other students who have assignments are counting down to their section and prereading so they will not sound *stupid* when it is time for them to read aloud. Because the brain can only pay conscious attention to one thing at a time, this means that these students are not paying a bit of attention to the person who is reading. However, neither is the remainder of the class. Because some students are better oral readers than others, many students are finding this activity boring and much of the attention of the class is diverted. Some are talking, others are doodling and others have their heads on their desks while still others are staring into space. After about a 20-minute period, students are told to use the remainder of the class time to answer the questions at the end of the chapter in writing and to complete for homework any questions not finished during the period. The bell rings and students run over one another as they race for the door.

Strategy 1

Brainstorming and Discussion



WHAT: DEFINING THE STRATEGY

In my book *Shouting Won't Grow Dendrites*, I created the following rhyme:

They can't talk in class.

They can't talk in the hall.

They can't talk in the canteen.

They can't talk at all!



Yet teachers are talking with one another every chance they get—in the lounge, in the canteen, in faculty meetings . . . Need I continue? Are teachers expecting behaviours of students that are unnatural to the brain and those that they themselves would fail to follow?

When people open their mouths to speak, they send more oxygen to the brain. Oxygen is essential to healthy brain development. If the brain is deprived of oxygen for three to six minutes, it is declared dead. I have been in some classrooms where students were **breathing**, but it was hard to tell. The teacher was doing all the talking while students had their heads on desks, were staring out of the window or daydreaming. Students who have opportunities to brainstorm a variety of ideas with their peers without the fear of criticism or sarcasm are those who naturally improve their comprehension and higher-order thinking skills. Consider the following cross-curricular discussion starters:

- The answer is 156. What is the question?
- Discuss the design of an experiment that tests your hypothesis.
- Let's brainstorm other endings to our story.
- If you had been Anne Frank in *The Diary of Anne Frank*, how would you have dealt with her dilemma?

Strategy 2

Drawing and Artwork



WHAT: DEFINING THE STRATEGY

For more than 70 years, researchers (Allen, 2008; Dewey, 1934) have written about the positive relationship between thinking in art and thinking across the curriculum. Yet when school budgets become tight, the art program is one of the first thought to be expendable. Educators may need to think again. Case in point, the students enrolled in the performing arts program in the school where I worked for 30 years, have consistently had some of the highest test scores of any students in the school. Yet scoring high on tests was not one of the criteria for enrolment into the performing arts program. Could something else be at work here?

A person's ability to draw and design serves them well in the real world. Artists, architects and interior designers are all paid well to use their unique abilities to transform the visual-spatial world around them. Yet in traditional classrooms, these talents are often perceived as interfering with instruction. I have seen students engaged in off-task behaviour drawing imaginative cars, tennis shoes, superheroes or celebrities of far greater interest than the boring lesson being taught at the front of the room.

Use the artistic creativity in students' brains to your cross-curricular advantage. Have them illustrate the definition of a vocabulary word in English, design a mural depicting all they remember from a previous lesson on World War Two in history, draw the procedures involved in an experiment in science or illustrate each step in a multistep word problem in mathematics. Those students who once saw no real correlation between what they would like to be in the real world (artists, sculptors, engineers) and what is happening in school may begin to rethink that relationship.





REFLECTION AND APPLICATION

How will I incorporate *games* into instruction to engage students' brains?

Standard/Objective: _____

Activity: _____

Standard/Objective: _____

Activity: _____

Standard/Objective: _____

Activity: _____

Standard/Objective: _____

Activity: _____

Standard/Objective: _____

Activity: _____

Standard/Objective: _____

Activity: _____

Standard/Objective: _____

Activity: _____

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WHO: Primary/Middle/Secondary
WHEN: During the lesson
CONTENT AREA(S): Mathematics

- Have students use manipulatives, such as Unifix cubes, tiles, blocks, rods, miniature clocks or geoboards, during mathematics instruction, to display their understanding of a particular concept taught.

WHO: Primary/Middle/Secondary
WHEN: During the lesson
CONTENT AREA(S): Science

- Design a laboratory experiment for students and allow them to follow specific directions to complete the experiment, demonstrating their understanding of a science concept being taught.

WHO: Primary
WHEN: During the lesson
CONTENT AREA(S): All

- Have students practise spelling or content-area vocabulary words in a number of tactile ways including the following: writing the words in the air, writing them in shaving cream spread on the desk (a side benefit of this activity is that you end up with a clean desk when the activity ends), forming the words with clay or other pliable materials, or using magnetic alphabet letters to build the words.

WHO: Primary/Middle/Secondary
WHEN: During the lesson
CONTENT AREA(S): History

- Bring in artefacts and have students bring in artefacts as well for them to handle and observe as you discuss a certain period of history.

WHO: Primary/Middle/Secondary
WHEN: During the lesson
CONTENT AREA(S): All

- Have students construct models that show their understanding of a concept previously taught. For example, have students construct a model of the solar system that shows the planets in order from the sun, from Mercury to Neptune, or have students construct a model of a home to scale with all of the necessary rooms and fixtures.

WHO: Primary/Middle/Secondary
WHEN: During the lesson
CONTENT AREA(S): Mathematics

- Give students pieces of project paper and ask them to place the pieces in the shape of a pizza. Some students have two pieces, some four