The ABC Tour Activities for Brain power and Collaborative learning

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Educate - Engage - Empower

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1. Quiz. How do we think?

Choose the one sentence that is more true.
Do not leave any blanks.

1a) It's fun to take risks.
b) I have fun without taking risks.
2a) I look for new ways to do old jobs.
b) When one way works well, I don't change it.
3a) I begin many jobs that I never finish.
b) I finish a job before starting a new one.
4a) I'm not very imaginative in my work.
b) I use my imagination in everything I do.
5a) I can analyse what is going to happen next.
b) I can sense what is going to happen next.

6a) I try to find the one best way to solve a problem.
b) I try to find different answers to problems.
7a) My thinking is like pictures going through my head.
b) My thinking is like words going through my head.
8a) I agree with new ideas before other people do.
b) I question new ideas more than other people do.
9a) Other people don't understand how I organize things.
b) Other people think I organize well.
10a) I have good self-discipline.
b) I usually act on my feelings.

11a) I plan time for doing my work.
b) I don't think about the time when I work.
12a) With a hard decision, I choose what I know is right.
b) With a hard decision, I choose what I feel is right.
13a) I do easy things first and important things later.
b) I do the important things first and the easy things later.
14a) Sometimes in a new situation, I have too many ideas.
b) Sometimes in a new situation, I don't have any ideas.
15a) I need a lot of change and variety in my life.
b) I have to have an orderly and well-planned life.

16a) I know I'm right, because I have good reasons.
b) I know I'm right, even without good reasons.
17a) I spread my work evenly over the time I have.
b) I prefer to do my work at the last minute.
18a) I keep everything in a particular place.
b) Where I keep things depends on what I'm doing.
19a) I have to make my own plans.
b) I can follow anyone's plans.
20a) I am a very flexible and unpredictable person.
b) I am a consistent and stable person.
21a) With a new task, I want to find my own way of doing it.
b) With a new task, I want to be told the best way to it.

To Score
Give yourself one point for each time you answered "A" for questions: 1, 2, 3, 7, 8, 9, 13, 14, 15, 19, 20, 21.

Give yourself one point for each time you answered "B" for questions: 4 ,5, 6, 10, 11, 12, 16, 17, 18.

Add all points. Totals imply:
0-4: strong left brain
5-8: moderate left brain
9-13: middle brain
14-16: moderate right brain
17-21: strong right brain
(from The Alert Scale of Cognitive Style, by Dr. Loren D. Crane, Western Michigan University, 1989)

So what?

It might affect your teaching style

Preferences of the Two Sides of the Brain

Description of the Left-Hemisphere Functions

- Constantly monitors our sequential, ongoing behaviour
- Responsible for awareness of time, sequence, details, and order
- Responsible for auditory receptive and verbal expressive strengths
- Specializes in words, logic, analytical thinking, reading, and writing
-Responsible for boundaries and knowing right from wrong
- Knows and respects rules and deadlines

Description of the Right-Hemisphere Functions

- Alerts us to novelty; tells us when someone is lying or making a joke
- Specializes in understanding the whole picture
- Specializes in music, art, visual-spatial and/or visual-motor activities
- Helps us form mental images when we read and/or converse
- Responsible for intuitive and emotional responses.
- Helps us to form and maintain relationships

The Right-Brain Teacher

- Teachers with right-brain strengths generally prefer to use hands-on activities over a lecture format.
- In concert with the right-brain preference of seeing the whole picture, these teachers incorporate more art, manipulatives, visuals, and music into their lessons.

-They tend to embrace Howard Gardner's multiple intelligences.
- They like to assign more group projects and activities, and prefer a busy, active, noisy classroom environment.

- The classroom of a strong right-brain teacher will typically have materials and books scattered all over.

The Left-Brain Teacher

- Teachers with left-brain strengths generally prefer to teach using lecture and discussion.
- To incorporate sequence, they put outlines on the board or overhead, and they like to adhere to prepared time schedules.
- They give problems to the students to solve independently.
- Teachers with left-brain preferences assign more research and writing than their right-brain peers.
- A reasonably quiet, structured classroom is preferred. The classroom tends to be clean, with items in their place.

The Right-Brain Student

- Right-brain students prefer to work in groups.
- They like to do art projects, and graphic design.
- They would prefer to design and make a mobile rather than write "another boring essay."

The Left-Brain Student

- Left-brain students prefer to work alone.
- They like to read independently and incorporate research into their homework.
- They prefer a quiet classroom without a lot of distraction.

One size fits all?

Sam, aged 11, starts to draw every time I teach a new concept or explain a piece of homework. It drives me mad.

Dorothy, his classmate, says that she feels ill every time I begin an art lesson, and asks to go see the nurse. Why doesn't she enjoy art as much as the other children do? I put so much effort into planning interesting and engaging lessons.

The Solar System

Left-brain teaching techniques

-Write an outline of the lesson on the board. Left-brainers appreciate sequence.
- Go ahead and lecture! (but not for too long! See later) These students love to listen to an expert and take notes.
- Discuss vocabulary words. Left-brainers have a large vocabulary and are interested in words.
- Make a crossword puzzle on the Solar System.
- Discuss the big concepts involved in the creation of the universe, how the solar system was formed, and so on.
- Left-brainers love to think about and discuss abstract concepts.
- Assign individual assignments so students may work alone.
- Ask the students to write a research paper on the solar system that includes both detail and conceptual analysis.
- Keep the room relatively quiet and orderly. Many left-brainers prefer not to hear other conversations when working on a stimulating project.

Think of/discuss a couple of right-brain teaching techniques for the solar system

Right-brain teaching techniques

- During the lecture, either write the main points on the board or pass out a study guide outline that students can fill in as you present orally.
- These visual clues will help right-brainers focus even though you are lecturing.
- Use PowerPoint/white board etc frequently. Since right-brainers are apt to miss the points discussed verbally, the visual pointers will help them to "see" and comprehend the points
- Have some time for group activities during the week of the solar system study.
- Right-brainers enjoy the company of others.
- Let the students create a project (eg a poster, a mobile, papier-mâché planets) instead of writing a text.

- Right-brainers often have excellent eye-hand coordination.
- Play music, eg the theme from 2001: A Space Odyssey.
- Discuss how space might feel to an astronaut.
- Right- brainers are intuitive and like to get in touch with their feelings during the day.
- Bring in charts and maps of the universe and let the students find the Milky Way.
- Maps and graphs make use of the students' strong right-brain visual-spatial skills.

Busy Work Dig a trench... from here...to... ...BEDTIME.. Too many worksheets being filled in to pass the time!

Old skills
Passivity
Note-taking
Filling in worksheets
Accurate retention
Regurgitation on demand
= MY SCHOOL DAYS

21st century skils
Curiosity
Questioning
Initiative
Cooperation
Resourcefulness
Responsibility
Imagination
Resilience (not giving up)

Curiosity Box
Three weeks before starting the topic of seasons... students start filling empty box with anything they associate with the topic. Teacher also adds things
Think of a topic you did with your class where you could have used a curiosity box

Shift from the PRODUCT to the PROCESS (the learning)
From… 'How's your work?'
'Have your finished your work?'
'Get on with your work.'
To… 'What could make this easier for you?'
'How are you learning?'
How could you have approached this differently?
If you had more resources, would it help?

In class we must build mental fitness, Stretch the learning muscle, Create a habit/disposition
Not just complete tasks and jump through hoops
'Skill' (only sometimes used or inert)

Forms of questioning
1. Quantity
2. Viewpoint
3. Forced Association
4. Reorganisation

1. List as many words as you can that might go into a story about winter.
2. What would a polar bear think about a summer's day in Spain?
3. How is autumn like a football match?
4. What would happen if the seasons disappeared?

• How many questions does the average teacher ask a year?
- a staggering: 70,000. In 15 years of teaching, one million questions!

Types of questions in UK primary schools
(based on research by Ted Wragg)
Managerial: 'Have you all got your books?' 57%
Lower order/factual recall: How many wives did Henry VIII have?' 35%
Higher order: What would have happened if the Spanish Armada had won? 8%

3 questions we can ask ourselves
Do I ask varied and searching questions or are they narrow and predictable?
Do I give students time to answer or do I cut them off too early in the interests of pace?
Do I give students clear feedback or do I leave them uncertain?

Name the colours. Do not read the words. STROOP TEST
The brain
You're an educational researcher/scientist in1989.
How do you measure how effective a learning activity has been?
FMRI Functional Magnetic Resonance Imaging
Comparing and contrasting produces great brain activity, eg Venn Diagrams
Spain Mexico
Humans Chimpanzees
iPad Laptop

Cognitive Reserve: a reason to stretch the brain as much as possible
Selective Attention Test Video ..Did you spot the gorilla?

The brain and lesson design
APK Activate Prior Knowledge
FOCUS The age-plus-or-minus-two-minutes-rule
Eg for a class of 12 year olds, activities should be changed every 10 to 14 minutes
NOT Focus focus focus
But Focus… refocus…focus…refocus (Refocus activating a different part of the brain)

Three ways to organise teaching
Competitive. Ss compete with each other for grades/marks to see who is the 'best'.
Individualistic. Ss work more or less independently, paying little attention to each other, eg Ss working alone through workbooks.
Co-operative. Teaching methods are used which require Ss to co-operate with each other as they learn.

The lesson is structured so that Ss have a vested interest in each other's learning as well as in their own, and are held accountable for what they have done or learnt.

Co-operative learning: Not just group work
Co-operative learning
Decades of research shows …
Accelerated academic achievement (especially in minority groups and low achieving students)
Development of thinking skills.
Improved race relations.
Enhanced social skills and social interaction.
Increased liking for school, class and academic content.
Co-operative learning
Groups sink or swim together. Individual Ss are held accountable by their peers. Peer pressure is used constructively to motivate Ss to learn.
Ss work interactively. Lots of peer teaching.
Ss have a goal to learn, but also a goal to help others in their group to learn. Groups soon find their weakest members and are motivated to support him/her so the group does better in the assessments.
Ss are held accountable by the teacher for both the above goals, eg with tests/quizzes.
Ss learn how to cooperate effectively by reviewing how well they worked as a group.

Approaches to Reading Comprehension
1. Underline words/phrases you know in GREEN
2. Underline words/phrases you are not sure about but can have a good guess at in ORANGE
3. Underline words/phrases you have no idea about in RED

Perspectives and Viewpoints
Different perspectives, different glasses
School uniforms, viewpoint of students, teachers, parents etc
To reduce unemployment the working week should be reduced to 25 hours.
O employers O employees
O health experts O leisure industry experts

Work in expert groups, then move groups to share knowledge

Some suggestions:

1. Aspect of a book/film
2. A topic (eg 2nd WW, all study same material)
3. A historical event
4. A scientific experiment
5. Transport
1. Different characters
2. Economic cost. Human cost. Causes. Effects.
3. Political. Economic. Religious. Social.
4. Reliability. Validity, Methods of improvement.
5. Cost issues. Environmental issues. Ease of use. Infra-structure issues

Discuss. How could you use 'different glasses' in your class?

Reciprocal Teaching: make cards for the roles, do as class activity first

1/Predictor

Think about the main ideas.
What do you think you will read next? What do you think happens next?
Jot down 3-4 predictions.
Tell your group about your predictions. See what they think might happen next.

2/Questioner

Read the text carefully
Think about the main ideas.
Jot down 3-4 'I wonder' statements or questions about the content.
Read one question to your group and ask for possible answers. Share your thoughts too.
Discuss the rest of your questions.

3/Clarifier

Read the text carefully
Think about the main ideas
Jot down any words you find confusing
Jot down any ideas you find confusing

Tell your group about your confusions. See if anyone in the group can clear them up.
Ask your group if they had any confusions. Try to clear them up

4/Summariser

Read the text carefully
Think about the main ideas
Jot down 3-4 main ideas.
Use headings to help you.
Tell your group what the text was about.
Avoid retelling all the little details.

'The times they are a-changin'. Bob Dylan
Come gather 'round people
Wherever you roam
And admit that the waters
Around you have grown
And accept it that soon
You'll be drenched to the bone
If your time to you
Is worth savin'
Then you better start swimmin'
Or you'll sink like a stone
For the times they are a-changin'.

Come writers and critics
Who prophesize with your pen
And keep your eyes wide
The chance won't come again
And don't speak too soon
For the wheel's still in spin
And there's no tellin' who
That it's namin'
For the loser now
Will be later to win
For the times they are a-changin'.

Reciprocal Teaching…

… is an incredibly successful method. It shows that comprehension is a teachable skill.

In over 50 research projects it took on average the 'weaker' learners 20 days to catch up with their peers in reading comprehension. These gains remained long after the special teaching had finished.

Generally students in the studies were astounded to discover that close reading and working together can reveal the meaning of a difficult text. Most had automatically attributed their difficulties to low ability, rather than lack of strategy.

Morphological Matrix

I think that my perfect home is a…

My perfect home

Brainstorm 2 minutes

From all the ideas, students choose their favourite elements and write about/draw their perfect home.

There's nothing at all wrong with this BUT…

… there is an alternative form of brainstorming used a lot in the film industry and advertising industry. It's BRILLIANT!

Four aspects of homes

Location – Material - Style - Special features

Top of mountain Stone Dracula's castle, A moat,

On the beach, Metal and glass, A boat, A real cinema,

Then students mix and match

e.g. A castle made of metal and glass on a private island with a helipad

That's why it's so popular in CREATIVE industries

If you have 20 ideas on each of the 4 lists, how many house combinations do you have?

One hundred and sixty thousand!!!

This technique is called…The Morphological Matrix

We did it with homes.

Think of one or two other possible topics where it would be good to use the Morphological Matrix

Co-operative, competitive, individualistic learning
in terms of academic performance, social performance and self-esteem
A lot of research has been done on this.
Co-operative learning is FAR better.
Co-operative learning is very challenging for Ss.
Co-operative learning is very popular with Ss.
Co-operative learning creates a very positive classroom climate.
(most teachers use competitive and individualistic methods)

I think school should... pull not push (ie students are dying to go to school!)

Improving cognitive skills
Cognitive conflict (creating a challenge)
Social construction (talking to each other)
Meta-cognition (learning to learn)
Aristotle asked how we are different from animals
Today we ask how we are different from machines

How do you handle team points?
- Team points often lead to competition and winners and losers in the class. How can I motivate my students without team points?
- Intergroup competition can be a great motivator. Students work really hard to beat each other.
- But there's a down side to competition too. Competition often creates more losers than winners.
- And when you have a team that consistently wins, the other teams withdraw from a game they don't think they can win.
- Another approach is to set up class goals. For example, set up a class thermometer with a class celebration when students reach a certain level.
- Team points feed into the class goal and everyone celebrates each other's successes rather than hoping for the failure of others.

How thinking has changed

20th Century

Researchers, educators, policy makers, a 2nd language is an interference, cognitively, hindered a child's academic and intellectual development.

21st Century

Interference is good, forces the brain to resolve internal conflict, giving the mind a workout that strengthens its cognitive muscles

Bilinguals have a heightened ability to monitor the environment. Switching languages requires keeping track of changes around you in the same way that we monitor our surroundings while driving.
Biingual experience influences the brain from infancy to old age
Bilingual better at solving mental puzzles
The higher the degree of bilingualism, the more resistant to the onset of dementia and other Alzheimer symptoms

The End

Main bibliography

- **Evidence Based Teaching by Geoff Petty**
- **Teaching Smarter with the Brain Focus by Sarah Armstrong**
- **Incognito by David Eagleman**
- **Nine Habits of Highly Effective Teachers by Jaquie Turnbull**
- **The First Days of School by Wong and Wong**
- **Creating Tomorrow's Schools Today by Richard Gerver**
- **Building Learning Power by Guy Craxton**

Addendum.

The General's Family painting

There are 9 people in this picture, called The General's Family, which is a work by the Mexican artist Octavio Ocampo.

There are nine different faces in this picture combining to make up the face of the General and to tell the story and the secrets of his life. Although perceived as a distinguished gentleman of solid stock, the images of his past betray his emergence from a peasant family and his impoverished beginnings. We see his mother and father, his wife and other members of his family, even his dog (masquerading as his hand) and as you study the painting you see behind the facade and read the story of a remarkable life.

The answer to the letter puzzle

o
ot
ott
ottf
ottff
ottffss
ottffss?

The answer is 'e'. The letters refer to numbers, one two three, four, five, etc

Keep learning, keep growing!!!