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BRAIN BASED LEARNING : REVOLUTIONIZING ASSESSMENT WITH INDIAN CONTEXT

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Abstract:

Brain Based Learning is a base of knowledge and skills upon which better decisions about learning process can be taken. Assessment provides information about what is already known to students. This helps teachers modify instruction and provide support. Indian Educationists should not only need to re-evaluate traditional fundamental premises about assessment, But also need to broaden traditional evaluation techniques, so that learners receive the benefit of Authentic Assessment. Accurately assessing learners is part science, part art.

In Present Paper Concept of brain based learning, Traditional approach of Assessment, Need of Revolutionizing approach of Assessment, Revolutionizing approach of Assessment with Brain Based Learning, How schools influence the brain, Mistakes in the Traditional Assessment Process, Areas that Provide Basis for Authentic Assessment, Ideas for Assessing Authentic Learning has been explained.

Keywords *: Brain Based Learning, Traditional approach of Assessment, Authentic assessment.*

Introduction:

Definitions of Brain Based Learning

Caine & Caine (2002)

Recognition of the brain codes for a meaningful learning and adjusting the teaching process in relation of these codes is called brain based learning.

Brain Based Learning is simply the engagement of strategies based on body /mind /brain research.

Traditional approach of Assessment:

To test students with quantifiable instruments that can be scored and defended expediently.

Need of Revolutionizing approach of Assessment:

Traditional Assessment often ignores the key brain principles regarding learning and memory -

Learning takes many forms that are not usually assessed

(e.g. spatial, temporal, episodic, procedural).

Memory is highly state and context dependent. The brain learns by making mistakes, not memorizing right answers.

Traditional assessment is superficial & irrelevant to some extent for the brain**.**

Brain Based Learning : Future Paradigm of Authentic assessment:

Authentic assessment rejects the perception that quality of learning can be accurately assessed simply by observation and testing means.

Authentic assessment reflects a commitment of moving beyond quantity of learning to quality of learning,

i.e., asking the tougher questions and broadening our definition of learning.

Neural networks are developed through **trial and error** the more experimentation and feedback, the better the quality of the neural networks.

i.e. To produce high-level thinking,

For students, getting authentic assessment around the way the brain naturally learns best is one of the simplest and most critical educational reform.

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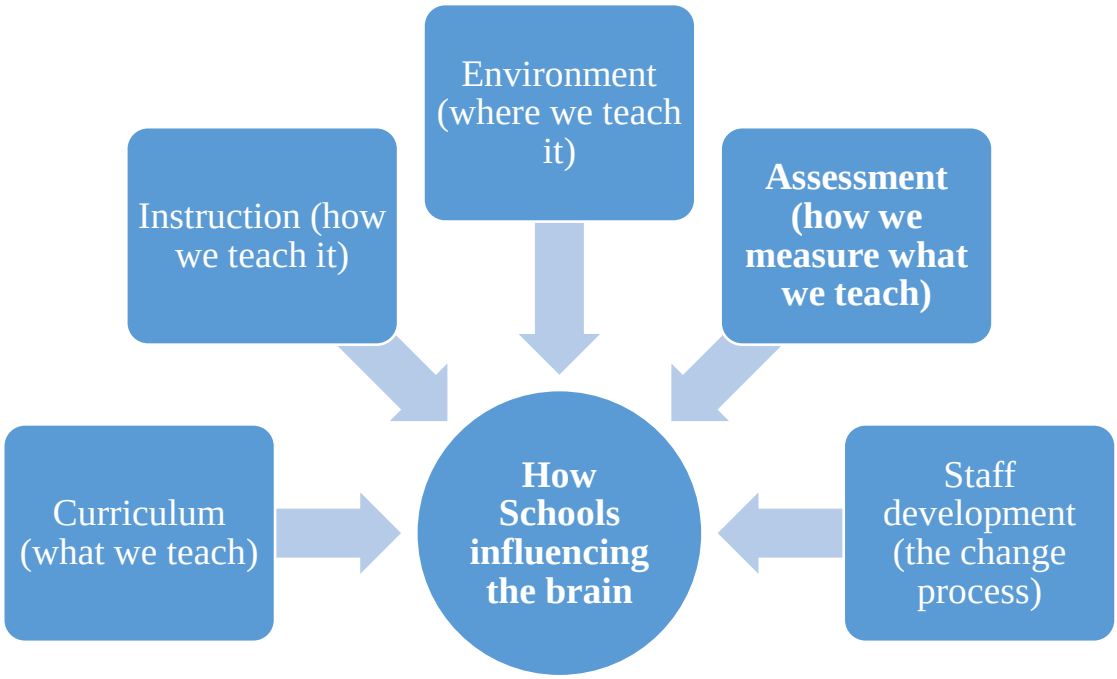
Focus on below five issues that tells how schools influence the brain.



How Schools Influence the Brain

1.Curriculum (what we teach)

2.Instruction (how we teach it)

3.Environment (where we teach it)

4.Assessment (how we measure, what we teach)

5.Staff development (the change process)

In this paper, emphasis has been given on one factor i.e., Assessment **(how we measure what we teach)**

Mistakes in the Traditional Assessment

Mistake 1: Pushing for Higher Standards without the Necessary Resources

Most teachers lack the training to deal with various kinds of special needs students in the Inclusive Classroom.

Few students in the classroom faces following challenges related to one or more of these special needs

- **Abuse and/or neglect**
  e.g., physical/sexual/emotional abuse etc
- **Mental disorders**
  e.g., anti-social disorder, anxiety disorder etc
- **Learning disorders**
  e.g., attention deficit hyperactivity disorder etc
- **Physical disabilities** e.g., mild autism, brain injury etc
- **Substance dependency** e.g., drugs and/or alcohol, food, cigarettes etc
- **Cultural Issues** e.g. refugee status, language depicts
- **Poverty Issues** e.g., nutritional deficits, learned helplessness

Mistake 2: Lockstep Testing Ignores Brain Development

Comparing one student to another is one of the most irrelevant and damaging assessment strategies ever developed.

Mistake 3: Short-Term Testing Ignores How the Brain Learns

Authentic learning takes time.

Research has clearly demonstrated that giving a test only once per year is a poor way to assess functioning of student.

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Mistake 4: Most Testing Ignores Building Block Learning

Some subjects prepare students for future learning. These so-called prep subjects important, but they are difficult to measure.

e.g. Early music exposure helps students to develop subsequent math and science skills.

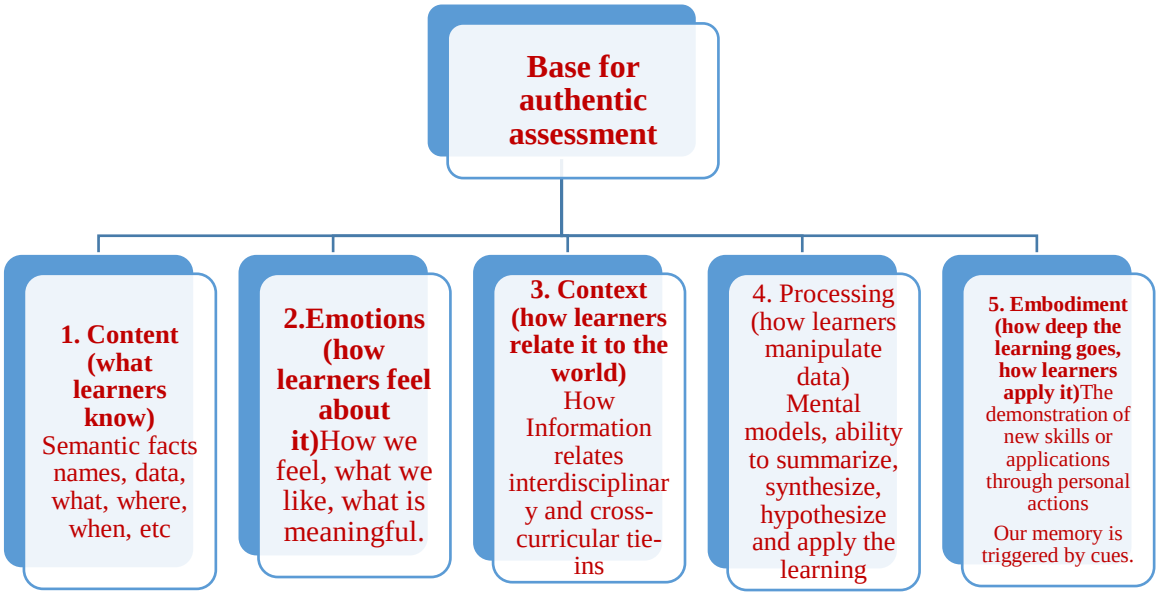
Due to this – These students are building spatial, counting, and problem-solving skills, strengthening their cardiovascular systems, lowering their stress levels, building social skills; receiving settling benefits, and experiencing a low-threat learning environment for trial-and-error learning.

Mistake 5: Most Testing Ignores Real-World Applications

Focus on developing positive learners who exhibit critical thinking ability, basic skills expertise, a love of learning, and the proficiency to work with others in a cooperative manner.

To achieve these goals, Educationist need to reduce the content that test on and update current evaluation criteria.

Five Areas that Provide a Basis for Authentic Assessment: How do we know? what we know?



These areas are inclusive of mind, body, and heart, as well as past, present, and future.

1. **Content**

   In addition to tests or quizzes- true/false, matching, or multiple-choice tests, Provide an opportunity to students to demonstrate their knowledge in their preferred learning modality.

   i.e., Learners may express what they know using multiple media such as : drawings, charts, lists, dialogues, actions, demonstrations, debates, or maps.

2. **Emotions**

   Student remembers Learning that taps into their positive emotions. i.e., the learning becomes more meaningful.

   The opportunity should be given to students to discuss about - what is personally meaningful to them and how the subjects they're studying connect to their own lives.

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3. **Context**

   In assessing students more accurately, need to consider ability to generalize or contextualize what they've learned is essential.

   e.g. Expect learners to demonstrate the depth and quality of their learning with mind maps, cross-subject debates, integrated subject demonstrations, and panel discussions.

4. **Processing**

   In the big-picture analysis, it is the cognitive skills-not the content that will be the primary measure of a student's long-term success in today's world.

5. **Embodiment**

   When students embody learning, they have merged it into their life in a meaningful way.

   Taking initiative to solve a problem or influence others with their knowledge represents student's internalization in the learning and are able to act on it in a real-life context.

Examples of projects that encourage this level of integration

Yearbooks, School Papers, School Stores, and Internships land work-study, Travel-abroad Programs, Theatre Productions, Competitive Athletics, and other Extracurricular Activities.

Ideas for Assessing Authentic Learning:

Some ideas for evaluating a student's content understanding in ways that reinforce their learning without inducing the anxiety state usually associated with testing. These strategies also give emotions a seat at the assessment table.

1. **Internet Newspaper.**

   Provide an opportunity to the students to create an online of school newspaper that covers relevant learning topics.

   i.e., writing drafts, checking facts, dividing responsibilities, editing, proofreading, presenting.

2. **Class Yearbook.**

   Create a class yearbook, and start by brainstorming.

   Include students' art-work, poems, photographs, and other contributions.

3. **Wall-Sized Mural.**

   Provide an opportunity to the students to choose a class theme related to their learning. Then map out an image portraying the subject matter on a large piece of butcher paper. As sketch gets completed, every student can participate in the painting of it. When it's completed, hang it in a visible location for all to appreciate.

   e.g. Civic projects are great for meaning making and building relevance.

4. **Storyboards.**

   Provide an opportunity to the students to start with a sequence of roughly drawn pictures that capture the action or key events of a story or topic.

   Put them up on a wall as a timeline illustration or a visual history of the subject.

5. **Student-Generated tests or quizzes.**

   Provide an opportunity to the students to establish some basic criteria, and then to decide what's important to be tested on and what's not. Have them write the questions.

6. **Multimedia Creation.**

   Provide an opportunity to the students to make a video, a Power Point Presentation (PPT), or a CD that will help others to learn the subject they are studying.

7. **Pre/Post-test Comparisons.**

   Design pre- and post-surveys that observe learners' feelings about a subject. Students can do the survey at the starting of the term and end of the term or unit and compare the differences of scores between the two surveys.

8. **Storytelling.**

   Provide an opportunity to the students to write or tell a story about the topic to relate their feelings

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OPEN ACCESS Original Research Article

and emotions through the eyes and voice of a imaginary character.

9. **Learning Logs.**

Provide an opportunity to the students to keep a freeform or structured journal about their learning. Journal writing is an effective and reflective medium for conveying emotions. Encourage learners to relate subject matter to their own lives while describing real-life applications for the content.

10. **Demonstrations/student teachers.**

Provide an opportunity to the students to demonstrate an application for the learning or enable a group experience

e.g. Teaching others - to reinforce their own learning.

Nonthreatening way to evaluate depth of learning and applications to

Real-life situations.

11. **Community Projects.**

Provide an opportunity to the students to actively demonstrate their learning with community projects to get a real-life improvement in their self-confidence and social skills.

e.g.

- Volunteering for a special event
- or becoming an activist for an important cause.
- It may be a social, ecological, or business concern.

12. **Theatrical Performance.**

Produce a drama or a skit that relates to the current unit of study.

Provide an opportunity to the students to plan the process, the content, and the final production. Emphasis should be given on having fun, while strengthening learning.

13. **Model Making.**

It measures learners' depth of understanding with respect to physical laws and scientific principles. The emphasis must to be on the process as well as the final product.

14. **Artwork/Drawing.**

Art is not only safe way for students to express themselves but also a great way to channel concentration, energy and to manage states.

As a downtime activity – It help learners subconsciously process content and integrate learning.

15. **Sculpture.**

Allow students to optimally demonstrate their learning (and learn best) with hands-on activities to influence concepts and physical objects.

e.g. Creativity and risk taking are also encouraged

16. **Music.**

Use music to represent and extend student's learning.

17. **Commercials/Short films**.

Provide an opportunity to students the to interpret their learning into a short film or a commercial.

Teacher should emphasize the process more than the final product.

e.g. Assist students from brainstorming - the topics as a group, writing the script, interviewing for the key roles to rehearsing, filming, editing.

18. **Case Study Problem.**

Give students an opportunity to design, build, and demonstrate their learning with a physical depiction of the topic or unit.

Suggest a problem related to the content they're learning-preferably one that can be solved in a variety of ways.

19. **Group Discussions.**

A task or problem and some ground rules should be given in groups of students. Provide some discussion and reflection questions after the problem gets solved.

i.e., -To help them focus on the process they used.

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20. Informal Interviews.

The ability to formulate questions, generalize answers, and synthesize the information in writing will be extremely valuable to students' future learning and work life.

21. Game Design.

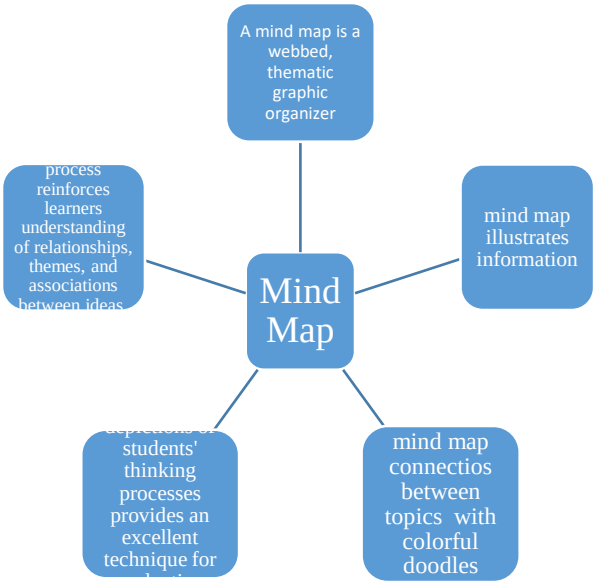
Have students incorporate current learning into a game, such as Raje Shivaji Maharaj Says, Antakshari, Concentration game - Lost my mamma's Letter – We found that letter (माझ्या आईचं पत्र हरवलं, ते मला सापडलं), Concentration games – Jump On the Soil, Jump On the pond (तळ्यात - मळ्यात), Lagori (Seven Stones), Marbles(Players use marbles to hit other marbles out of a designated area.)

22. Personal Goals.

Teacher should explain how to integrate their goals into their own ongoing self-assessment program. Encourage students to reevaluate their goals on a regular basis and to track their progress by converting goals into short-and long-term objectives.

23. Mind Mapping.

As a group or alone (or both), have students create a mind map of their current learning.



24. Debates.

Debates provide a forum for learners to defend their learning and express their knowledge. Specific norms for assessment should explained prior the actual debate so students can prepare accordingly.

25. Mini Conference.

A mini conference on a topic related to the current unit of study provides an opportunity for students to collect information from the community at large, and pull off a special event with higher-than-usual stakes involved.

26. Time Lines.

Have learners create a chronological graphic time line that reflects the historical development of the topic they're studying. This project can help to evaluate research skills as well as learners' integration of the subject with related learning.

27. Montage/Collage.

Have students create an original work of art using any combination of media, that reflects their learning. Emphasize freedom of expression and originality.

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There is no right or wrong way to approach the task.
e.g. to cut out and arrange print images that resonate with the learners and draw connections between concepts.

Conclusion:

All of these Assessment techniques respect differences in developmental stages and reflect the type of learning that is difficult to measure in the short ride.

In Assessment, the finished product is important, but focusing on issues such as problem solving, interpersonal relations, conflict resolution, accountability, group dynamics, follow-through, and self-assessment throughout the life of the project are also critical learning functions.

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