

LEADERSHIP BRAIN

by David Sousa
Corwin Press, 2003

- In the real world, the instrument of meaningful change is the classroom teacher and the unit of change is the individual school.
- Students come to school with different views on learning, and stress is now a constant for both students and staff.
- Effective leadership is a partnership with others rather than a one-person operation.
- For systemic change to succeed in schools, educational leaders need to consider the following:
 - Demonstrate true support for change through personal vision, realistic goals, willingness to take risks, and by building community support
 - Establish a clear vision and mission for the educational institution.
 - Ensure a strong role for building principals because they are in touch with all members of the school community and are more aware of the complex relationships in schools, thereby enabling them to help others in the school understand their unique role in systemic change.
 - Encourage school board members to promote change and to concern themselves with strategic planning and educational outcomes rather than managerial responsibilities.
- Respect those you want to silence
- Move toward the danger in forming new alliances.
- Manage emotionally as well as rationally.
- Fight for lost causes.
- Modern schools need leaders; there are already too many managers.
- Managers tend to do things right while leaders do the right thing. Schools today need more leaders.
- What can you achieve that will make a difference in the next year? What you set out to do needs to be meaningful, visible, and, if possible, measurable.
- Staff members will be reluctant to offer new ideas if they feel that their suggestions will be rejected by their colleagues or the administration without much thought.
- It would be naïve to ignore that both creativity and empowerment have negative aspects. Especially in schools, some creativity can be disruptive if it involves new interpretations of rules and regulations or affects time-sensitive events. Creative people may be dissatisfied with the status quo, impatient in their interactions with others, and estranged from their colleagues. Empowered people may not use their power wisely in some instances.
- Learning to control and direct mental images can lead to better mental and physical health and help the leader combat the stress, tension, and anxiety that come with positions of responsibility.
- I will be very satisfied (emotional) if I (personal) respond (present tense) to the obstinate teacher with self-control and with useful suggestions for change. (positive) The mental statement should be followed by visualizations of possible verbal patterns and conference scenarios that can offer positive suggestions for changing the teacher's behavior.
- Using PET scans, Mellet and his colleagues discovered that mental imagery stimulated not only the visual processing areas of the brain (occipital lobe) but also activated regions in the parietal and frontal lobes where higher-order thinking is carried out.

- Some attributes of creative leadership are passion for work, independence, originality, flexibility, wide range of interests, intelligence, and motivation
- The ten dimensions that help assess the openness of an organization to creativity are freedom, challenge, idea support, dynamism, risk taking, idea time, trust and openness, conflicts, humor, and debates.
- Four common mistakes that are made when trying to get members of an organization to behave creatively are the following: defining the problem incorrectly, judging ideas too quickly stopping with the first good idea, and failing to obtain adequate support change.
- Developing a Climate for Creativity and Empowerment
 - Explain which alternative scenarios are possible and encourage creative thinking. If things go wrong, avoid blaming, identify the contributing factors, and focus on alternatives for the next time.
 - Provide opportunities for staff to improve their creative skills as they relate to organizational goals
 - Ensure that all staff members, including janitors, cafeteria workers, bus drivers, and aides, are included in this training so that they recognize how their job performance contributes to the success of total organization.
 - Focus on the goals of the school organization and let the staff exercise choice and be creative in their approaches so that they can determine new ways to serve. Avoid criticizing new approaches that do not work.
 - When giving feedback at supervisory sessions, emphasize the capabilities, skills, and competence of the staff members. Act as a coach to improve performance while expressing confidence in their abilities.
 - Provide opportunities for staff members to observe each other in the workplace and to share ideas. In high school, encourage teachers to observe colleagues in different departments to get a fresh slant on teaching techniques.
 - Discourage responses that are commonplace or are given just in hopes of winning administrative approval. Practice brainstorming in staff meetings to encourage and expand on new ideas.
 - Relax rules that are there just to maintain bureaucracy. The extent of creativity and empowerment is inversely related to the number of rules and procedures used by the organization. Where possible, develop a set of organizational values (e.g. intellectual honesty, quality, and commitment) to guide behavior rather than step-by-step procedures.
 - When possible, give staff members stimulating assignments outside their routine and focus on the stimulating aspect of the job. Assignments to curriculum writing committees or accreditation review committees can be seen as deadly unless school leaders indicate that the assignment has real potential for changing what is taught or can permanently alter other aspects of the schools' operation.,
 - Delegate authority when possible. Making individuals responsible for new tasks tends to make them act responsibly.
 - Assign a staff member the role of asking the "What if" questions. It is a stimulating experience for the staff member and keeps all others alert to new possibilities and problems. Rotate the role periodically.
- For the brain to feel secure in a learning environment and successful for its lifetime, the curriculum should:
 - Stress character development, including honesty and respect for others

- Be meaningful by helping students find purpose in what they are doing and make sense of their lives
 - Make connections with the students' past and with their place as members of a future global community
 - Reflect human values that transcend sectarian and ethnic differences and politics
 - Stress the unity of the democratic traditions that bind us together while celebrating the diversity that is our strength
 - Emphasize reasonability, recognizing that what we do to gratify our individual needs may have adverse effects on others.
- Chunking occurs when working memory perceives a set of data as a single item, much as we perceive “information” as one word even though it is composed of 11 separate letters.
 - Although working memory has a functional capacity limit as to the number of chunks it can process at one time, there appears to be no limit to the number of items that can be combined into a chunk
 - We store information in memory by similarity, but we retrieve by difference.
 - Brain compatible Curriculum framework: authentic problems, simulations, projects, scenarios, service options, concept building, case studies, performances. If the curriculum contains most or all of these methods, then it already includes the essential components necessary for teachers to differentiate curriculum.
 - Teachers engage students in learning by using different sensory modalities, by varying the rate of instruction, by raising or lowering the level of complexity as needed, and by appealing to a variety of interests.
 - Reading involves recognition that speech can be broken into small sounds (phonemes) and that these segmented sounds can be represented in print (phonics).
 - The research is clear: successful reading starts with phonemic awareness of sound-to-symbol correspondences and the blending of sound-spellings until almost any unknown word can be accurately decoded.
 - Whole language is a philosophy that was developed from an analysis of how adults read and long before the development of brain imaging technologies.
 - Studies show that proficiency in learning a second language depends not on how long non-natives have been speaking the language, but on how early in life they began learning it. Schools should begin teaching second language acquisition as early as possible.
 - Most attempts at curriculum change fail because
 - The administrative and organizational structure of the school district did not change sufficiently to support the initiative
 - The teachers and other stakeholders did not have a significant role in discussing or selecting the initiative
 - There was little or no meaningful staff development to assist evaluation efforts were inadequate to sustain the initiative
 - The effective revision of curriculum requires eliminating unnecessary and redundant concepts, chunking related topics, and identifying critical attributes.
 - Categorical chunking: advantages and disadvantages, similarities and differences, structure and function, taxonomies (hierarchical levels), arrays (e.g. humans classified by learning style and personality type).
 - Endorphins stimulate the brain's limbic area, thereby increasing the likelihood that both the class situation and learning objective will be remembered.

- Negative climates can result inadvertently. (e.g. how a teacher alerts the class to an upcoming test: the unit test will be very difficult, so be sure to study hard).
- Preschool infants can deal with about two items of information at once; preadolescents can handle three to seven items, with an average of five; adolescents have a range of five to nine; the average is seven.
- Teachers should resort to chunking strategies to allow more information into working memory.
- In a learning episode, we remember best that which comes first, and remember second best that which comes last. We remember least that which comes just past the middle of the episode. Present new information at beginning, followed by practice followed by closure.
- Studies seem to support the idea that teachers are more likely to keep students focused during the lesson segments if they go off task between the segments (e.g. telling a joke or story, playing music, or just taking a quiet rest break.)
- An 80 minute period containing four 20 minute segments will often be much more productive than one continuous lesson. This is because the primacy-recency cycle restarts after each segment, resulting in much higher proportion of prime-time to down-time. To maintain student interest and engagement, only one or two of the four block segments should be teacher directed.
- Closure is the opportunity for students to mentally process what has been learned. After a learning episode is over, the brain of the student must decide what to do with the information in working memory. The two choices are either to tag it for long-term storage or delete it.
- The goal of closure is to provide the time for mental rehearsal in the hope that the student will be successful in attaching sense and meaning to the new learning. Sense and meaning are two of the major criteria that the brain uses to determine whether new information or skill should be tagged for long-term storages. Closure is one of the most effective instructional tools to enhance retention of learning.
- In closure, the teacher asks the students to mentally rehearse what they have learned and then follows up with some form of overt activity (e.g. share with another student, write it down, or demonstrate) that holds the students accountable for what they silently processed.
- Talk is a helpful memory tool because it adds another set of sensory data to the learning process. Thus, explaining what one is learning while learning is a powerful method of increasing retention. During the explanation, the brain of the learner is sorting out the new information and making connections to past experiences.
- Movement is inescapably linked to new learning
- Movement also increases the amount of oxygen in the blood, which the brain needs for fuel.
- Practice makes permanent, not perfect.
- Ensure that students practice new learning correctly from the beginning. (Guided practice)
- When practice is correct the teacher can then assign independent practice, in which the students can rehearse the skill on their own to enhance retention.
- Avoid giving students independent practiced before guided practice.
- Much testing focuses on memorizing detail, not on identifying patterns.
- Concept mapping consists of extracting details and ideas from curriculum content and plotting them visually to show relationships between and among them.
- Concept maps = graphic organizers
- Bloom's taxonomy describes a taxonomy of six levels of increasing complexity of human thought:
 - Evaluation: appraise, assess, judge
 - Synthesis: imagine, compose, design, infer

- Analysis: analyze, contrast, distinguish, deduce
- Application: practice, calculate, apply
- Comprehension: summarize, discuss, explain
- Knowledge: define, label, recall
- Complexity and difficulty describe completely different mental operations, but are often used synonymously. Complexity describes the thought process that the brain uses to deal with information. Difficulty refers to the amount of effort that the learner must expend within a level of complexity to accomplish a learning objective. When seeking to challenge students, classroom teachers are more likely to increase difficulty rather than complexity as the challenge mode.
- Analytical thinking occurs when teachers ask students to judge, compare and contrast, evaluate and critique. Creative thinking activities would have students suppose, invent, imagine, explore, and discover. Practical thinking is involved when students implement, use, apply and contextualize.
- In the differentiated classroom
 - Students are allowed to make learning choices based on their interests
 - Differences among students become the basis for lesson planning
 - Multiple materials, rather than a single text, are used
 - Assignments give students options
 - Instructional time is flexible according to the needs of the students
 - Students are assessed in multiple ways
 - Achievement is defined primarily by the growth of an individual from a pre-measured point
 - Students work with the teacher to establish individual and whole-class learning objectives.
- Positive classroom climate is important to improving student learning and retention as well as limiting discipline problems
- Novelty is an effective strategy for getting and maintaining interest. Music, humor, movement and multi-modality activities are just a few examples of novelty
- In a learning episode, we remember best that which comes first, second best that which comes last, and least that which comes just past the middle of the episode. This pattern is known as the primacy-recency effect and has important implications for how and when material is presented during a lesson and for block scheduling.
- Closure is used to provide the time for mental rehearsal in the hope that the student will be successful in attaching sense and meaning to the new learning. Sense and meaning are two of the major criteria that the brain uses to determine whether new information (or a skill) should be tagged for long-term storage.
- Imagery (or visualization) is a powerful mental function that encourages students to search long-term storage sites for appropriate images and to use them more like a movie than a photograph. Imagery is a survival skill that should become a regular part of classroom strategies as early as kindergarten.
- Getting students to stand up, move, and talk is an effective instructional strategy because it is multi-sensory and emotionally stimulating, increases student engagement and encourages socialization.
- Because practice makes permanent, teachers should avoid giving students independent practice before guided practice. If student unknowingly practice the skill incorrectly, it will be more difficult for them to relearn the correct skill later.
- Concept mapping is an effective strategy for remembering details because it requires student engagement, rehearsal, and the association of factual information to a pattern.

- Educational leaders have a responsibility to ensure that classroom instruction pushes students to high levels of thinking. The brain is designed to do this well, but it must be challenged and stimulated beyond the rote rehearsal of isolated data.
- By using differentiated curriculum and instruction, teachers can help more students of varying abilities become successful learners. Educational leaders can be key figures in making this approach happen, by becoming knowledgeable about the aspects of differentiated curriculum and instruction and by providing teachers with the staff development sessions they need to feel comfortable with its implementation.
- Assessment of student progress should include more than written standardized tests. Alternative forms of assessment, such as portfolios, performance assessment, and self-assessment are valuable ways of determining how well students can solve complex problems in a real-world context. Educational leaders should encourage these assessment options despite the strong push to rely solely on norm-referenced tests.
- Because the normal human brain loves to laugh, beginning the lesson with a humorous tale (such as a joke, pun or story) helps the learner to focus.
- When we sit for more than twenty minutes, our blood pools to our seat and in our feet. By getting up and moving, we re-circulate the bloods. Within a minute, there is about 15 percent more blood in our brain
- Have students develop a quiz game or other similar activity to test each other on their knowledge of the concepts taught.
- Teaching in the Block
- Remember the primacy-recency effect. Teaching a 90-minute episode as one continuous lesson will mean a down-time of about 35 minutes. Planning for four 20-minute learning segments reduces the down-time to about 10 minutes. This down-time can also be productive if the students are engaged in discussions about the new learning
- Be in direct control of just one segment. The brain that does the work is the brain that learns.
- Go off-task between segments. Going off-task between the lesson segments can increase the degree of focus when the students return to task.
- Eliminate the unnecessary. Everything in the curriculum is not of equal importance
- Work with colleagues
- Vary the blocks
 - Teacher talk
 - Research
 - Cooperative learning groups
 - Reading
 - Student peer coaching
 - Laboratory experiences
 - Computer work
 - Journal writing
 - Guest speakers
 - Videos/movies/slides
 - Audiotapes
 - Reflection time
 - Jigsaw combinations
 - Discussion groups
 - Role-playing/simulations

- Instructional games/puzzles
- In review, the teacher does most of the work, repeating key concepts made during the lesson and rechecking student understanding. In closure, the student does most of the work by mentally rehearsing and summarizing those concepts and deciding whether they make sense and have meaning.
- Closure can start a lesson, occur during the lesson, or take place at the end of the lesson.
- Teach a concept. Ask students to quietly review their notes and be prepared to explain what they have learned to someone else.
- Learning behavior reveals the level of complexity where processing is taking place. Teachers can inadvertently design activities that they believe are at one level of complexity that students actually accomplish at a different (usually lower) level.
- If school districts function essentially as educational systems, then the traditional approach to teacher evaluation is not very effective because it attempts to improve the system one teacher at a time. Duffy believes that changing the entire school organization will improve individual teachers much more than changing the behavior of individual teachers will improve the school.
- Although other work in the district is important, teaching and learning must come first, and all other activities in the district's schools need to serve and support this work.
- Replace classroom observations as the main evaluation tool with ways of assessing how teachers contribute to the work processes of teaching and learning, how they improve the social architecture, and how they communicate with the school community.
- Character Counts! sponsored by the Josephson Institute of Ethics. Six pillars of character: trustworthiness, respect, responsibility, fairness, caring, citizenship. (especially effective for students in grades 1-6.
- Individuals display moral courage by facing mental challenges that could harm their emotional well-being, self-esteem, or reputation.
- Denig and Qunn offer a simpler philosophical mode of just two moral approaches: justice and care.
- Three domains of ethical thought emerged that suggested ways for school leaders to process moral decisions
 - Formalism: Do what is right, no matter what. It is based on moral imperatives (Do no harm. Never tell a lie.)
 - Utilitarianism (Do what is right for this particular situation.)
 - Virtue (Do what will best help the people I care about.)
- Routinized organizations, such as schools, are highly institutionalized and are governed by policies and protocols. Dilemmas are rare or ignored. These types of organizations often attract workers who thrive on routines and therefore, are resistant to change.
- When adolescents have no spiritual compass to guide them in times of crisis, they are likely to take irrational and immoral action.
- Some of the questions students ask most frequently are:
 - Why am I so alone?
 - How do I know I'm normal?
 - Why do I feel scared and confused about becoming an adult?
 - Why do people hate others – black, white, Hispanic?
 - What is our purpose in life?
 - Why have we ruined our earth?
 - How come people kill other people?

- Right-versus-right ethical dilemmas are difficult to resolve because they involve two morally valid options in a situation where they are mutually exclusive. There are four types: truth versus loyalty, individual versus community short-term versus long-term, and justice versus mercy.
- Seven gateways to addressing the spiritual needs of students
 - Yearning for deep connection
 - Longing for Silence and solitude
 - Search for meaning and purpose
 - Hunger for joy and delight
 - Creative drive
 - Urge for transcendence
 - Need for initiation
- The major factors affecting memory retention include extent of emotional response, amount and quality of rehearsal or practice, perception of whether the learning makes sense, and degree of relevancy.
- The instructional strategies selected by the teacher have a far more powerful impact on retention of learning than the length of the vacation period.
- To transform school culture, school leaders should remember three steps: understand the present culture, articulate and model core values, and support the positive and modify the negative.
- Professional development in higher achieving schools included
 - More collaboration on decisions about staff development
 - A greater focus on students
 - A greater focus on the classroom
 - More use of effective training processes
 - More support from school leaders
- Staff development in lower achieving schools are characterized by:
 - An individualistic and haphazard approach
 - A greater emphasis on certification renewal and stipends
 - Less use of effective training strategies
 - Less support from school leaders
- Leaders should watch for signs that they may be falling into any of these three routes to failure. When they talk too much about past successes, rely too heavily on instinctive problem-solving strategies, and feel very comfortable in their positions, it is time for them to stretch into unfamiliar domains.