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MENTAL IMAGERY. A TOOL TO PROMOTE CREATIVITY IN THE FL CLASSROOM

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Recent psychological research suggests that much of our of learning includes imagery as part of the cognitive processes. Mental imagery can lead to significant improvement in learning given proper guidance. One of the most important reasons for that cognitive potential is the close relationship between mental imagery and creativity. Research points to the ability to generate and manipulate mental imagery as one of the main components of creativity; guided mental imagery training can help to awaken a sense of creativity atrophied by an educational system that focuses mainly on concepts and numbers. After discussing the relationship between mental imagery and creativity, a number of activities for the FL classroom are proposed and analyzed.

Key words: creativity, mental image, visualization, reading..

1. Introduction

Western society is influenced by a culture based on concepts and numbers where it seems more important to conceptualize than experience, measure than feel, learning a language through exercises (studial learning) rather than experiencing and savoring the learning process. Most educational institutions seem to be no exception to this situation, and in the area of FL learning the official curricula don't always allow the teachers to adapt goals and contents to their students' real needs. Many students adopt no more than a passive

role as "2nd language consumers" instead of aiming towards real interaction with the materials and activities proposed.

The conception of learning a FL that held sway in the last quarter of 20th century presupposes a great deal of learner interaction in learning; it is assumed that the learner uses his own creativity to combine the limited number of items in the language to produce an infinite number of utterances. Chomskian linguistics postulates the existence of a LAD (language acquisition device) that predisposes the language learner to create, not to repeat (against those behaviorist approaches that emphasize the concept of habit formation and automatization such as audiolingual and situational approaches). Therefore, creativity is one of the tools for mastering a language. Shouldn't we then aim to promote the role of creativity in FL learning?

2. Definition of the term

The literature on creativity shows there is great controversy on the conception of the term. Two main approaches can be underlined in current research. One that considers creativity as production; in this view, creativity depends on the special abilities of the subject and is centred on a new product. A second conception focuses on creativity as part of the human character, related to his self-realization; this approach considers the creative outcome as seeing the same as others but thinking in a different way. This second view is definitely a pre-requisite for the first one, as people need a proper attitude to be able to create. Suler (1980) also considers this attitude of capital importance for creativity: "Being openly receptive to unusual ideas and experiences and being able to control the cognitive complexities they impose are the cornerstones of creativity" Suler (1980:159).

A crucial feature of creation is the combination of different elements to produce a new product. Guttenberg took the wine press and the ink pad and he produced the printing press; in arts, music, and invention, this is the very essence of being creative, playing with the way things are organized, interrelated and generating new ideas.

The creative product implies the conversion of an existing substance into something new. Creative thought involves two different types of reasoning: convergent and divergent. Divergent reasoning is the ability to produce new ideas, while convergent reasoning adapts the new product to the personal, social and cultural environment where the creative process takes place. The former regards the novelty of the product, while the latter is related to its convenience. Csikszenmihaly (1988) considers this social side of creativity:

> ... what we call creative is never the result of individual action alone; it is the product of three main shaping forces: a set of social institutions, or field, that selects from the variations produced by individuals those that are worth preserving; a stable cultural domain that will preserve and transmit the selected new ideas or forms to the following generations; and finally the individual, who brings about some change in the domain, a change that the field will consider to be creative. [...] Creativity is a phenomenon that results from interaction between these three systems. Without a culturally defined domain of action in which innovation is possible, the person cannot even get started. And without a group of peers to evaluate and confirm the adaptiveness of the innovation, it is impossible to differentiate what is creative from what is simply statistically improbable or bizarre Csikszenmihaly (1988:34).

We need different conditions for creativity to take place. First of all, the capacity to feel **astonished**, to experiment perplexity when facing new information, a new reality or activity makes it possible to contrast the subject's background to the new information, reviewing his knowledge of the world in the light of the new information. This initial perplexity as a gnostic experience avoids judging the new information from prejudices and prefabricated conceptions, so that the subject can develop his ability to experiment and feel. This initial kidnapping of the individual's attention facilitates the following characteristic of creative attitude, that of **concentration**, and is a fertile land for intrinsic motivation and what Csikszenmihaly (1990) calls *flow state*, the ideal condition that leads the subject to what Deci (1992) considers self-determined behaviour. The immediate consequence of this state is an improvement in performance,

since there is an internal motive to awaken and drive it. Creativity considered not only as production but also as an experience requires some degree of elaboration, the effort Gardner (1985) underlines as an essential part of motivation.

The creative subject must perceive himself as the dynamic centre of the whole process, not just a passive receiver. When he realizes his role as the strong initiator of the activity, that helps him to develop the self-determined behaviour of motivated learners.

Students will not achieve this creative attitude just performing isolated exercises once in a while, we need to integrate emphasis on creativity in the classroom practice to promote that attitude to the target language and the different skills; the goal is to achieve a global attitude and level of personal conscience with creativity as part of the source of the subject's behaviour.

3. The creative process. Phases

Oech (1990) distinguishes two main steps in the creative process, the **germinal** phase and the **practical** one. There are a number of processes operating in the germinal phase. The first one is that of **motivation**, where the subject gets the necessary amount of energy to awaken, lead and sustain the desire to create. In the next step the subject searches for ideas and information to achieve a general view of the question and the desire to move on **researching** in other areas. The next step is the **manipulation** of media, materials and ideas found in the previous one, postponing the evaluation and eliminating previous ideas; at this step, the subject needs time to incubate and achieve the necessary perspective to view the problem. In the end, the **illumination**, the last part of the divergent style of thought where the solution to the problem comes out.

In the practical phase there are two different steps, that of **evaluation**, with the decisions on the convenience of the new product, and that of **action** completing the creative process.

4. The Creative Brain

Recent neurobiological and neuropsychological research has contributed a lot to clarify the working of the human brain regarding the creative process.

McLean (1990) proposes the triune brain theory, where he postulates the existence of three superimposed layers in the human brain, a pattern of brains within the brain. The first is an ancient, primitive reptilian brain. The second, and next oldest brain is the limbic, or mammalian brain and it is where rewards and punishments are registered, it is the seat of emotions, and controls the body's autonomic nervous system. Finally, over the limbic brain lies the neocortex, or *thinking cap* where all high cognitive processes are located.

This theory can be useful as an explicative metaphor; however, many researchers in the neurological field do not accept it.

Research on human brain during the 1960s produced a view of the capabilities of the two sides of the human brain: each side is specialized for different highly modes of thinking. Scientific evidence showed that the mode of the left hemisphere is verbal and analytic, while that of the right is nonverbal and global (Edwards, 1999).

Along with this dual processing in the brain, many philosophers, scientists and teachers have postulated the basic idea that there are two ways of knowing. A left brain that works step by step, and concentrates logic, language and some other cognitive areas; while the right brain is more holistic and houses musical ability, mental imagery and creativity.

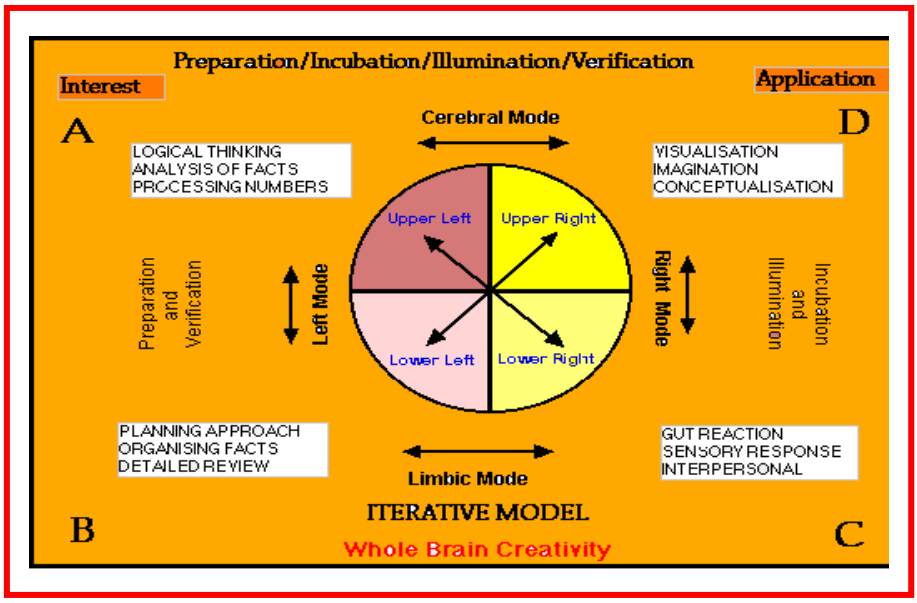
Most educational systems today still give special prominence to a style of logical thinking that guarantees success for some kind of learners but leaves aside some others with activities that focus on specific brain areas and skills. Edwards (1999) quotes R. Sperry reflecting on that fact:

> The main theme to emerge […] is that there appear to be two modes of thinking, verbal and nonverbal, represented rather separately in left and right hemispheres, respectively, and that our educational system, as well as

> science in general, tends to neglect the nonverbal form of intellect. What it comes down to is that modern society discriminates against the right hemisphere (Sperry 1973:URL).

While the latest research in the field of neuropsycology indicates that the traditional division of the brain in specialized areas is a bit simplistic, the left-right brain theory is very useful as a metaphor to account for different learning styles and it points to the usefulness of addressing the creative faculties if we are to take advantage of the full potential of the brain.

Herrmann (1988) integrated the research of McLean on the triune brain and that of Sperry on the left-right brain and in an attempt to build a model of the human brain (The Whole Brain Model) with two paired structures, the two halves of the brain and the two layers, the limbic system and the neocortex (leaving aside the primitive reptile layer). Therefore, he differentiates between left and right style of thinking and cognitive or intellectual (neocortex preference) vs. visceral and emotional (limbic preference). Herrmann's model is a metaphorical interpretation of how we think and what are our preferred ways of knowing.



(1988) Figure 1. Herrmann's whole brain model of creatitivity (Herrmann: URL).

Herrmann (1988) attaches primary importance to visualization and mental imagery in the creative process; he locates its activity in the right upper quadrant, linked to the phases of incubation and illumination.

5. Mental imagery and creativity

Stevick (1996) defines mental imagery as: "a composite that we perceive (more or less vividly) as a result of the interaction between what we have in storage and what is going on at the moment" Stevick (1996: 16).

Mental imagery usually occurs in a natural and spontaneous way; however, we can train our students to see in their mind's eye and hear in their mind's ear. This experience is driven by many processes that facilitate connection with long-term memory and the creation of a picture in short-term memory.

Research findings that show the relationship between mental imagery and creativity have notably increased in the last forty years (Austin, 1971; Forisha, 1978a,1978b; Martindale, 1972; Rothemberg and Sobel, 1980; Rothemberg, 1976, 79; Sobel and Rothemberg 1980). Schmeidler (1965) shows a significative correlation between the scores of questionnaires on the ability to create mental images and on creativity. Good imagers tended to have high scores in creativity tests, while poor imagers had either high or low scores on those tests, suggesting that mental imagery is an important way to creativity but not the only one.

Campos and González (1995) found that the ability to form mental images (evaluated through questionnaires or performance tests) had a significative incidence on creativity. Subjects with high scores on mental imagery tests usually had also high scores on tests measuring creativity. Ernest (1976) found that scores on creativity tests were correlated to mental imagery ability and with imagery control. Forisha (1983) also found correlations between mental imagery ability and creativity in women, but not in men. Campos & Pérez (1989) found that Torrance (1974) measures of creative thinking were all correlated to the scores in mental imagery tests. Forisha (1983) analyses the literature on creativity and mental imagery and concludes that the results can be interpreted from the working of brain hemispheres. Creativity requires the interaction of both hemispheres, the right, which is associated to integral thinking or the primary processes and the left, with analytic thought or secondary processes. Dual Coding Theory (Paivio, 1991) supports the idea of the activation of both hemispheres in information processing and manipulation. Mental imagery is thus at least a potentially integral part of the creative process, though the degree in which the subject relies on mental imagery for creation will depend on cognitive, personality and training factors.

6. Using mental imagery in the classroom

The use of mental imagery in the classroom can help to promote language creativity in two ways. We can train our students to relax and overcome the stressful situations by working in a calm and relaxed atmosphere and visualizing themselves performing successfully in such anxious situations. By forming compelling, positive images in the mind, a person overcomes anxiety and self-doubt (Yepson: 1987) creating fertile soil for the development of creativity. On the other hand, mental imagery activities can be integrated into the FL learning tasks to create interactive learning situations where the student himself is the center of the whole process (see *classroom activities, Myself*).

Visualization can be used in the classroom to help learners to gain confidence and competence when using the FL. One example is strategy instruction where the students are given advice not to translate the information (either aural or written) nor to worry about the words they do not know but rather just to work on building up a global mental picture in their minds. The learners can also be asked to perform activities where they have to use their mental imagery to solve problems; for example, they can be asked to provide the end of a story (or the beginning) out of their mental images. The learners can use mental imagery without focusing in the imaging process itself, for example drawing pictures of their predictions of a story content, selecting suitable images, completing partial illustrations, miming a text read aloud by the teacher or miming their interpretation of the text to other group (Tomlinson 1993; 1996a; 1997b). All these activities should involve the learners in visualizing, inferring, connecting, interpreting and evaluating processes that get normally blocked when they focus only on lower level decodifying skills (see *classroom activities*, *Story*).

Through the use of such activities learners may achieve more productive interaction with texts and appreciate and enjoy activities that would normally be considered to be beyond their linguistic proficiency. This can be achieved by encouraging an appropriate balance between concept driven and data driven which enables them to personalize, interpret and

retain what they read or listen to in ways which not only help to develop their reading and listening confidence and skills but also result in enriched comprehensible input and the development of positive attitudes towards the target language.

Mental imagery activities where students use their creativity to supplement information they get out of texts help to develop students' self-efficacy and self-esteem. Since there is no one right answer but rather many possible personal answers and since global rather than analytical response to the oral or written text is encouraged, reluctant students may feel more inclined to participate in the FL classroom.

7. Classroom activities

Myself	
Level	Low intermediate and above
Time	55' minutes
Purpose	Provide practice in generating and manipulating mental images. Give the students the chance to express their own feelings out of their own imagery. Stimulate writing skills.
Materials	Pictures of the students.

Procedure	Invite the students to close their eyes, then ask them to answer the following questions in their minds: "How do you feel inside? What do you look like in your minds eye?" Ask the students to open their eyes gradually and look at their pictures. Who do you see? How do you feel about who you see? Encourage the students to include some of their written responses on the same paper as their portrait or an attached piece of paper. These thoughts and feelings are an integral part of the portrait. Ask them to answer the following questions: What do you look like? How would you describe or illustrate the colour and texture of your hair, skin, facial features and body? How do you feel about what you look like and where you are from? What or who makes you feel good and proud? What or who makes you feel less than good, embarrassed or even ashamed? What would need to be different or change for you to feel positive about yourself in this way? Have them share their portraits with their partners.

As learners gain confidence and competence in the L2, they can be given tasks that are designed to induce visualisation and use the target language at the same time. At lower levels L2 learners will only transfer and develop higher level fundaments if they are encouraged to use the L2 experientially. As visualisation is a fundament that facilitates the use of other high level fundaments (e.g. connecting, personalising, inferencing, interpreting) and is in turn facilitated by them, it is important that visualisation is not imposed in isolation but is rather integrated in activities which promote its use.

Story	
Level	Intermediate and above
Time	45 to 50 minutes
Purpose	Stimulate students' creativity and provide practice in writing skills. Foster the ability to change from the visual to the verbal code of information processing. Provide practice in generating mental images and working with mental imagery.
Materials	A short story. Crayons.

Procedure	Write the title of the story on the blackboard, then ask the students to imagine the plot of the story they are about to read. Have the students read the story trying to see the information as a film in their minds. Ask the students to draw the different characters as they read. Ask them questions that promote their ability to infer from the text. F.i.: "Draw what the character wants to do right now" Have the students check their initial predictions on the content of the story. As a final post-reading project they can design the front cover of the storybook, design a poster to show the main events in the story or they can be asked to provide a different ending for the story (verbally or graphically).

The ultimate aim of visualization activities is to try to get learners to use the fundament of visualization without them being aware that they are doing so. One way of doing this is to involve them in reading activities in which use of visualization would help them to be successful.

As narrative is considered to be "the primary scheme by means of which human existence is rendered meaningful" (Polinghorne, 1988: 11), as when "people tell stories, anecdotes and other kinds of narrative, they organise data into special patterns which represent and explain experience" (Cortazzi, 1994: 157) it would make sense if most of a learner's early reading experience is of narrative. It would also make sense if much of this experience was also of narratives in which the content and the narrative structure was culturally familiar (e.g. L2 versions of L1 stories and films; L2 stories written by L1 speakers) and of narratives with universal themes and plots (e.g. myths, fables, fairy stories, versions of world popular films).

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