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A study of right and left brain dominant students at IB&M with respect to their gender, age and educational background

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Abstract

Managers all over the world each day combat the challenges associated with Managing the workforce. In order to unravel their truest potential managers have to understand them and motivate or sometimes above that i.e. to ignite the spark that gives the momentum to their capabilities that make them productive and give them an everlasting happiness. Management is termed as Right brain activity. It involves dealing with the human mind and emotions which are very complex and variable unlike the scientific method which we perceive management to be. In order to check the co-relation of the right and left brain people research was carried out. This study was conducted with approximately 50 Business students with a survey, as well as a comprehensive review and analysis of literature concerning the brain. This study would help the instructors to understand the fact Management is not a science and based on the number of left or right Brain students the current teaching methodology of Business students can either be revised or transformed altogether.
Keywords: Management; Right Brain; Left Brain; Emotional Intelligence.

1. Introduction

The evolution of life from humble origins to the most complex and superior of forms i.e. Humans is one of the aspect of development on Earth but in fact it is the most important because all the advancements that have been made since the advent of times is attributed to this superior being and especially due to the implausible mind capable of doing miracles.

Over the years as technology and knowledge has boosted many folds, the life in itself has become easier but still when we see our inability to understand the convoluted human psychology compared to what wonders we have done in the world our whole existence becomes a question mark. As it is said in the mystic world that who has not understood himself has not understood anything. Following this anecdote here is a meager effort to help us understand the intricate labyrinth that is the storehouse of colossal wonders –The human Mind.

1.2 What is meant by being Right or left Brain person?

People are termed as being Left brain or right Brain. It means that it is the intrinsic property of the Human species that it uses its either side more than the other [1]. Left Brain people are characterized as being highly logical and methodical, who do everything in a mathematical way. Left Brain is more sensitive towards analyzing fine details. [2] Left Brain people follow a certain pattern and need a specific formula to do their work either devised by themselves or from the surrounding.[3] The right Brain people are the people on the disruptive side. They are People who go beyond the reality to make the impossible possible. They think unreasonably and actually make wonders happen. Innovations are dedicated to such people. [4-6]

1.2 Modern Management Concept and Beyond

Management has evolved from the Age of Hunter Gathers, Agriculture, and Industrial to the age of Knowledge and Information in we are living today [7]. Our age has changed but management has not progressed from the last age i.e. Industrial age which has lead to mayhem and confusion.[8,9] We still believe that key to successful management lies in the Principles of Henry Foil 1916 but management is just more than a process of planning,

Organizing, leading and controlling. In reality managers do more than this left brain activity. Right brain activity calls for more strategic decisions and working unlike a typical process or mathematical model.

The future is the age of Wisdom [10]. This age requires more imaginative and creative solution of problems. Organizations would be more open and flexible comprising of a workforce that is very intelligent, productive and highly motivated sharing a common vision [11,12]. Such workforce does not need to be macro managed but requires a management that is not influenced by power or authority but is based on relationships, initiation, meaningfulness and moral integrity and in this regard the knowledge of right and left brain people would be very useful.[13,14]

1.3 Literature Review

Many people thought of working out the myth of right brain and left brain functionality, the way people used their brain varied depending upon age and gender. Steve Bielefedlt conducted such an experiment in 2006. He included data collected during 2006 from a sample of students 79 of a total of 447 enrolled students in the Marian Adult Accelerated Program (MAAP) undergraduate and graduate levels of Marian College. Steve Bielefedlt [1] stated that Data was collected using a written questionnaire, as well as a comprehensive review and analysis of literature concerning the brain, brain-based learning, and certain learning styles.

Steve Bielefedlt [1] finds that the **MAAP** student population surveyed represents 63.3 percent female compared to 36.7 percent male with the majority (43.0 percent) of respondents being in the 40-49 year old age category. Steve Bielefeldt [1] compares to an overall **MAAP** student population 66.6 percent female and 33.4 male with the largest population in the 40-49 year old bracket (40.3 percent).

Steve Bielefedlt [1] said that **MAAP** students responding to the questionnaire it is interesting to note that as the population ages, the right-side domination tends to dissipate. Steve Bielefedlt (2006) said by removing the extremes (< 19 years old and > 60 years old), the distribution is 69 percent for the 20-29 year old age group, to 64 percent (30-39 years old), to 56 percent (40-49 years old), to 39 percent (50-59 years old).

Steve Bielefedlt [1] finds the female respondents remained stable, ranging from 50 percent (50-59 years old) to 67 percent (30-39 years old), the male population accounted for the downward trend. The male distribution is 100 percent (20-29 years old), to 60 percent (30-39 years old), to 56 percent (40-49 years old), to 20 percent (50-59 years old). Steve Bielefedlt [1] Findings to the questionnaire showed that 16.5 percent of respondents were linked in some way to the auditory learning style, while 69.6 percent were linked to the visual learning style and 26.6 percent were linked to the kinesthetic learning style.

Steve Bielefedlt [1] finds that approximately 10 percent of the overall population was identified as kinesthetic learners, whereas visual learners make up around 60 percent and auditory learners around 30 percent. Steve Bielefedlt [1] Marian Adult Accelerated population fairly represents these numbers, they do not reflect the order The Marian group has the highest ratings in the visual category,

While the auditory and kinesthetic groups are 'flip-flopped and several students maintained a dual-dominant learning style.

We are going to conduct an experiment for IB&M now so that teachers can adopt an appropriate teaching style knowing how their students will learn more effectively.

Damon Cary [15] carried a research regarding the brain dominance in choosing their career based on financial incentives or career interests. A job satisfaction survey was also carried out. This hypothesis was rejected after the research. The results of the study showed that brain dominance had no impact on choice of career selection. It was in fact job satisfaction that was the driving force behind pursuit of career.

In A left brain, Right Brain conversation by McKenzi and Watson at university of Sydney focused on the importance of reshaping the curriculum based on the brain dominance. The author explores their own University curriculum to answer the question of authentic learning curriculum and the basic human striving for understanding-perhaps wisdom. McKenzi and Watson concluded that curricula needs to be designed to bring the multi-disciplinarinality of the real world world's context of using the learning experience and brain dominance helps to harness this challenge.[16]

Zhang and Probst [17] argued that despite Engineering being a highly Left Brain Profession, the Right Brain dominant students should be encouraged to opt this profession as well. They said that if we ignore the brain dominance phenomena, even the Left Brain people will have a lot of difficulty in subject. Zhang and Probst [17] concluded their search by saying right brain dominant students can take advantage of their graphic capability to imagine the solution of differential equations. On the other hand, the left brain dominant students can use their strong logic functionality to reduce a nonlinear problem to multiple linear approximations.

Furthermore, in this approach students can also have the opportunity to develop the capability of their disadvantaged hemisphere, while keeping their dominant one fully engaged.

Ana and Said [18] stated in their research paper Student Learning Styles Adaptation Method Based on Teaching Strategies and Electronic Media that learning process has shown that students tend to learn in different ways and that they prefer to use different teaching resources as well. Many researchers agree on the fact that learning materials shouldn't just reflect of the teacher's style, but should be designed for all kinds of students and all kind of learning styles. Ana and Said [18] said Humans have different ways of learning. Some can assimilate in a better way the knowledge received Visually, Auditory or through a certain sense.

Ana and Said [18] analyze very few researchers give an idea of which appropriate combinations of electronic media and learning styles are more effective than others. An electronic media can be used in different ways to implement different teaching strategies which can be matched with different learning styles. The objective of their study was the creation of teaching methods and environments that use the vast resources offered by IT in such a way to adapt teaching material and strategies to the learner's skills and learning style. They use Felder & Silverman (1988) model for defining learning style, together with empirically built adaptation taxonomy for matching e-media with combinations of teaching strategies and learning styles. This taxonomy is based on the four learning styles dimensions. Each dimension is defined as a combination of four values according to the learning styles dimension. In this case, there are 16 learning styles combinations.

Ana and Said [18] applied this method on The Instituto Tecnológico Autónomo de México´s (ITAM) Algorithms and Programs course (ID course -COM11101) for first year engineering students was used to test the validity of the method. Ana and Said [18] founds that in the Perception dimension, students are more sensible than intuitive. The most significant difference is in the Entry Channel dimension, where 85% students came out to be visual and only 15% were verbal. As a result, the predominant combination for each dimension style of the class is {(Sensitive/Visual/Active/Sequential)}.

Ana and Said [18] concluded that the teacher can develop different versions of the teaching material so that to fit to the learning styles of the largest number of students. It might happen that a teacher does not know the students' learning styles. Furthermore, he/she might not know either the appropriate educational strategies or instructional material for their courses.

2. Methodology

A. Problem Statement

People generally tend to use one side of their brain more than the other. Ornstein [19] did the study to show the fact that the western cultures make use of the left hemisphere and neglect the right hemisphere through their emphasis on language and logical thinking, while eastern cultures, the right hemisphere is more exercised through their religious, languages, intuition and mysticism. As the above study showed that cultures have an impact on people using their left/Right brain we want to see whether gender, age or educational background as some impact on brain using a specific brain hemisphere. This can help us in the Management more because our brain works two ways but the educational system follows a single methodical and logical way which directly affects our performance when people begin to work as Managers [20].

B. Purpose of the Study:

The purpose of this study was to research the concept of brain lateralization in Business Students. This study includes data collected during 2012 from approximately 45 adult learners from the Institute of Business and Management, (IB&M) University of Engineering and Technology (UET) Lahore. The database for this investigation was the result of a written questionnaire that was developed after studying the Left/ Right Brain test questions provided on the internet.

The findings of the study will be used to encourage instructors and the Management at IB&M UET to adopt the teaching methodology that would improve the learning of students that would help them becomes better managers.

C. Questions Guiding the Study:

1. Do students at IB&M have different choices when it comes to choosing their hemispheric mode? (e.g. left, right or both)
2. *Is there any correlation between gender, age and educational background on the no. of people using their left or right brain more?*

D. Limitations of the Study

1. The survey was limited to 50 students only. The students were regular students only with little or no experience before.
2. Statistical Reliability of the Questionnaire was not formally established. The Questionnaire was a result of the brain storming session with all team members and from viewing the questions that appeared on the internet regarding Brain tests.
3. The age interval was very small because the target group (MBA Students) age laid in this group. Not a very large diversity was present.

3. Results

A. Gender

On the basis of the Questionnaire filled the following results were yielded. As the Table 1 shows

Table 1: The No. of Right/ Left Brain Students based on gender

Gender	No. Of Right Brain People	No. Of Left Brain People	No. Of Balanced People
Males	15	8	0
Females	10	10	3

That the probability of being Right brain is greater in Males is greater than Females. In addition to this it is clearly visible from Table 1 the trend of either brain dominance in females is half and half and also a balance is seen while the balance in males is absent.

B. Education

Table No.2 summarizes the number of Right and left Brain students on the basis of their educational Years. In this case we see that the no. of Right Brain Males and Females having 14 or 16 years education is nearly equal but when it comes to the Left Brain we see a drastic change in the 16 years category. The no. of Left Brain males with 16 year education is 5 while for females its 14. Almost double the no. of males. At the same time the balanced females also had an education of 16 years.

Table 2: The No. of Right/ Left Brain Students based 0n Education

Education (Years)	Males		Females		
	Right Brain	Left Brain	Right Brain	Left Brain	Balanced Brain
14	6	4	5	4	1
16	8	5	7	14	2

C. Age

The age factor was also analyzed to determine the impact on Brain Dominance. The population age had very little diversity because the target population of students lies between ages of 19 to 24 years.

Table 3: The No. of Right/ Left Brain Students based on Age

Age Group (Years)	Males		Females		
	Right Brain	Left Brain	Right Brain	Left Brain	Balanced Brain
19	1	1	1	0	0
20	6	3	3	5	0
21	4	2	3	5	0
22	3	1	2	6	0
23	0	0	1	3	2
24	1	1	1	0	1

From the Table 3 it is clear that the most right no. of males lie in the 20 year age group. Males of all the ages show a more inclination towards Right Brain side compared to the Left side. When it comes to the Females a decreasing trend in the Right Brain dominance and an increasing trend of being Left Brain is seen as age increases. Females at the age of 20 are Right Brain and turn most logical in the 22nd year. Beyond this the trend towards a balance is seen.

4. Conclusions

The following conclusions are deduced from the study:

- Students in IB&M have a different choice when it comes to choice of brain lateralization.
- For IB&M most of the Males Students were Right Brain.
- Overall students are more Right Brain as they are young.
- As the Age increases females tend to become more logical (Left Brain)
- The students having 14 year education are more Right Brain and tend to be become logical as they get 16 years of education. This is particularly true for females. Males more or less remained Right Brain.

5. Recommendations

Based on the study conducted for the IB&M students we recommend the following changes:

- The majority of students in IB&M are Right Brain so we recommend that curricula should be such that supports creativity and innovation.
- Introduce change, discovery, and challenge into the learning environment.
- Such Initiatives should be taken to support the involvement of both brain hemispheres

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