In The Name of God

SHEIKHBAHAEE UNIVERSITY

SCHOOL OF FOREIGN LANGUAGES

THE INTERRELATION BETWEEN IRANIAN EFL LEARNERS READING COMPREHENSION, BLOOD GROUPS AND BRAIN QUADRANTS

A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF MASTER OF ARTS IN TEACHING ENGLISH AS A FOREIGN LANGUAGE

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Table of content

Chapter One. Introduction

Chapter Two. Literature Review

Chapter Three. Methodology

Chapter Four. Results

Chapter Five. Discussion and Conclusion

List of Tables

List of Figures

Abstract

This study aimed at determining the relationship of brain quadrants with reading comprehension skill among Iranian EFL students. Moreover, the study was trying to show the relationship between brain quadrants and blood group. The study was based on Herrmann's Whole Brain Model. 250 University students studying at Islamic Azad University of Mashhad were randomly selected for the purpose of this study. Herrmann's Whole Brain Dominance questionnaire and a standard TOEFL reading comprehension test were used in the study in order to measure students' brain quadrant preference and reading comprehension ability. The results of statistical analysis indicated that students who were D quadrant preference performed significantly better (P < .05) than the other learners on reading comprehension test. Moreover, the results of the statistical analysis revealed that there was a relationship between blood group and use of specific brain quadrants.

Key Words: Reading comprehension, EFL learners, brain quadrants, Blood Group, Herrmann's Whole Brain Model

Chapter One

Introduction

1. Introduction

Learning a foreign language depends on a number of biological, social, and educational factors, such as aptitude for languages, attitude, cognitive style, learning strategies, neurological factors, personality, previous experiences with language learning, proficiency in the native language, sense modality preference, sex, learning and thinking styles.

The idea of learning style comes from general psychology. Learning style refers to the characteristic ways in which individuals are oriented to problem solving (Ellis, 2008).

Keefe (1979) defines learning style as the characteristic cognitive, affective and psychological behaviors that serve as relatively stable indicators of how learners perceive, interact and respond to the learning environments. Learning styles, therefore, reflect the totality of psychological functioning .Learning styles can be distinguished from abilities (such as language aptitude) in that they constitute preferences that orient a learner to how they approach the learning task rather than capacities that determine how well they learn (Ellis, 2008).

William Edward "Ned" Herrmann is known for his research in learning styles and Whole Brain Methods. He spent the last 20 years dedicating his life to applying brain dominance theory to teaching, learning, increasing self-understanding and enhancing creative thinking capabilities on both an individual and corporate level. Herrmann's contribution to the application of brain dominance brought him worldwide recognition.

Herrmann classified learning styles based on functions controlled by each chamber of the brain (Lumsdain, 1999). Herrmann (1999) called this classification as a Whole Brain Model. Four divisions have been identified within the chamber of the brain, each chamber with a certain learning style as in the following:

A. The upper left quadrant (QA) represents external learning, which is logical, rational, realistic, analytical, critical, deducting and verbal. Learners falling within this category learn through traditional methods of the textbook and the teacher (Herrmann, 1999).

B. The lower left quadrant (QB) represents procedural learning, in which learning is characterized as sequential, structured, planned, regulated, and individualized (Herrmann, 1999)

C. The lower right quadrant (QC) describes the interactive learning in which interrelations and kinesthetic work are emphasized. Learners of this pattern are sensory, cooperative, emotional and explorative. The learning context is created by experience, feedback, listening, and shared thinking (Herrmann, 1999).

D. The upper right quadrant (QD) represents the internal learning, which focuses on comprehensive, creative, imaginative, and inductive ways of learning (Herrmann, 1999).

The learning context is characterized by insightfulness, idea construction and intuitive concept apprehension (Herrmann, 1999).

Herrmann (1995) also asserts that the whole brain model determines a person's preference for thinking in four different modes that are based on the task specialized functioning of the physical brain. According to Herrmann (1995), preference for the A quadrant(left cerebral mode) means that a person favors activities that involve logical, analytical and factual information combined

with an ability to perceive, verbalize and express information precisely. Preference for the B quadrant (left mode) is similar to A quadrant thinking preference. Individuals with a B quadrant preference favor organized, sequential, planned and detailed information. They like to keep things as they are. A preference for the C quadrant (right limbic mode) indicates a preference for information that is interpersonal, and involves emotion and feeling. Preference for the D quadrant (right cerebral mode) is mainly described by creative, imaginative, conceptual and inductive ways of thinking.

1.1 Statement of the Problem

Reading comprehension is what allows the reader to interact with the text in a meaningful way. Reading comprehension is the bridge from passive reading to active reading -- from letters and words to characters and contexts. It is the crucial link to effective reading -- a strong factor in our educational and professional lives. For many, reading comprehension also unlocks the door to a lifetime of reading recreation and enjoyment. In addition, this skill is mostly emphasized in educational settings. However, reading comprehension needs to be learned by new ways and techniques. There are still some tips and limitations on teaching reading. One way that can help teachers to improve learners' comprehension ability is through understanding specific brain quadrant which performs better at reading comprehension.

In addition, while scientific study has shown that people of specific blood types may be more prone to certain illnesses, very few studies have been carried out on the correlation between blood type and personality traits. One such study, by the Japanese psychologists, examined blood

samples of a large population in Japan. Japanese psychologist (Takeji, 1931) examined the relationship of blood groups and personality traits. He categorized different blood groups under different personality traits. Based on the Japanese study, the researcher decided to examine the relationship of blood groups and brain quadrants. The reason behind selecting the brain quadrants for the purpose of study is neurolinguistic factors which might affect the learning of a second language.

Furthermore, most teachers are not aware of their students' brain quadrants preferences in the classroom. This unawareness may create some problems for both teachers and learners. This would lead to selecting inappropriate teaching techniques for teaching foreign languages.

1.2 The aim of the study

The purpose of the study is to determine the relationship of specific quadrant dominance with reading comprehension. Moreover, the study is trying to show the relationship of specific quadrant dominance and blood groups.

1.3 Significance of study

There are some studies on Herrmann's Whole Brain Model. For example, Shelnutt (1996) conducted a study to identify learning styles in a group of engineering students. In addition, Abdullah, Balasingam, Krishnan, & Fong (2002) conducted a study to determine which thinking modes were most or least preferable among a group of students from the Curtin University of Technology Sarawak Campus of Malaysia, East Malaysia from University of North Carolina.

Furthermore, Nawfal (2008) studied the psychometric characteristics of Herrmann's Brain Dominance instrument and explored the brain dominance mode among university college students.

However, very few research studies have embarked on investigating the relationship between brain quadrants and reading comprehension ability. This condition also exists for the relationship between the blood group and brain quadrants.

Moreover, knowledge obtained through the findings of this research will shed new light on new ways of teaching reading comprehension skill. When teachers know about the relationship between reading comprehension skill and kind of thinking style, they will apply many proper ways to strengthen reading comprehension skill in the language classroom.

Furthermore, the relationship between the blood groups and thinking styles is intended in this study. Nowadays, many institutions test students' blood groups for registration. There may be variety of blood groups among students in the classroom. This kind of study would help teachers know students thinking styles based on the blood group information.

1.4 Research questions

1. To what extent is students' ability of reading comprehension related to specific quadrant dominance?

2. What is the relationship between blood group and specific quadrant dominance?

1.5Definition of key terms

1.5.1 Blood Groups

There are four basic types of blood—A, B, AB, and O—each with a positive and negative sub-type. O positive is the most common type. However, AB negative is the least common. The positive and negative classifications indicate the presence or absence of Rhesus antigens (Mifflin, 1995).

1.5.2 Brain Quadrants

The definition of brain quadrants in this study is based on Herrmann's Whole Brain Model. He defines a brain as four quadrants with special characteristics (Herrmann, 1999). He divides a brain into four quadrants as follow:

Quadrant A: analytical, mathematical, technical and problem solving

Quadrant B: controlled, conservative, planned and organized

Quadrant C: interpersonal, emotional, musical and spiritual

Quadrant D: imaginative, creative, holistic and artistic (Herrmann. 1999).

Chapter Two

Literature Review

2. **Overview**

In this chapter learning styles will be defined and the different types of learning style models will be discussed. A review will be also given on Herrmann's Whole Brain Model. Finally, related studies will be given on brain quadrants, reading comprehension and blood groups will be elaborated on.

2.1 Problems of second language learning

The field of second language acquisition has historically blamed language learning failure on a number of factors. For instance, anxiety in the foreign language classroom (anxiety about making mistakes in grammar and pronunciation, about understanding the teacher, about remembering vocabulary) has been prominent as a purported cause of the failure (Reid, 2005; Brown, 2008). Among other causes cited in the literature has been lack of effort, lack of motivation, poor language learning habits, variety of learning style and mismatch between learning styles and teaching styles (Robin, 1977; Herrmann, 2002).

Some problems arise when a student struggles in school because a teacher's teaching style conflicts with the student's learning style (Heard, 1999). Due to the many learning style combinations found in our students and the miscommunication that occurs during information delivery, teachers have to re-teach a topic because information delivery conflicts with how students received and processed the information (Tileston, 2005).

Although every human being has a specific learning style, teachers often believe the way they learned in school is the best way to teach because of good results previously experienced, and

feel that students should have the same positive outcome. However, research did show that the teaching and learning style of a teacher often did not match the learning style needs of students (Herrmann, 1995). This led to under-achievement in students. The physical learning environment (like lighting levels, seating, furniture arrangement, temperature, etc.) and emotional environment were essential factors in a child's day, which was upset by situations such as conversations cut short in between classes, an overcrowded classroom, unreasonable rules, or impossible deadlines. All of these caused a threatened feeling and significantly reduced a student's ability to learn a second language (Herrmann, 2002).

2.2 Definition of learning styles

 "A learning style is the unique and preferred way in which individuals thinks and learns, in other words, the way in which students take in and process information" (Tileston, 2005, p. 15). Anthony Gregorc (1985) describes learning styles as "behaviors, characteristics, and mannerisms "that are symptoms of mental qualities used to gather information from the environment (p. 179).

David Kolb (2000) defines leaning styles as follows:

 "Learning styles are conceived not as fixed personality traits but as possibility processing structures resulting from unique individual programming of the basic but flexible structure of human learning. These possibility-processing structures are best thought of as adaptive states or orientations that achieve stability through consistent patterns of transaction with the world" (p. 95).

2.3 The importance of learning styles

An understanding of learning styles is crucial in providing equitable opportunities for learning. "This is especially significant now when society places strong emphasis on the equality of people regardless of their gender, race, culture and abilities" (Nilsson, 1998, p.63). It is important for a teacher to understand the differences in the way that people think and to be aware of his/her own preferred style with its strengths and weaknesses (Fairhurst, 1995; Herrmann, 2002).Without his knowledge or awareness it can too easily be taken for granted that the way in which a task or problem is approached is the "correct" way and that all other approaches are incorrect. "The learners whose learning styles are different to that of the teacher are then deprived of their preferred and most effective means of learning" (Pressman& Dublin, 1995, p.10).

When teachers limit their teaching to one preferred style, the majority of their learners will not be involved in the learning process. When teaching methods are adapted to accommodate learning styles, learners become actively involved and they begin to ask for that which they require in order to learn more effectively. Schools will become more unbiased and impartial when they begin to accommodate   number of learning styles instead of rewarding the same type of learner all the time (Pressman & Dublin, 1995).

In addition, it has been shown that learners that are exposed to a teaching style that matches their learning style achieve higher marks on tests, have a better factual knowledge, possess a more positive attitude and fewer disciplinary problems, and are more competent (Dunn & Griggs, 1995). When mismatching of style occurs for a lengthy period of time or when it becomes a chronic occurrence, stress could result. If the mismatching of style is not recognized