

Brain Dominance Quadrants and Reflective Teaching among ELT Teachers: A Relationship Study

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Abstract

The present study investigated the relationship between Iranian English language teachers' reflectivity and their brain dominant quadrants. To this end, 102 Iranian EFL teachers at several language institutes and universities (i.e., Bojnord, Ghochan, Gonabad, Kashmar, Shandiz, Neyshaboor, & Mashhad) in Iran participated in this study. The Brain Dominance Survey which was developed by Ashraf, Tabatabaee Yazdi, & Kafi was employed to categorize participants as right and left brain dominant, and English Language Teaching Reflection Inventory developed by Akbari, Behzadpoor, & Dadvand was administered to measure teacher reflectivity. Then the data was analyzed using hierarchical multiple regression analysis to investigate the extent to which teachers' brain dominant quadrants might have predictive power in their reflective teaching practices. Results indicated a statistically positive significant correlation with teachers who used their A quadrant and teaching reflectiveness whilst teachers with C quadrant dominance had a negative significant correlation with being reflective. Moreover, regression analyses revealed that there is no significant relationship between reflectivity and teachers' B and D brain quadrants dominance. To teach more reflectively, teachers need to better understand their brain differences and how it can affect the teaching strategies. All teachers should find ways to combine teaching activities that involve both left and right of their brain, and not only practice six underlying factors of reflection in their teaching but also employ reflective procedures in order to develop their reflective practices.

Keywords: brain dominance, reflective teaching, EFL teachers

1. Introduction

Paradigm of reflective teaching prevails in teacher education or training all over the world. Reflective practice in teacher education programs is a way to develop teachers' teaching practice (Jerez Rodríguez, 2008). Teachers use reflective teaching strategies to improve their teaching quality (Bolton, 2010). Reflective teachers critically evaluate their teaching practices, and then come up with some thoughts that develop their teaching performance, improve students' language learning, and put those thoughts into action. This is known as "the cycle of appreciation, action, and re-appreciation" (Shön, 1983). Indeed, reflection is a purposeful activity that needs critical thinking and looks for solutions about the problems occurred during teaching and learning process (Loughran, 2005).

Accordingly to increase the efficiency of teaching and enhance the quality of teaching through reflection, the EFL teachers should pay further attention to the important role of the brain. But what has been ignored in second language teaching and specifically in reflective teaching is the role of the brain. Brain controls the teachers' behavior (Arul, 2012). Each hemisphere of the brain is in charge of the variations in teaching methods in the classroom (Connell, 2005). Thus, teachers who are right-brained tend to use mainly right-brain teaching methods and the left-brained teachers use left-brain teaching methods (Connell, 2005). Effective teachers employ brain-based teaching strategies in the classroom in order to increase their students' engagement in learning process (Calhoun, 2012). In other words, both right brain and left brain students attend classes and teachers must encourage them to use it and develop the left brain and right brain thinking in order to use the full range of their mental abilities (Bielefeldt, 2006). Hence, teachers' awareness of their brain dominance is an important issue which can help them to adjust their teaching method to students' brain dominance.

Consequently, even though previous research suggests links between different personality traits and teaching reflectiveness, it seems that not much research has examined the relationship between teachers' reflectivity and

their brain quadrant dominance in the same study. Hence, to develop teaching performance and enhance the efficiency of reflective teaching, the EFL teachers should determine which side of their brain is more dominant and has a relationship with their tendency to critically examine and reflect on their teaching performance. Therefore, the aim of the present paper is to examine whether there is any significant relationship between Iranian EFL teachers' reflectivity in teaching and their brain quadrant dominance. The present study explored the following research question:

Is there any significant relationship between Iranian EFL teachers' teaching reflectivity and their brain quadrant dominance?

2. Literature Review

2.1 Teacher Reflectivity

"Critical reflection" or reflection is conceived as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusion to which it tends" (Dewey, 1933). Erginel in his definitions also noted reflection as an activity in which teaching practices, thoughts and beliefs are described, analyzed and evaluate mainly in relation to a specific purpose (2006). Reid (1993) agreed with Erginel and defined reflection as "an active process of reviewing an experience of practice in order to describe, analyze, evaluate and so inform learning about practice." Reflection is a process that generally leads to some change and advancement in teaching method and teachers' perspective on teaching (Loughran, 2005). Reflection, is a careful examination of own beliefs and behaviors to judge whether actions had been done in an appropriate way (Akbari & Allvar, 2010). Reflection refers to self-evaluation and self-criticism with the goals of refining ones teaching through a critical look at practices (Akbari & Allvar, 2010).

Richards (1990) considered reflection as a leading factor in teacher progress. Reflective teaching helps teachers to improve self-awareness of their teaching and the reasons behind teaching decisions, allow significant understanding of teaching and learning pedagogy and make positive change (Farrell, 2003). According to Bolton (2010) teachers' reflection improves the quality of teaching practice. In fact, reflection has a positive impact on the quality of teaching and learning because the reflective teachers look at what is going on in their classrooms, why they do it, what they learnt from doing it in order to make changes in teaching method, assessment, and instructional strategies, which would usually result in student achievement (Pacheco, 2005).

Teachers' reflectivity seems to have some impacts on students learning. Those teachers who have gained the knowledge of reflective practice are more likely to transfer the behavior to their students (Nolan & Huebner, 1989). They make to model this reflective attitude for their students and promote the reflective behavior in them (Nolan & Huebner, 1989). Reflective teachers build reflective learning environments to take advantage of students' strengths and make them more motivated in learning (Akbari, 2007). Accordingly, creating a reflective learning environment persuades students to be reflective, organized, and proactive about deep learning (Yost, Sentner, & Frolenza-Baily, 2000). In this regard, exposing students to reflective teaching can foster their interest in learning. Indeed, reflective teaching affects on students' academic achievements (Rezaeyan & Nikoopour, 2013; Ghorban Dordinejad & Rashvand, 2014). It means that, by practicing reflection strategies teachers can develop their reflective ability and enhance their teaching and use new teaching strategies to involve the students and bring about positive changes in their learning (Pacheco, 2005). Therefore, reflection in teaching makes students much more motivated and productive in the learning process (Akbari, 2007). Consequently teachers who use reflective teaching strategies in their classrooms try more to assist their students to think critically (Shermis, 1999).

Reflective teachers gather data on their own teaching practice in the classroom to assess their practices, attitudes, beliefs, values, morals, assumptions, and also make use of the information collected as a source for critical reflection on teaching practice (Farrell, 2008). More precisely, reflective teachers evaluate, understand and learn through reflection on their own experiences and improve their performance (Johns, 1994). Reflective teachers examine and assess their teaching performance in order to make decisions rationally about any necessary changes to develop practices beliefs, practices attitudes, which result in student progress in learning. The reflective teachers use more learner-centered teaching approaches (Bowen, 2009). "They describe learning as an interactive process between students and teachers rather than teacher-centered learning environment" (Bowen, 2009). In addition, reflective teaching make possible and facilitate communication and discussion between colleagues about language teaching that will lead to significant change in the English curriculum, pedagogy and assessment. Moreover, reflective teachers may achieve their greater educational success through manifesting conscientious behaviors, including self-disciplined, organized, self-assessing and identifying both strength and weaknesses (Akbari et al., 2010).

Along the same line, the term “reflective practice” was first coined by Shön (1983), as teachers’ reflection on their own teaching experiences and the way they react to the events. Shön (1987) presented the notions of “reflection in action and reflection on action” which distinguished between them as follows:

“Reflection in action” is concerned with everyday challenges a teacher is encountered during the teaching and learning practice, and teacher’s capability to interpret, analyze, and offer solution for them in the classroom. In other words, reflection in action is the teacher’s ability to think, assess, and solve problems in complex and unpredictable situations.

The second type of reflection known as “Reflection on action” occurs after a teaching episode takes place, when teachers analyze the actions and events through mental reconstruction. Teachers think about what they did; evaluate how much prosperous they were and what teaching activity led to different outcomes (Shön, 1991). Therefore, the plain meaning of reflection is looking back and reflecting on their teaching practices and thoughts.

2.2 How Does Reflection Take Place?

According to Richards (1990), there are some various approaches for promoting reflective practice and enabling teachers to think about their own teaching, including self-observation of other observation, team teaching, and reviewing and exploring their viewpoints about teaching through writing. Therefore, Richards (1990) introduced three approaches to reflective teaching as follows:

2.2.1 The Event Itself

Lesson or other type of class instruction is the starting point of teaching language. Although critical reflection usually focuses on teacher’s own teaching, self-reflection can also be encouraged by observing other teachers’ teaching performance.

2.2.2 Recollection of the Event

Reflective teaching at this stage means looking at what teachers do in the classroom, without assessment or description of what happened. Many different procedures are available at this phase of reflection, such as written descriptions of the event, a videotaping or audio-taping, or making use of checklists or coding systems to record every event details.

2.2.3 Review and Response to the Event

Regarding the attention given to the description of the classroom’s event, the teacher looks back and reviews the event. The event is deeply analyzed, and some questions are proposed about the classroom experience.

By assessing the approaches to decisive reflection the following reflection processes will be achieved.

2.3 Critical Reflection Approach

2.3.1 Peer Observation

Peer observation gives teachers an opportunity to see what more experienced teachers do in their classroom in order to learn different teaching styles and helps them improve their teaching. It provides occasions for teachers to reflect critically on their work.

2.3.2 Written Accounts of Experiences

A written account of experiences is one of the suitable ways to reflect on teaching practice. Written records of personal experiences are a conventional method of reflective teaching that significance of which is recognized in teacher education.

2.3.3 Self-reports

Self-reporting means making an inventory or checklist completely. In this regard the teacher specifies which practices were employed within a particular class lesson or within a specific period of time and also how frequently these practices were used (Pak, 1985). Teacher can use self-reporting in order to discover the types of teaching activities which is being frequently employed, whether all of the lesson objectives are met, and whether the learning activities work properly or not.

2.3.4 Journal Writing

One of the useful procedures for improving critical reflection is the journal writing. The purposes of journal writing are as follows:

(1) To present a document of the particular learning experiences which have happened; (2) to assist the teachers keep in touch with their own development process; (3) to provide occasions for the teachers to express their own

personal development; (4) to promote innovative interaction: (a) between the teacher and his/her own development process which is happening; (b) between the teacher and other teachers who are in the personal development process; (c) between the teacher and the facilitator whose function is to promote this development process (Powell, 1985; Bailey, 1984).

2.3.5 Collaborative Diary-Keeping

Teachers work collaboratively in order to write a diary. For instance, during a 10-12 week teaching course teachers write diaries or journals about their teaching practices, read the diary entries of other teachers, and talk about their teaching experiences every week (Rezaeyan & Nikoopour, 2013). Teachers record and transcribe their negotiations and then analyze their diaries, their answers and reactions to other teachers' diaries, so as to conceive how these three works together and what issues more often take place (Rezaeyan & Nikoopour, 2013). Reading and discussing the diary entries help teachers to reflect on their teaching in order to find out why and also how they taught.

2.3.6 Recording Lessons

Videotaping or audiotaping of lessons is a helpful way to collect data about teaching practice. Audio- and/or videotaping of teaching practice can lead teachers back to their own teaching and reflect on their practice. Audio- and/or videotaping can capture each moment of teaching processes and what is happening in the classroom in order to review them later. Pak (1985) suggested that teachers use audio and/or video recording to capture moment to moment of teaching process about one or two weeks and after that randomly choose a cassette for deep analysis. Audio- and/or videotaping for thirty minutes generally give adequate data for analysis. The main purpose of recording lessons is to record teacher to students and student to student interaction as much as possible.

2.3.7 Students' Feedback

The other valuable tool is Students' feedback to identifying the students' perceptions about the process of teaching and learning. This data can be gathered by questionnaires (Tice, 2002).

2.4 Components of Reflective Teaching

Akbari proposed a six component model for reflective teaching including practical reflection, cognitive reflection, meta-cognitive reflection, affective reflection, critical reflection and moral reflection which are explained as follows (Akbari, Behzadpoor, & Dadvand, 2010):

- 1) Practical component: This factor refers to different tools employed by teachers to reflect upon their teaching, including "journal writing," "lesson reports," "surveys and questionnaires," "audio and video recordings," "observation," "action research," "teaching portfolios," "group discussions," "analyzing critical incidents" (Farrell, 2003; Richards & Farrell, 2005).
- 2) Cognitive component: This component of teacher's reflectivity is related to teachers' attempt for carrying out small-scale research in their own classroom, attending conferences, seminars, workshops, and lectures, and also read books and articles related to the reflective teaching practice in order to improve professional growth and develop professional practice.
- 3) Meta-cognitive component: this notion deals with teachers' reflections on their personal behavior and attitudes, the way they describe their teaching practice and emotional behavior.
- 4) Affective component: This element is concerned with teachers' reflection on their own students, how students are learning language and how they act and behave emotionally in classrooms.
- 5) Critical component: this component is about items related to socio-political factors of language teaching and teachers reflections on those items. Hence, teachers reflect on the political importance of their teaching practice and include less discussed topics such as race, gender bias, social class, and democracy in their class and in the society.
- 6) Moral component: this reflection component investigates the teachers' reflectivity on moral issues.

2.5 Brain Dominance

The humans' brain is a complex organ made up of two cerebral hemispheres, the left and the right, connected by a thick layer of cells called the corpus callosum. Brain is responsible for intelligence, senses, movement, behavior and learning (Hart, 1983, as cited in Caine & Caine, 1990). Each side of the brain performs different functions (Caine, 2009). The left hemisphere controls the right side of the body, and the right hemisphere controls the left side of it. The normal tendency of one hemisphere of the brain to be more important than the

other in controlling specific functions, such as speech and language is called Brain Dominance (Arul, 2012). Therefore, Brain Dominance refers to improved cooperation between both the right and left hemispheres of the brain in the process of learning. Accordingly, knowledge of teachers brain dominance could assist you identify their ways of teaching, thinking, behaving, and feeling.

Especially there are certain particular difference between the left and the right hemispheres. Hereupon, Morris (2005) divided the brain up into four different systems with different preferred styles. The four systems of the brain are listed as follows

A: Left cerebral hemisphere—analytical

B: Left limbic system—sequential

C: Right limbic system—interpersonal

D: Right cerebral hemisphere—imaginative

Characteristics of the right hemisphere include nonverbal abilities, musical abilities, spatial awareness, and creativity (Springer & Deutsch, 1998). Right hemisphere appears to be specialized for process non-verbal, concrete, and spatial information. Moreover, it processes information in a holistic manner. Since, right brain dominant students were more visual-spatial learners. Visual-spatial learners learn things most effectively when they see them (Gilakjani, 2011). They have the ability to see the big picture of things, but might ignore the details (Gilakjani, 2011).

On the other hand, the brain's left side processes information in linear, sequential, and analytical manner. The left brain is dominant in language skills (Tendero, 2000). It is mainly in charge of analytical skills, logical thinking, and particularly in mathematical computations. Left-brain dominant people tended to be good at letters, numbers, and words (Sousa, 1995). This is because of Broca's & Wernicke's areas of the brain were known as the two parts on the left side of the brain responsible for the language functions. Left-brain dominant students are more rational and analytical thinkers. These students in English class have a significant knowledge and understanding of English grammar and sentence structure (Fleming, 2016).

Although most of people are left or right brain dominant, there are some individuals who are middle-brained. A Middle-brain person is more flexible than either left brained or right brained thinker. Middle-brain thinking people can have strong qualities from both hemispheres of their brain. They can benefit from logic and intuition simultaneously and solve the problems from different perspectives.

2.6 The Effect of Hemispheric Dominance on Teaching

Teachers mostly use the preferential side of their brain when they teach to the students (Connell, 2005). Hence, Teachers' brain dominance affects the classroom performance of them. Generally, teachers who are right-brain dominant tend to use primarily right brain teaching strategies (Connell, 2005). Similarly, Teachers with left brain strengths employ left brain teaching techniques (Connell, 2005). Hereupon, teachers who predominantly use their left brain usually use lecture and discussion methods in their teaching (Connell, 2005). Left brain teachers put items or notes on the board or overhead. These teachers assign independent work. It means that they use problems as projects for students to solve independently (Connell, 2005). Teachers with dominant left brain function give students more task of writing a research than the teachers of right-brain dominance. Left brain dominant teachers prefer a highly quiet and structured classroom. They are really good at keeping the classrooms clean both before and after school and ask students to put items in their place. In contrast teachers who use the right side of their brains generally tend to use hands-on activities in the classroom (Connell, 2005). These teachers use art, photography, music, film, in their classrooms. Teachers of right-brain dominance prefer to give more group work activities as project, and teach in a busy, active environment which might seem noisy to others (Connell, 2005). Their books are scattered all over the classroom. Right brained teachers, ask their students to make projects and work in groups, and use charts and maps to find solutions. In addition, the teachers who are middle-brain oriented have a tendency to change their techniques of teaching between the two teaching techniques (Connell, 2005). Middle brain teachers prefer to be more balanced and flexible than left or right brain teachers. Hence, effective learning occurs when teachers make connections between the right and left hemispheres of the brain (Lepper, 2011; Pedersen, 2011). Furthermore, trying to match professor and student brain dominance has some impacts on students learning and achievements (Ghinea et al., 2012).

Study on teachers' brain hemisphericity (Arul, 2012) has shown that there is a significant difference between the brain dominance of female high school teachers versus male teachers. Arul (2012) proposed that female teachers are better teachers than their male counterpart because they think a lot about the advantages and disadvantages of particular courses of action or doing certain things. They are more tolerant when dealing with students and adopt

precautions in their teaching. In addition Arul (2012) in his research found that a large number of the high school teachers were middle brain dominant. Consequently this revealed that teachers used both sides of their brains equally almost all the time.

As the preceding section has revealed, it is important for teachers to be aware of their brain hemisphericity because they may have a tendency to teach according to their own brain dominance. In addition, as it is mentioned in the literature nobody has worked on the relationship between teachers' brain quadrant dominance and their degree of reflectivity. Consequently, we identify this gap through assessing the role of teachers' brain hemisphericity/quadrant dominance in explaining their reflectivity.

3. Method

3.1 Participants

The participants of the present study were 102 Iranian EFL teachers who were teaching at different language institutes and universities located in Bojnord, Ghochan, Gonabad, Kashmar, Shandiz, Neyshaboor, & Mashhad districts of Khorasan Razavi, Iran. The investigators selected 102 EFL teachers by the convenience sampling. The participants were 53 (52%) females and 49 (48%) males with less than five to more than fifteen years of teaching experience. Teachers' age ranged from 25 to 35 years. The teachers had BA, MA, or PhD degrees in different fields of study in English, including English literature, ELT, and English translation studies.

3.2 Instrumentation

As the study aimed at investigating the relationship between Iranian EFL teachers reflectivity and their brain dominance, two written questionnaires were employed which are discussed thoroughly in the following lines. To measure teacher reflectivity, the questions of the reflective teaching questionnaire called the English Language Teaching Reflection Inventory developed by Akbari, Behzadpoor, & Dadvand (2010) was administered. The questionnaire contained 29 questions and was on a Likert-type scale, consisting of five scales ranging from never, rarely, sometimes, often and always. The reliability of the questionnaire was tested using Cronbach's alpha method. The Cronbach's alpha coefficient value for the reliability analysis of the questionnaire was found as 0.883 which indicated an excellent internal consistency of the questions. Also, Brain Dominance Survey which was developed by Ashraf, Tabatabaee Yazdi, & Kafi (2014) was adopted to find out the hemispheric preferences of the teachers. This questionnaire contained 60 items. The reliability of the questionnaire was computed using the Cronbach Alpha method. The questionnaire enjoyed a high reliability of .76 Cronbach's alpha coefficient which was indicating acceptable internal consistency.

All two questionnaires were simultaneously distributed to the teachers to measure teachers' reflectivity and their brain quadrant dominance. Before participating in the study, the teachers were informed about confidentiality of the data. 102 questionnaires were distributed in 34 days. The data were collected in person and through E-mail. 68 hard copies were distributed by the investigators and 44 soft copies were sent to the teachers' email.

3.3 Data Analysis Procedures

The data obtained through the two questionnaires were analyzed on the computer by using Statistical Package for the Social Sciences (SPSS) version 21, to investigate the relationship between teachers' reflectivity in their teaching practices and their brain quadrant dominance.

4. Results

To analyze the data further, hierarchical multiple regression analysis was conducted to find out to what extent teachers' brain dominance might have predictive power in their reflective teaching performance. Preliminary analyses were conducted to ensure no violation of the assumption of normality, linearity, multicollinearity and homoscedasticity.

The regression coefficient in this analysis was significant at the level of .05 or below.

Results showed that the total variance explained by the model as a whole was .20 %, $F(4, 97) = 2.864, p < .005, R^2 = .11, R^2_{Adjusted} = .07$ (Table 1).

Table 1. Model summary

R	R Square	Adjusted R Square
.325 ^a	.106	.069

Furthermore, the results indicated a positive significant correlation with teachers who used their A quadrant (Upper-left) and teaching reflectiveness while those with C quadrant dominance (Lower-left) had a negative significant correlation with being reflective teachers. Moreover, regression analyses showed no significant relationship between reflectivity and teachers' B and D quadrant dominance.

Quadrant A made the largest unique contribution ($Beta = -.39, p = 0.002$) and quadrant C also made a statistically negative significant contribution ($Beta = -.26, p = 0.04$) among these variables (Table 2).

Table 2. Regression analysis summary for predicting teacher's reflectivity

	Standardized Coefficients		
	Beta	t	Sig.
(Constant)		15.055	.000
Brain A	.390	3.157	.002
Brain B	.006	.059	.953
Brain C	-.260	-2.084	.040
Brain D	.120	1.124	.264

Note. Dependent Variable: Reflective Teaching; * $p < .05$.

5. Discussion and Conclusion

This section presents a specific discussion based on the results of the current study. With respect to the general pattern of the brain dominance of Iranian EFL teachers, a significant relation was found between teachers with A and C quadrant dominance and teaching reflectiveness. In particular, upper left quadrant emerged as central to all four quadrants of the brain, suggesting that teachers who are left brained and particularly use their A quadrant (Upper-left) are most likely to be reflective. On the other hand, Lower-left quadrant was negatively associated with reflectivity, suggesting that teachers with C quadrant dominance are much less likely to become reflective. Thus, teachers with A quadrant may be more likely to employ reflective teaching approach so as to make positive, competent and efficient changes in their teaching performances.

According to the results of the study concerning the research question show that EFL teachers at the present study used A quadrant when employ reflective practices. It could be concluded that hemisphericity has relationship with being reflective teacher. Concluding, teachers who are left brained and specifically with upper-left, have strong desire to be reflective and they are likely to apply it in their teaching practice. It was revealed that teachers who believe in law enforcement, trustworthiness, ensuring for the quality of work results, and also are more analytical, realistic, discerning, critical, intellectual, precise, penetrating, and judge reasonably are most likely to use reflection approach to improve learning and teaching. In other words, this result revealed that reflective teachers who employed reflective strategies in their teaching are left brained teachers who also use the left brain teaching technique. It means that the relation with reflectiveness is interesting, and suggests that left brain teachers who are analyzer and keen to perform well may experience some degree of reflectivity about their teaching. The results of the current study also showed that teacher's brain dominance not only effects on teacher's teaching strategies but also has a relationship with teacher's reflectivity. What is important here is not the fact that the two sides of the brains see the world in completely different ways but rather, in our current study, the left brained teachers and specifically those who use A quadrant recognize what reflective teaching approach is all about. Therefore, the results of the current study are in accordance with the results of the study by Connell (2005). Connell (2005) declared that teaching strategies of teachers differ in terms of brain dominance. Thus, right-brained teachers have tendency to use mainly right brain teaching strategies and the left-brained teachers use left-brain teaching strategies (Connell, 2005). Ghinea et al. (2012) also had the same findings. They concluded that the teaching style and the preferred methods for evaluation depend on the teacher's brain dominance, behaviors and thinking model. Therefore, it is plausible that teachers' awareness about their own brain dominance differences help them to select the correct teaching method (Ghinea et al., 2012). In addition, Oflaz (2011) came up with the same conclusion, he declared that teachers' awareness of their brain dominance not only helps them to teach through their own dominance but also discover the students' brain dominance and give activities accordingly.

So as not to leave the right brain teachers aside and to have all the teachers reflect on their teaching performance in classroom, teachers must remember that their existence is meaningless unless they employ six components of

teachers' reflectivity in their practice including: practical, cognitive, meta-cognitive, and affective factors (Akbari, Behzadpoor, & Dadvand, 2010). In addition, to become more reflective teacher, the right brained teacher should use reflective teaching procedures if s/he wants to foster his/her teaching practices and enhance students' achievements. In this regard, the most appropriate ways to increase the reflective approach in teaching process are those using some procedures for reflective teaching including action research, peer observation, journal writing, collaborative diary keeping, recording lesson, students' diaries and students' feedback (Pacheco, 2005).

Consequently, the results provide strong support for the important role of teachers' brain quadrant dominance in explaining their reflectivity in ELT contexts. The awareness of the relationship between EFL teachers' teaching reflectivity and their brain quadrant dominance could help teachers to analyze and reflect on their own practice and find their strength and weaknesses in teaching which are the result of their brain dominance and brain-based teaching technique. The findings of the current study may be of help to inexperienced EFL teachers or teachers who are not fully aware of the significance role of the brain in language teaching. It helps teachers to be informed and aware of their own brain dominance which may have influence on their tendency to teach to their own brain dominance and also notice its effects on the use of several brain-based teaching strategies in teaching language learners. In addition, in order to increase the efficiency of teaching, the EFL teachers should determine which side of their brain, left or right is more dominant and exert a more powerful influence on their teaching strategies. Furthermore, it's better for teachers to examine the extent to which they reflect on their teaching performance which in turn would show how much their brain influence their reflectivity. Future study could extend these findings by including other variables such as teachers' brain quadrant dominance in explaining teacher self-efficacy, and self-disclosure.

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