Abstract

The aim of the research is to describe a quantum teaching method and formulate a model of teaching English as a Foreign Language (EFL). Quantum teaching is a teaching method applying that learning by imagination. The method is given by Bobbi DePorter (1999). It contributes quantum learning theory. He believes that the success of teaching goals not only involves teaching materials but also learners’ psychology. In other word, it considers how human’s brain works. Teaching learning process, according to the method, utilizes V-A-K modality. The modality is a performance of human’s brain including two theories about the performance of human’s brain, namely, triune theory and brain hemisphere theory. Triune theory (Mc Leah, 1979) considers that human’s brain consists of neocortex (higher order thinking), limbic brain (emotion and social interaction) and stem brain (for survival). While, brain hemisphere theory (Sperry, 1960) emphasizes on the function of human brain in learning. The brain is divided into two parts right brain and left brain. It leads to different ways in learning behavior among learners. They are three types of learner: visual, auditoria, and kinesthetic. Based on expert, human tends to have the three types of learning behavior. However, someone will be more dominant to certain type of learning behavior. Based on De Porter, a visual learner has good memory skill by visual form. He memorizes information based on what he sees. An auditoria learner has good memory skill based on what he hears. While, a kinesthetic learner has good memory skill by doing body’s movement and emotional touch.
Abstrak


Kata kunci : pengajaran quantum, visual, auditoria dan kinestetik
1. Introduction

1.1 Background

Quantum Teaching (QT) method is a teaching system design written by Bobbi De Porter (Allyn & Bacon, 1999). The method is the development of Quantum Learning (QL). In other word, QT applies the goal of QL. Although language competence theoretically belongs to left brain, both method believe that learning language involves two sides of our brain, namely, left and right brain. The focus of QT is learning by imagination. The imagination in the context is teaching by association, metaphor, picture etc. The QL, in addition, make effort of making learner feel comfortable during teaching learning activity. Thus, both methods have great connection to each other.

In QL, the method is a comprehensive model that covers both educational theory and immediate classroom implementation. It integrates research-based best practices in education into a unified whole, making content more meaningful and relevant to students' lives about bringing joy to teaching and learning with ever-increasing 'Aha' moments of discovery (De Porter, 1992). It helps teachers to present their content a way that engages and energizes students. This model also integrates learning and life skills, resulting in students who become effective lifelong learners – responsible for their own education. In other word, it creates an empowering atmosphere of trust, safety and a sense of belonging. Establishing engaging, focused traditions creates a sense of belonging and safety and is an effective strategy for classroom management, focusing attention and motivating students to increase participation in learning. Each school day begins with a morning routine and purposeful first statement. These routines are designed to immediately focus students and create resourceful learning states. It can be inferred that in QL student is the center.

In QT, on the other hand, teacher is the center. It means that QT mostly focuses how teacher should do in the teaching learning process as well as how teacher is able to fulfill students’ need in learning by practicing methods in QL. It enhances not only creating students to have academic skill but also supporting them to have life skill. QT combines educational theories such as Accelerated Learning (Lazanov),
Multiple Intelligences (Gardner), Neuro-Linguistic Programming (Grinder & Bandler), Experimental Learning (Hahn), Socratic Inquiry, Coorporative Learning (Johnson), and Elements of Effective Instruction (Hunter) into a one package of method regarding with language teaching and the work of human brain (DePorter, 1999). QT is a method concerned about optimizing human brain. Language intelligence involves both sides of brain: left and right (Sperry, 1960).

Regarding with the fact, the most significant aspect of QT is learning by imagination namely, by using association, metaphors, and pictures. It means that the main goal of the QT is to create teaching learning process is simpler, easier, more interesting, more understandable etc. Since QT is called as teaching orchestra, teacher should be able to create a supporting learning environment, teaching plan design, and creative association or metaphor. Hence, it needs a proper strategy to obtain teaching goal. Why teaching English needs a proper strategy is that English is a foreign language. Teaching a foreign language is very complex process. It both transfers different patterns of language and the systems of different culture. Since QT emphasizes on teaching by imagination, it is required to give association and metaphors understood by the learner’s culture (Larson, 1984: 87). Therefore, teacher should be able to find the metaphors which can be understood by learner’s visual thought.

QT can also be called a teaching method by using scientific approach. It not only considers teaching technique and strategy but also explains human brain performance in learning language. The reason why it is supposed to involve the understanding of the brain work is that teaching foreign language is not simple process (Lozanov, 1978).

The research performs theory of QT and the correlation between learners and the work of human brain. It describes the important aspects of teaching: teaching philosophy, learner learning style, teaching material, and classroom setting. The approach is dealing with understanding learner’s learning style. Also, teacher is given the knowledge by understanding the work of human brain and implication for language learning.
1.2 The Statement of the Problem

The writer emphasizes the problem into the following questions.

1) What kind of teaching strategy is used for visual learners?
2) What kind of teaching strategy is used for auditory learners?
3) What kind of teaching strategy is used for kinesthetic learners?

1.3 The Objectives and Contribution of the Study

Based on the statement of the problem above, the objectives of the study cover as the followings.

1) To describe teaching strategies applied for visual learners.
2) To describe teaching strategies applied for visual learners.
3) To describe teaching strategies applied for kinesthetic learners.

1.3 Research Method

The study uses descriptive method. It is used to describe several aspects dealing with teaching strategies and they are applied. It is taken in order to formulate what best strategy for certain learners in learning.

2. Theoretical Framework

2.1 Understanding The Work of Human Brain and The Implication for Language Learning

There has been a longstanding interest among second and foreign language educators in research on language and the brain. Language learning is a natural phenomenon; it occurs even without intervention. By understanding how the brain learns naturally, language teachers may be better able to enhance their effectiveness in the classroom.

The brain is a vastly complex and adaptive system with hundreds of billions of neurons and interneurons that can generate an astronomical number of neural nets, or groups of neurons acting in concert, from which our daily experience is constructed.
Many findings seem obvious and intuitive. For example, we all know intuitively that the best age to learn a new language is during our early childhood; what neuroscientists call the principle of windows of opportunity. We can accept that all brains are unique and a product of interactions with different environments, generating a lifetime of different and varied experiences; what scientists call plasticity. We can accept the notion that either you use it, or you lose it; new neural pathways are created every time we use our brains in thinking through problems, but are lost forever – are pruned – if we do not use them (Bigler: 1992).

How does human brain work? Paul Mc. Leah (1979) states that human brain, based on its performance, is composed of three systems: neocortex, limbic brain, and stem brain. Neocortex is the center system of brain controlling and regulating the human thinking. While, limbic brain is a part of brain controlling human emotion. The stem brain is a part of brain how human can manage themselves to get way from danger or trouble. Those systems process information to two part of brain: left and right brain.

Greenenough & Wallace (1993) research on the brain dominance inventory examines and reports learners learning style in terms of which side of the brain they prefer to use for processing information brain dominance theory is based on research showing that persons use different sides of their brains to process different kinds of information. All persons use both sides of their brains holistically, but most individuals tend to prefer learning strategies associated with one side or the other. Such individuals are considered to be left-brain dominant or right-brain dominant. Some have about even preferences and are considered to have bilateral dominance. The left side of the brain: processes verbal, abstract, analytical information in a linear, sequential manner, processes verbal, abstract, analytical information in a linear, sequential manner, looks at differences and contrasts, seeing small signs that represent the whole, and concerns itself with reasoning abilities such as math and language. While, The right side of the brain: processes non-verbal, concrete, and spatial information, looks at similarities in patterns, forming a whole picture, and processing parts in relationship to the whole, and concerns itself with artistic abilities such as music and graphics. Therefore, the right brain has long term memory.
2.2 Important Aspects in Quantum Teaching Method

There are some important aspects regarding the implementation of QT method. The aspects involve significant factors of how to understand human brain by using QT application based on education theories as well as by considering learner’s physiology. The aspects will be briefly described below.

a) Teaching Philosophy

Teaching not only transfers information to learners but also involves psychology. Teacher’s effort in making interesting teaching process is a part of the art of teaching. Why we should understand those things is that learners are human being having emotion, subjective judgment and their own thinking. All those aspects related to the work of human brain. Therefore, It is needed teaching philosophy. According to De Porter (1999), QT method believes teaching philosophy is that teacher should be able to

- encourage students’ motivation,
- make interesting teaching environment,
- create metaphors and association to certain concept,
- give a chance to share opinions,
- review previous teaching material,
- give reward.

b) Learner’s V-A-K Learning Style (Modalities)

Teachers must plan many aspects of their program and most will involve learning and teaching activities. Learners’ learning style affects the teaching goal. Knowing the learning style preferences can help teachers plan for activities that take advantage of their natural skills and inclinations.

A learning style is the unique collection of individual skills and preferences that that affect how a person perceives, gathers, and processes information. There are three types of V-A-K modalities: visual, auditoria, and kinesthetic. Though in the research on V-A-K learning style by Bandler and Grinder (1981) reveals that everyone tends to have the three learning styles, an individual usually has his own
preference to one of the learning style. The combination of these, however, creates individual to posses certain talent (Markova, 1992 cited in De Porter, 1999). Referring to DePorter, 1999 & Ldpride.net, the three learning style are as follows.

● **Visual Learners:**

*learn through seeing...*

These learners need to see the teacher's body language and facial expression to fully understand the content of a lesson. They tend to prefer sitting at the front of the classroom to avoid visual obstructions (e.g. people's heads). They may think in pictures and learn best from visual displays including: diagrams, illustrated text books, overhead transparencies, videos, flipcharts and hand-outs. During a lecture or classroom discussion, visual learners often prefer to take detailed notes to absorb the information.

● **Auditory Learners:**

*learn through listening...*

They learn best through verbal lectures, discussions, talking things through and listening to what others have to say. Auditory learners interpret the underlying meanings of speech through listening to tone of voice, pitch, speed and other nuances. Written information may have little meaning until it is heard. These learners often benefit from reading text aloud and using a tape recorder.

● **Tactile/Kinesthetic Learners:**

*learn through , moving, doing and touching...*

Tactile/Kinesthetic persons learn best through a hands-on approach, actively exploring the physical world around them. They may find it hard to sit still for long periods and may become distracted by their need for activity and exploration.
c. Language Learning Strategy

The success of teaching is supported by teacher’s well-plan preparation and proper teaching aid. by making suitable syllabus, suitable teaching aids, mind mapping, clustering materials. Here are the following strategies dealing with language learning.

- Prepare teaching material dealing with learners learning style. It covers the material which can be applied by the three type of style, i.e. using verb related to eye for visual learner, ear for auditory learner and body movement for tactile/kinesthetic learner.
- Creating and finding memorizing technique for certain concept of pattern.
- Making main mapping and clustering to resume the material.

3. Model of Teaching EFL Applying QT Method

Model Teaching EFL applying QT method can be divided into three, namely: designing material referring to learner learning style, teaching strategy and classroom setting.

3.1 Teaching Material

Based on De Porter teaching material is supposed to be related to their learning style. Here are the description of teaching material by on QT (De Porter: 148).

- Create interesting and brain-catching title; it can use big font size, shading, picture, highlighted writing.
- Design material by using verbs related to learners learning style (visual, auditory kinesthetic relation), e.g. in teaching grammar for beginner, use verbs facilitate three types of learning styles. Verbs for visual learner should be related to what they can see or imagine such as think, imagine, see, look, observe,
notice, etc. While verbs for auditoria learners had better find words having connection with sound or ears such as listen, sing, speak, talk, scream, yell, etc. Verbs for kinesthetic learner ought to related to body movement or touching such as hold, stand up, write, come forward, touch, etc.

3.2 Teaching Strategy

Classroom discourse is a teaching learning activity held on. Here is the process of transferring concept. It needs a proper strategy to find ideal teaching goal (De Porter, 1999:48)

1) Do teaching by considering the three types of learning style. Here are strategies of how dealing with every type of learner.

Teaching Strategy for Visual Learners

- To aid recall, make use of "color coding" in board when teaching new material in different color marker (red, blue, black etc).
- Tell them to use highlight pens for important information in contrasting color.
- Ask them to write out sentences and phrases that summarize key information obtained from their textbook and teacher.
- To enrich their vocabulary, ask them to make flashcards of vocabulary words and concepts that need to be memorized by using highlighter pens to emphasize key points on the cards. Give them the tips as visual to limit the amount of information per card so their mind can take a mental "picture" of the information.
- When teaching new material presented in diagrams or illustrations, ask them to write out explanations for the information.
- When taking note on grammar rule or paternal information, ask them to give explanation in sentences and key phrases their understanding of the material. When a problem involves a sequence of steps, tell them write out in detail how to do each step.
• Ask them to make use of computer word processing at home. Tell them to copy key information from their notes and textbook into a computer. Suggest them to use the print-outs for visual review. It helps them to memorize information.

• Give learners them dealing with the ways of learning at home, for example, before an exam, make themselves visual reminders of information that must be memorized. Suggest them to make "stick it" notes containing key words and concepts and place them in highly visible places --on their mirror, notebook, car dashboard, etc.

**Teaching Strategy for kinesthetic learners**

• To help them stay focused on class lecture, ask them to sit near the front of the room and take notes throughout the class period. Suggest them jot down key words and draw pictures or make charts to help them remember the information they are hearing.

• When teaching, Do some body movements (hands, head, etc) to explain concept or new vocabulary, for example, when teacher says “Listen to me” point finger to ear, “I think” point to head, or “I feel” point to heart. Think of ways to make your teaching tangible, i.e. pointing on object. For example, make an illustration by body movement to describe a key concept. It will help them understand certain topic easier.

• To illustrate a sequence of steps, ask learners to make 3’x 5’ flashcards for each step. Tell them to arrange the cards on a table top to represent the correct sequence. Put words, symbols, or pictures on their flashcards -- anything that helps them remember the information. Suggest them to use highlighter pens in contrasting colors to emphasize important points. Inform them to limit the amount of information per card to aid recall. Order them to practice putting the cards in order until the sequence becomes automatic.

• When reviewing new material, ask them to copy key points onto a chalkboard, easel board, or other large writing surface.

• Suggest them to make use of the computer to reinforce learning through the sense of touch. Ask them to make use of word processing software and ask them copy essential information from their notes and textbook. Suggest them
to use graphics, tables, and spreadsheets to further organize material that must be learned.

- Suggest them to listen to audio tapes on a Walkman tape player while exercising. Advice them to make their own tapes containing important course information.
- When giving explanation, try to change position by moving from left side to right side.

**Teaching Strategies for Auditoria Learners**

- Ask them to make a study group to assist them in learning course material. Suggest them to listen to their friends when reviewing material.
- Try to give sound effect in doing explanation by mnemoniac system (performing concept by the similarity of sound).
- When dealing reading skill by doing reading aloud to aid recall.
- Allow them to use tape recorded lectures. Or, ask them to create their own audio tapes by reading notes and textbook information into a tape recorder. When preparing for an exam, advice them to review the tapes on their car tape player or on a "Walkman" player whenever you can.

2. **Create Memorizing Technique**

Delivering concept by giving memorizing techniques or creating metaphors or association need a good skill of memorizing system. As cited in Hemisphere (Mc Recall, 2005: 89) there are a number of memorizing system that can be applied for learning. The memorizing techniques are as the followings.

- Association System (linking system & story system). The system performs concept by memorizing memorable sentence.
- Number or Peg Word System (Chunking System, Major System, Keypad System, Phrase System, Motoric System, Card System). The system perform concept by splitting into several parts then put them into certain story, recalling process, the similarity of sound or imagination which can be
processed by human right brain such as telephone number, the similarity of number,

- **Loci System** (Word loci System). The system is usually used for permanent memory and sequenced concept. Loci system can be used to memorize generic structure of text in right order, e.g.; in narrative text learners have to memorize generic structure in good order (orientation, complication, resolution, and coda).

- **Mnemonics System** (Rhyme Peg, Imagenie, Acronymology). The system performs concept by the similarity of sound. Imagenie system performs concept by seeing visual object or picture.

- **Alphabethon System** (Itemania, animania). The system alphabethon system performs concept by marking certain alphabet.

- **Names & Faces System** (Buzan Social Etiquette System & Mnemonics System)

c. Perform Concept into Mind Mapping

Making mind mapping is a great way of helping learner to understand certain topic. Mind Maps. The human brain is very different from a computer. Whereas a computer works in a linear fashion, the brain works associatively as well as linearly - comparing, integrating and synthesizing as it goes. Association plays a dominant role in nearly every mental function, and words themselves are no exception. Every single word, and idea has numerous links attaching it to other ideas and concepts.

Mind Maps™, developed by **Tony Buzan** (1993) are an effective method of note-taking and useful for the generation of ideas by associations. To make a mind map, one starts in the center of the page with the main idea, and works outward in all directions, producing a growing and organized structure composed of key words and key images. Here is the example of mind map (Buzan, 1993)

Model of Mind Map Taken from Buzan
Mind Maps are beginning to take on the same structure as memory itself. Once a Mind Map is drawn, it seldom needs to be referred to again. Mind Maps help organize information.

Because of the large amount of association involved, they can be very creative, tending to generate new ideas and associations that have not been thought of before. Every item in a map is in effect, a center of another map.

The creative potential of a mind map is useful in brainstorming sessions. You only need to start with the basic problem as the center, and generate associations and ideas from it in order to arrive at a large number of different possible approaches. By presenting your thoughts and perceptions in a spatial manner and by using color and pictures, a better overview is gained and new connections can be made visible.

d. Clustering

Clustering is a nonlinear activity that generates ideas, images and feelings around a stimulus word. As students cluster, their thoughts tumble out, enlarging their word bank for writing and often enabling them to see patterns in their ideas. Clustering may be a class or an individual activity.

3.3 Classroom Setting

Teaching environment plays important role in gaining the teaching goal. They cover holding V-A-K learning style test, choosing suitable classic music, doing brain gym, creating interesting brain storming.
• **Holding Learners’ Learning Style Test.**

   It can be done by giving questioner as the pre test. It helps teachers to understand learners’ learning style.

• **Divide learners based on age, interest, job, nationality, and gender.**

   The division of group will help teacher to find the right topic of teaching material

• **Limit a number of students.**

   It will help do classroom management.

• **Doing Break**

   Why it should be given break is that every 30 minutes human brain get reducing memory. It is so called *decay theory* (Sperry 1960 cited in Mc recall, 2005). The research reveals that human brain gets reduction in memorizing because of time. The decay theory also indicates that forgetting is caused by the passage of time. It states that the memory is physically no longer present. (Benjamin, Hopkins, & Nation, 1994. p.278).

   How to avoid the decay theory is that teachers can ask learners to do body movement, doing light exercise, clapping hands, shouting, brain gym, riddle games, etc. Many scientists, however, believe that brain gym has a significant effect to take back the concentration.

   These simple exercises are based on the copyrighted work of Paul E. Dennison, Ph.D., and Gail E. Dennison. Brain Gym is a registered trademark of [Brain Gym® International](#). A best selling book written by Carla Hannaford, Ph.D. Dr. Hannaford states that our bodies are very much a part of all our learning, and learning is not an isolated "brain" function. Every nerve and cell is a network contributing to our intelligence and our learning capability. Many educators have found this work quite helpful in improving overall concentration in class. Introduced here, you will find four basic
"Brain Gym" exercises which implement the ideas developed in "Smart Moves" and can be used quickly in any classroom. • This exercise helps improve blood flow to the brain to "switch on" the entire brain before a lesson begins. The increased blood flow helps improve concentration skills required for reading, writing, etc. The kinds of brain gym are described below.

- Put one hand so that there is as wide a space as possible between the thumb and index finger.
- Place your index and thumb into the slight indentations below the collar bone on each side of the sternum. Press lightly in a pulsing manner.
- At the same time put the other hand over the navel area of the stomach. Gently press on these points for about 2 minutes.

"Cross Crawl"

This exercise helps coordinate right and left brain by exercising the information flow between the two hemispheres. It is useful for spelling, writing, listening, reading and comprehension.

- Stand or sit. Put the right hand across the body to the left knee as you raise it, and then do the same thing for the left hand on the right knee just as if you were marching.
- Just do this either sitting or standing for about 2 minutes.

"Hook Ups"

This works well for nerves before a test or special event such as making a speech. Any situation which will cause nervousness calls for a few "hook ups" to calm the mind and improve concentration.

- Stand or sit. Cross the right leg over the left at the ankles.
- Take your right wrist and cross it over the left wrist and link up the fingers so that the right wrist is on top.
Bend the elbows out and gently turn the fingers in towards the body until they rest on the sternum (breast bone) in the center of the chest. Stay in this position.

- **Play Classic Music**

To maximize the brain work, it is suggested to use classic music. Here are the following tips for teacher.

- Play classic music as background of classroom setting

  According to Superlearning 2000 cited in The Campanile on November 24, 2003. playing high frequency Baroque music (between 5000 and 8000 hertz) by composers like Mozart, Chopin and Vivaldi, which have a rhythm of about 60 beats per minute, helps the brain recharge and regain balance. Researchers have found that this kind of music also calms the flow of blood, which helps the brain think more clearly.

- Choose suitable kind of classic music. It is recommended to use classic music for learning such Mozart, Bethoven, Vivaldy etc.

One can choose to either study with this music in the background or create tapes with recordings of four beats of facts and four beats in between. In this way, the brain will remember the beats of the facts as the music passes at the same tempo. Using this method, students have learned languages, memorized chemistry facts, been able to remember math equations and have committed obscure history dates to their memories.

- Play in Soft Volume

Researchers have also discovered that music in the 5000 to 8000 hertz range, like some of Mozart's symphonies, can actually improve an individual's hearing range.

Over the course of one's life, everyday city noise deafens the ears, and by the time college rolls around, many students already suffer from significant hearing loss as a result. Low-frequency sounds from traffic, airports, construction and even rock music can "drain the brain" and ears from the sufficient stimulation they need.
The "Mozart effect" is widely discussed. Scientists have found that people who listen to Mozart music score higher on reasoning problems that are critical in math and engineering. However, there is disagreement about the duration of "increased intelligence" caused by the Mozart effect. Some researchers believe that it only lasts 10 minutes before the effects of Mozart end.

4. Conclusion

What the QT method applies is to gain teachers’ understanding of how human brain works. By Understanding what learners’ need, teacher will be more easier to transfer information. Thus, our interpretation of the implications of QT method is to gain better understanding about learners’ behavior in learning from brain-based research for teaching and learning. Understanding the work of human brain will help teachers to get better understanding in providing teaching aids, picking the proper method, seeking the right approach to students need.

QT also helps teachers find what they should teach, how they design teaching plan, how they should organize complex sequences of teaching, how they should work with students with special needs. Since QT and QL have a great connection to be applied in teaching learning process. By using QT, teachers are challenged to keep innovating the right approach to meet learners’ need. Teachers should also continue to draw on and develop their own insights about learning based on their classroom experiences and classroom-based research.
Reference


