CHAPTER II

REVIEW OF RELATED LITERATURE

This part discusses some issues related to the effectiveness of Brain Gym to improve students’ English achievement and some previous studies. The issue covered include the definition of Brain Gym, the function of Brain Gym, the Brain Gym movement, the discussion of achievement, the factor that influence the achievement of learning.

A. Previous Study

Lilik Jumarsih under the title “The effectiveness of Brain Gym method to improve mathematics comprehends.” She did the research on 22 May 2011 at SDN Sadang Taman Sidoarjo. She uses experiment quantitative research. She uses observation and test to collect the data. The result of this research, mean score in experimental group is greater than the mean score in the control group. She did the research on first year elementary school.¹ However in this research researcher uses observation, test, and interview to collect the data and do the research toward first year students of MTs N Krian, Sidoarjo.

Siti Afifah “Pengaruh Metode Brain Gym Terhadap Peningkatan Kecerdasan” She did the research on May 28th 2007 at TK Yaa Bunayya 2 Surabaya. She used correlation (descriptive quantitative) design. She used

¹ Jumarsih Lilik, thesis: “The effectiveness of Brain Gym method to improve mathematics comprehends” (Surabaya: State Institute Islamic Sunan Ampel, 2011)
observation, interview, and documentation to collect the data. To analyze the data she used form of product moment to measure validity and reliability. The result of this research is Brain Gym method effect to improve intelligence. Meanwhile, in this research, researcher uses experiment quantitative research. To collect the data researcher uses observation, test, and interview.

Nur Sa’idah “Efektivitas Brain Gym dalam mengatasi kejenuhan belajar (learning plateau) pada Mata pelajaran Pendidikan Agama Islam” She did the research on 16th January 2009 in SMP Negeri 3 Taman, Sidoarjo. She used quantitative research. Observation, interview, documentation, and questioner used in this research. The result is Brain Gym effective in overcome learning plateau. The differences are dependent variable, location of the research, and research design.

Rendi Editya “Pengaruh Brain Gym Terhadap Kemampuan Bahasa Pada Anak Umur 2 - 3 Tahun di Pendidikan Anak Usia Dini Anyelir 12” She did research in Sukorambi village, sub district Sukorambi, Jember. Method used in this research was Quasy Experimental using Pre-Post Test randomized Control Group Design. The data were collected using questionnaires. The data were analyzed using the “Mann-Whitney U Test” with SPSS 11.05 for windows.

---

2 Afifah Siti, thesis: “Pengaruh Metode Brain Gym Terhadap Peningkatan Kecerdasan” (Surabaya: State Institute Islamic Sunan Ampel, 2011)
3 Sa’idah Nur, thesis: “Efektivitas Brain Gym dalam mengatasi kejenuhan belajar (learning plateau)”. (Surabaya: State Institute Islamic Sunan Ampel, 2009)
software program. The results showed that there were significant differences between pre test and post test in the control group and experimental group.⁴

B. Brain Gym

1. The Definition of Brain Gym

Dr. Dennison and Gail E Dennison was the person who discovered Brain Gym method in the 1980.⁵ They continue of research by developmental specialists who had been experimenting with using physical movement to enhance learning ability. They called their work Educational Kinesiology.

According to Dennison Brain Gym consist of movements and activities that easy and enjoyable⁶. Brain Gym method can be used at the beginning or ends of lessons or topics. It is safe and enjoyable. Brain Gym consists of simple movements. Brain Gym method useful in a classroom situation because it does not require sophisticated equipment or large areas. When student is allowed to use the body, it encourages the brain to make use of a variety of intelligences.⁷

⁴ Editya Rendi, thesis “Pengaruh Brain Gym Terhadap Kemampuan Bahasa Pada Anak Umur 2 - 3 Tahun”. (Jember: stikes, 2009)

⁵ http://www.braingym.org/history

⁶ Dennison Paul-Dennison Gail, Brain Gym (Jakarta: Gramedia, 2009), 1

⁷ http://igreen.tripod.com/gerpe/id29.html. accessed on 5 June 2012
2. The Function of Brain Gym

There are benefits of this method. Learn anything faster and more easily, perform better at sports, be more focused and organized, start and finish projects with ease, overcome learning challenges, Reach new levels of excellence. Therefore, the basic idea behind Brain Gym is by certain body movements the brain will develop, and learning will be enhanced.


Dennison describes brain functioning in terms of three dimensions.

a. Laterality is the ability to coordinate one side of the brain with the other, especially in the visual, auditory, and kinesthetic midfield, the area where the two sides coordinate. This skill is the basic to the ability to read, write

---


10 Ibid, 28
and communicate. It is also essential for whole body movement, and for the ability to move and think at the same time.

b. Focus is the ability to coordinate the back and front areas of the brain. It is related to comprehension, the ability to find meaning, and the ability to experience details. People without this basic skill are said to have attention disorders and difficulty in comprehend.

c. Centering is the ability to coordinate the top and bottom areas of the brain. This skill is related to organization, feeling and expressing one's emotions, a sense of personal space, and responding rationally.

From the description above Brain Gym method suitable for learning English language that should master four basic skills: reading, speaking, writing and listening.

3. Brain Gym Movements

In Brain Gym; there are 26 basic movements that are divided into three movements:11

a. The Middle Movement. This movement consists of 11 movements to integrate the left and right brain. With this movement, the ability of social and academic improved.

b. Lengthening Activities. There are 6 basic movements to integrate front and back of the brain. This movement serves to enhance the ability to focus and reduce stress.

c. Energy exercise and deepening attitude. This movement consists of nine movements to integrate the top and bottom brain. Useful for; balance emotions, feelings, and adaptation.

In this research, 12 movements was used as treatment that closely related with learning language:

i. Cross crawls

Cross crawl activates both of the brain together. It improves coordination, visual, auditory and kinesthetic ability and can improve listening, writing and memory. The steps to do Cross Crawls movement:

a) Stand with feet hip distance apart.

b) Think of your body as a big X brings your hands up and out if you would like.

c) Slowly bring one arm down and across while the opposite leg comes up to meet it. Twist the torso to get the most contact between the arm and opposite leg. Stay comfortable so as to not over stretch, but be as engaged as possible. You can think of the dance the twist if that helps.
d) Change arm and leg. Remember to go slow because specific neurotransmitters are released, and integrated left and right brain hemisphere learning is better enabled. The slow contralateral movement activates speech and language centers in the brain. Coordination and balance are improved, and over time this slow movement may become easier and easier.

ii. The thinking cap:

The Thinking Cap activates brain for: listening, focusing attention, inner dialogue and thinking. The steps are:

a) Stand or sit comfortably.

b) Starting at the top of the ears, gently grab both ears between the thumb and pointer fingers. With just enough pressure to feel good, let the thumb slide up and out of the ear before grabbing the next piece of ear directly below what was pulled. Slide the thumb off of the ear all the way down to the last part of the lobe, giving the whole outer ear a nice massage.

c) Repeat step 2, two more times or until it feels complete.
iii. **The elephant**

This movement is designed to improve listening comprehension and attention, thinking ability recognition. Relaxed neck is needed in this movement to focus the eyes gently throughout the movement. The steps are:

a) Stand with feet hip distance apart.

b) You will be making the infinity symbol with one arm at a time. Rest your left hand on your hip. Bring the right arm straight up and touching the side of your head.

c) Your straight arm and head stay attached at the ear as you bring your arm in front and in the middle, perpendicular to your torso. Look at your middle finger and imagine a line extending straight out from it is tip.

d) Make a large infinity symbol with the extended hand, moving first up and to the left in a wide arc, down around to your center, then up to the right and around back to center. Move using your whole torso. With a soft focus notice the object furthest in the distance that your middle finger points to as it moves slowly and steadily through the infinity symbol. Do three infinity symbols with one arm before switching arms and repeating the entire exercise three more times.
iv. **Hook-ups**

The exercise can be done while standing, sitting or lying down. Students cross the left ankle on the right one. Then they intertwine fingers and bring them near the chest. They close their eyes, breathe deeply for a few minutes and relax. Then students’ free hands and legs and finger tips touch gently while they keep on breathing deeply. Hook-ups help mind and body relaxation.

v. **Calf Pump:**

This exercise can improve attention, concentration and ability to express and respond. The steps are below:

a) Stand facing a wall or solid flat structure. Lean toward the wall and place your hands flat onto the wall.

b) Bring the right leg back and have only the ball and toes of the foot in contact with the ground. Put your weight on your left leg and take a breath in.

c) Exhale for a count of eight as you bring your right heel down to the floor. Feel the stretch in your calf and only stretch as far as is comfortable. Relax and bring the heel back up off the ground.

d) Breathe in and repeat step 3, two more times with your right leg.

e) Repeat step 3, three more times with the left leg extended.
vi. **Footlex**

This movement will assist in switching on the expressive verbal and written language areas of the brain. Bring foot up to opposite knee and grasp behind the knee, the calf and ankle as you slowly point and flex the foot. End by gently massaging the foot and toes with hand.

vii. **Energy Yawn**

Energy yawn is one of the Brain Gym exercises that relieves the stress that interferes with learning and performance. The steps are:

a) Stand, sit, or lay down face up.

b) Place the middle and pointer fingers of both the left and right hands on the left and right jaw muscles respectively. To find the jaw muscles you can first find the corner bone of the jaw that joins together, then move your fingers in a bit while pressing gently. When you feel tight muscle you know you're in the right place.

c) Rub your jaw muscles with just enough pressure to feel a massage while opening your jaw in a wide, long yawning motion. You may even feel yourself yawning as you do this, it's a natural response. Close the jaw gently after the long yawn.

d) Repeat step 3 two more times or until the movement feels complete.
viii. Belly Breathing

This movement improves expressive communication and attention span.

The steps are:

a) Stand or sit comfortably.

b) Place your hands gently on your belly, right around your navel.

c) Take a long deep breath into your belly. Imagine your belly filling up, bottom first, all the way up to the top. You can imagine a pitcher being filled up with water.

d) Exhale for a count of eight. Imagine all of the air slowly being expelled.

e) Repeat steps 2 through 4, two more times or as desired.

ix. Positive Points

This movement helps relieve stress and improve memory. Touch the point above eye halfway between the eyebrow with fingertips of each hand. Close you eyes and breath slowly and deeply for a few seconds.

x. Balance buttons:

These buttons reestablish balance in every dimension: left-right, above-under, behind-before. The student massages the spot where the skull is attached to the neck and, at the same time, the navel. It improves the next learning skills: critical and decisional capacities, spelling accurateness.
xi. The active arm

The active arm lengthens muscles in the upper part of chest and shoulders. When these muscles are contracted writing and tool controlling skills are inhibited. It activates the brain for: expressive reading, diaphragm relaxation and deep breathing, hand-eye coordination and tool controlling skills.

xii. Double doodle

This is a bilateral drawing activity which consists in sketching two images with both hands. It improves these learning skills: understanding of writing, spelling accurateness, Math calculations.

C. The Discussion of Achievement

1. Definition of Achievement

Achievement is education assessment about students’ development and progress in relation with mastering subject’s matter given to students and values in the curriculum. Academic achievement is originally constructed to assess the extent of an individual’s knowledge about subjects taught in school. In teaching and learning process that consist of teacher and students activities based on direct contact in educational situation to achieve certain

purpose which is written in curriculum. This process is one unity of activities that cannot be separated between students and teacher who teach the subject. Therefore the success of teaching and learning are depend on the harmonious interaction between students and teacher in the classroom and also good achievement.

Measuring students’ achievement does not mean merely measuring their acquisition of the materials taught in class but more than that, it also measures them in terms of attitude, interest, and value toward the subject matter. In this research, achievement defined as the success gained by the students in their English class which refers to students’ formative test scores in English subject.

2. Measure students’ Achievement

In Indonesia, usually teachers administer students’ achievement through school term examination as follows:

a. Formative Test

This type examination is held to administer students learning progress from time to time. Commonly, it is held in the end of chapter of material taught.

b. Summative Test

The examination is held to administer students’ compulsory learning progress in the end of semester. Through this examination, teacher can measures students’ mastery of all material taught, teacher also can
investigate the effectiveness of teaching and learning strategies already applied to make consideration and improvement for the next teaching and learning activities.

3. Factor That Influence Achievement

According to Lisa there are several background factors that influence student achievement, home and educational background, attitude, engagement, motivation, and beliefs, learning strategies and preferences, the learning environment. There are some factors that create differential among language learners:

a. Internal Factors

The internal factors are the factor that come from the students themselves.

i. Age

Ability in learning a second language shows that the foreign language program should be started in elementary school, but experts stated that the most important fact is the timing. There are several cases showed those who started learning in adult will understand better in the instruction and lesson given by teacher. Therefore age has influence on language learning achievement.

14 Lisa De Bortoli - Sue Thomson., Contextual factors that influence the achievement of Australia’s Indigenous (Victoria: ACER Press, 2010), 2
ii. Aptitude

Aptitude is not easy to define. It is usually defined in terms of the test that have been used to measure.\textsuperscript{16} According to Carol language is relatively fixed over long periods of an individual life span, and relatively hard to modify in any significant way.\textsuperscript{17} It means that language aptitude is influenced by enduring characteristics of individual itself for long times and it is difficult to change in short time.

iii. Social Psychology

a) Motivation

In second language learning Brown states that there are two different motivation: integrative and instrumental motivation. The integrative motivation is employed when a learner integrates him/herself become part of culture and society of second language group. Instrumental motivation refers to motivation to acquire a language as means for attaining instrumental goals: a career, reading technical material, translation.\textsuperscript{18}

b) Attitude

Attitude is aspects of the development of cognition and affection of human beings. It develops in childhood and result of

\textsuperscript{16} Ibid, 207
\textsuperscript{17} Ibid, 167
\textsuperscript{18} H. Douglas brown, \textit{Principles of Language learning and Teaching}, (New Jersey: Prentice Hall, 1990), 114
parents’ and peers’ attitude, contact with different people. These attitudes form part of someone’s perception, other cultures in which someone is living.\textsuperscript{19} The role of attitude here is the attitude group of cultural influence in the process of mastery language learning.

c) Personality

Wong Fillmore in Larsen Freeman and Long observed that shy children progress more rapidly than more outgoing children in classrooms which more teacher oriented and structured, rather than oriented towards group activities.\textsuperscript{20} Thus, the personality has impact on the success of language learning.

d) Cognitive Style

The word cognitive style is closely with personality, the preferred way in which individuals process information or approach a task. Harnett and Larsen Freeman and Long states that most of research in the field of cognitive types share motif an which the research in the field or personality, which is set interaction effects between cognitive styles and instructional practice.\textsuperscript{21} Most of teachers will not find themselves in situation where students can be streamed according to particular cognitive style.

\begin{flushleft}
\textsuperscript{19} Ibid, 127
\textsuperscript{20} Diane Larsen-Freeman and Michael H. Long, An Introduction to second language Acquisition Research, (New York: Longman, 1990), 205-207
\textsuperscript{21} Ibid, 211
\end{flushleft}
Therefore, a reasonable alternative might be to diversify language instruction as much as possible based on the variety of cognitive styles represented among the students.

e) Learning Strategies

In learning strategies, students have to learn how they do for themselves what is usually done for those teachers in the classroom. Our efforts to help the students by improving in language skill must be equipped with a balance systematic approach to develop and refine skills they have to learned.\(^{22}\)

b. External Factors

External factors are those come from environment. Such as:

i. Parents

a) Parents’ Education

In the family every person or student need attention from her/his parents to reach her/his learning achievement.\(^{23}\) Parents will determine whether students can reach high learning achievement or not. Parents care is shown by affection, advices. Parents who don’t care enough to their children learning achievement will become the cause of students learning difficulties. Children need parents’ guidance to learn about responsibility. Learn without parents’ guidance make students feel difficult in learning.

\(^{22}\) Ibid, 212
\(^{23}\) Ibid, 214
b) Relationship between parents and children

In the family there must be a good relationship between parents and children. It will occur peacefulness.\(^\text{24}\) It can create good learning condition so students learning achievement can be created well. Less of parents’ affection occur emotional insecurity. A child will feel difficult in learning if he/she gets less affection from her/his parents.

c) Economic Condition

Economic level that categorize as poor family make parents can not prepare enough learning tools for their children and even make students can not get a good education place.\(^\text{25}\) It will become inhibitor for children to learning well and increase learning achievement. But economic level that categorized as reach family sometimes give negative impact for students learning achievement too. Because of their parents’ wealth, they become lazy to study and always be extravagant and forget their duty to study seriously.

d) Home Condition

Home condition that very crowded make children can not learn well. Their concentration will be disturbed by the noise so they will feel too hard to study.

\(^{24}\) Ibid, 216
\(^{25}\) Ibid, 219
ii. School

a) Teacher

Teacher is one of school environmental factors who has important role to increase students learning achievement. Teacher is a subject in education who has duty to transfer the knowledge to the students. So, a teacher has to able to master the topic that will be transferred and can explain it well and control class condition. Teacher will become source of learning difficulties if he/she does not fulfill the requirement as an educator.

b) Learning Media

The lack of learning media makes the learning process become ineffective especially practicum subject. The lack of laboratory tools will be occur students’ difficulties in learning so teacher use lecture method that make student become passive and it possible to hamper students learning achievement.

c) Infrastructure

The condition of infrastructure is refers to class room. The room has to be comfortable to learn so that students can concentrate in learning. The classroom that is not comfortable for example dark or sultry will break students concentrate so the learning process will not running well.

---

26 Ibid, 220
d. School Time and Discipline

The best time for learning process is in the morning because students condition still optimal in the morning. If learning process is in the afternoon, students’ condition is not optimal anymore to learn. Besides that discipline also give influence for students learning achievement.

---

27 Ibid, 223