Published every April and October ISSN 2407-7348 (Print)
South-East Asian Journal for Youth, Sports & Health Education
SIPATAHOENAN

NENDEN DESI MULYANI APANDI

Effectiveness a Method of Brain Gym to Lower the Level of Burnout of Students to Study

ABSTRACT: *Learning activities are the activities the most basic in the whole process educated at a school. Success in learning activities depends to teachers in given the lectures, and interaction between teacher and their students. In receiving the information, the brain of the back be difficult to be expressed, so that people feel stress that will result in eager to study and work being reduced. The purpose of this study was to examine the effectiveness of Brain Gym method to reducing burn out on student learning at the SMP (Sekolah Menengah Pertama or Junior High School) of Aisyiyah Boarding School in Bandung, West Java, Indonesia. A quasi experimen uses non-equivalent control group design: one of non-equivalent design pre-test and post-test control group scheme model. The open ended burn out instrument were used to collected data on this study, in which all items of the instrument are favorable and the subject completed self-regulation questionnaires required students to rate their level of agreement on 25 items using 1-3 point. One hundred students of SMP of Aisyiyah Boarding School in Bandung, West Java, Indonesia obtained consent to participate in the study. Analysis data revealed that the hypothesis of a significance value (sig. 2-tailed) using t-test 0.001 (p < 0.05); then, the result showed Ho was rejected. So, the Brain Gym method effective to reduce of burnout on student learning.*
KEY WORD*: Brain Gym; Burnout; Student Learning.*

INTISARI*: "Keefektifan Metode Asah Otak untuk Menurunkan Tingkat Kejenuhan Siswa dalam Belajar". Kegiatan belajar adalah kegiatan yang paling mendasar dalam seluruh proses pendidikan di sebuah sekolah. Keberhasilan dalam kegiatan pembelajaran tergantung pada guru dalam memberikan ceramah, dan interaksi antara guru dan siswa mereka. Didalam menerima informasi, otak bagian belakang menjadi sulit diekspresikan, sehingga orang merasa stres yang berakibat keinginan untuk belajar dan bekerja menjadi berkurang. Tujuan dari penelitian ini adalah untuk menguji efektivitas metode Asah Otak dalam mengurangi kejenuhan belajar siswa di SMP (Sekolah Menengah Pertama) Aisyiyah Boarding School di Bandung, Jawa Barat, Indonesia. Kuasi eksperimen dengan menggunakan desain kelompok kontrol non-ekuivalen: salah satunya dari model skema kelompok kontrol pra-test dan pasca-test non-ekuivalen. Instrumen buka tutup tentang kejenuhan digunakan untuk mengumpulkan data pada penelitian ini, di mana semua item instrumen yang disukai dan subjek menyelesaikan kuesioner tentang pengaturan diri yang mengharuskan siswa menilai diri mereka sendiri dengan tingkat kesepakatan pada 25 item menggunakan 1-3 poin. Seratus siswa SMP Aisyiyah Boarding School di Bandung, Jawa Barat, Indonesia memperoleh izin untuk berpartisipasi dalam penelitian ini. Analisis data mengungkapkan bahwa hipotesis nilai signifikansi (sig. 2-tailed) menggunakan uji-t 0,001 (p < 0.05); kemudian, hasilnya menunjukkan Ho ditolak. Jadi, metode Asah Otak itu efektif untuk mengurangi kejenuhan dalam pembelajaran siswa.*
KATA KUNCI*: Asah Otak; Kejenuhan; Pembelajaran Siswa.*

About the Author: **Nenden Desi Mulyani Apandi, S.Pd.** is a Student of Educational Psychology Study Program SPs UPI (School of Postgraduate, Indonesia University of Education), Jalan Dr. Setiabudhi No.229 Bandung 40154, West Java, Indonesia. For academic interests, the Author is able to be contacted via e-mail address at: ddnenden@gmail.com

Suggested Citation: Apandi, Nenden Desi Mulyani. (2019). "Effectiveness a Method of Brain Gym to Lower the Level of Burnout of Students to Study" in *SIPATAHOENAN: South-East Asian Journal for Youth, Sports & Health Education*, Volume 5(1), April, pp.53-64. Bandung, Indonesia: Minda Masagi Press owned by ASPENSI with a print-ISSN 2407-7348.

Article Timeline: Accepted (January 15, 2019); Revised (March 2, 2019); and Published (April 30, 2019).

INTRODUCTION

Learning activities are the activities the most basic in the whole process educated at a school. Successfully whereabouts of the achievement of a goal education many depend on how the learning process experienced by school tuition (Leithwood *et al*., 2004; Fry, Ketteridge & Marshall eds., 2009; and Slameto, 2010:1). Indicators the success of learning characterized by participation and the spirit of school tuition for prose learning held (Kuh *et al*., 2006; Slameto, 2010; and Snilstveit *et al*., 2016).

According to the Holistic Theory proposed by Diane Papalia, Sally Wendoks Old & Ruth Duskin Feldman (2009), and other scholars, aged 12-15 years often changed the mood, covering a feeling of shame, self awareness, lonely, and depressed. As a teenager more complex thinking with change happened (Nasution, 2007; Papalia, Old & Feldman, 2009; and Nixon, 2014).

Based on the research conducted by Eka K. Zuni & Christiana Elisabeth (2014), in SMAN (*Sekolah Menengah Atas Negeri* or Public Senior High School) 22 Surabaya, East Java, Indonesia, found that students are experiencing saturation learning can be seen from several factors that determine learning in the classroom are learning students at the time they are held in the cooperative/canteen, late coming in class, play handphone/gadgets of their class, do not listen to the teacher as he/she explained in the class lessons (*cf* Zuni & Elisabeth, 2014; Kamilah & Anugerahwati, 2016; and Tuyen, 2017).

According to W.B. Schaufeli & Qiao Hu (2009), and other scholars, burnout in essence is to work, school tuition as the learner also, has activity work that is learn so susceptible having to burnout (*cf* Schaufeli & Hu, 2009:397; Yotanyamaneewong, 2012; and Maslach & Leiter, 2016). Meanwhile, R.E. Reber & D.B. Roberts (2000), as cited also in W.B. Schaufeli & Qiao Hu (2009), said that burnout learning is a time certain of which are used to learn, but do not produce results. A student had burnout learning feel to knowledge and skill obtained from learning no progress (*cf* Reber & Roberts, 2000; Schaufeli & Hu, 2009:179; and Chang, 2011).

Success in learning activities depends to teachers in given the lectures, and interaction between teacher and their students. Mechanism integration the brain weakening and parts of the brain certain less serves. Received information, the brain of the back be difficult to be expressed, so that people feel not been successful and stress will result in eager to study and work being reduced (Martyn, 2007; Nombre, 2012; and Serdyukov, 2017).

Based on these things should improve learning, by applying a method of brain gym, to reduce the level of surfeit of students in learning. This is because of the motions simple in brain gym can stimulate students ability and so students can feel happy and happy, when follow the process learning (Syah, 2009; Azizah, Martiana & Soedirham, 2017; and Apandi, 2018).

In this context, E. Sutarjo & D. Arum (2014), and other scholars, in their research explained that quite a lot of students, who experienced boredom, when he/she was learning in a relative long time. They feel lazy, bored, tired, irritable and annoyed, guilt and blame, reluctance and helplessness, feeling tired every day, often paying attention to hours, while they learned. That's because the learning method by the teachers is not varied (Syah, 2009; Sutarjo & Arum, 2014; and Dunckley, 2015).

The use of distinct method is expected to be able to increase their motivation and learning, and reduce the level of surfeit looking for a good place, even brought a positive influence for students. Surfeit learning can be the overwhelming forces of invading one of the students, when he/she has lost motivation of the creation was and gradual loss of muscle the consolidation of one of the level a specified skill, before students to the level skill next (Phares & Chaplin, 1997; Agustin, 2011; and Lipson, 2014).

Brain the gym can also open parts of the brain, who formerly covered or obstructed

ISSN 2407-7348 *and* ***www.journals.mindamas.com/index.php/sipatahoenan***

Table 1:
Research Design

Group	Pre-Test	Treatment	Post-Test
Experiment	O_1	X	O_2
Control	O_1	-	O_2

***Information*:**
X = Treatment or treatments are Brain Gym exercises.
O1 = Pre-test to measure student learning saturation.
O2 = Post-test to determine the level of change in student learning saturation after being treated.

so as to learning activities held using all the brain or whole brain (Jager, 2005; Ayinosa, 2009:36; and Doidge, 2017). Accordingly, P.E. Dennison & G.E. Dennison (2009), and other scholars, said also that Brain Gym (Brain Gymnastics) was a series of simple activities of whole-brain learning, used by students in Edu-K (Educational Kinesiology) to improve their skills; it makes all kinds of lessons easier and very helpful for academic ability (Dennison & Dennison, 2009; Hafez, 2017; and Apandi, 2018).

The Brain Gym method expected to change students become more effective, interactive, and relaxed during lurning. When student learned over load, it make student learn, but no result just feel burnout on the class, so it is the task of teachers to create learning activities a conducive state on the class (Flook *et al.*, 2013; Jacobson, 2016; and Apandi, 2018).

METHODS

This study uses a quantitative approach. Research was designed to answer research questions, specifically by using statistical analysis. The research method used is quasi-experiment method, in which the determination of the research sample is adjusted with certain criteria to be studied. The research design uses non-equivalent control group design with the reason this research design has been very often used in the world of education (Creswell, 2012:13; Garg, 2016; and Appelbaum *et al.*, 2018).

There are two groups that are selected non-random, i.e. treatment group (experiment) and control group. Both get the pre-test and post-test. The difference in outcomes in the dependent variables in the experimental and control groups may indicate, whether or not the treatment is effective (Creswell, 2012; White & Sabarwal, 2014; and Alessandri, Zuffiano & Perinelli, 2017). The research model scheme of the non-equivalent pre-test to post-test control group design is as shown in table 1.

The instrument to be used in this study is a questionnaire or attitude scale questionnaire used to measure pretest and posttest results. The saturation learning instrument consists of 25 items of statements that provide an overview of emotional fatigue, cynicism, and decreased academic conviction. This open ended saturation learning instrument uses R. Likert (1932)'s ratings (*cf* Likert, 1932; Creswell, 2012; and Artino, Jr. *et al.*, 2014).

The respondent states how similar he/she is to each of these statements in three choices: Frequently, Sometimes, and Never, by giving a checklist (√) on one of the alternative answers that are considered to be most appropriate to the respondent's self. All items in this instrument are favorable and item scoring burnout level is done by giving score 1-3. The instrument feasibility test is performed to determine the feasibility of the instrument in terms of construct, language, and content; for the feasibility test of the instrument is performed by holding judgment by expert lecturer by asking for opinions and giving his/her judgment (Likert, 1932; Creswell, 2012; and Boateng *et al.*, 2018).

The validity test used in this study used logit scale with Rasch modeling. Validity test is performed to check the items that are not appropriate in the questionnaire and check the respondent that is not appropriate

Table 2:
Criteria for Reliability Coefficient

Reliability Degrees	Criteria
Person	0.90
Item	0.89

or outliers or misfit (Boone, 2016; Boone, Noltemeyer & Yates, 2017; and Mokshein, Ishak & Ahmad, 2019).

Unaccountable responders or who fill out questionnaires randomly or lack the ability to understand the questionnaire can be eliminated. Likewise with items that are not suitable can be eliminated, if it does not meet the criteria (Mathers, Fox & Hunn, 2007; Creswell, 2012; and Boone, 2016).

The reliability test used in the research uses the help of Winstep software with Rasch model. The reliability test is used to analyze the questionnaire items and person (respondent). The higher the reliability (close to the number one), then, it can be said that errors that occur during measurement is very small. This means that the measuring tool is more reliable (Lu *et al.,* 2013; Boone, Noltemeyer & Yates, 2017; and Yasin, Yunus & Ismail, 2018). The table 2 describes the reliability criteria by using Coefficient Alpha (α) and Rasch Model. The reliability test used in the research uses the help of Winstep software with Rasch model.

Data analysis in this study include: (1) *Homogeneity Test*; (2) *Normality Test;* and (3) *Basic Decision Making*. The explanation for each section is following here:

Firstly, *Homogeneity Test*. The homogeneity test of variance is intended to know whether the control and experiment class group has homogeneous variance, to test the homogeneity of H. Levene (1960)'s test using SPSS (Statistical Package for Social Sciences) 22.0 for Windows program, with significance level of 0.05, the test criterion is Ho if the value of Sig < α (Levene, 1960; Creswell, 2012; and Derrick *et al.*, 2018).

Secondly, *Normality Test*. Normality test is done by using SPSS (Statistical Package for Social Sciences) 22.0 for Windows program by using Probability plot, with criteria if p-value > 0.05, then, normal distributed data, otherwise if p-value < 0.05, then, data is not normally distributed (Brace, Kemp & Sneglar, 2000; Field, 2006; and Garth, 2008).

Thirdly, *Basic Decision Making*. The hypothesis testing of the effectiveness of Brain Gym method to decrease the student's burnout level of SMP (*Sekolah Menengah Pertama* or Junior High School) of Aisyiyah Boarding School in Bandung, West Java, Indonesia, for academic year 2017/2018 was done by using Paired Samples, whereas to compare the final test result of control group and experiment was done by using Independent Samples Test through SPSS 22.0 for Windows program with assumption both homogeneous variance, or equal variance assumed, with a significance level of 0.05 (Field, 2006; Garth, 2008; and Apandi, 2018).

The hypothesis is formulated in the form of statistical hypothesis (two-party test), as follows: Statistical Hypothesis, if significance > 0.05, then, Ho is accepted; and if significance < 0.05, then, Ho is rejected.

RESULTS AND DISCUSSION

Research conducted in the SMP (*Sekolah Menengah Pertama* or Junior High School) of Aisyiyah Boarding School students in Bandung, academic year 2017/2018, which address at the Jalan Rancagoong II No.1, Kelurahan Gumuruh, Batununggal District, Bandung City, West Java, Indonesia. The total number of students in this school amounted to 130 students, but in this study only took a sample of 50 students, who became experimental class and 50 students who became the control class.

The study was conducted for 4 weeks, with 8 times face-to-face in the class. The data obtained in this study is data student's

ISSN 2407-7348 *and* ***www.journals.mindamas.com/index.php/sipatahoenan***

Table 3:
Description of Data on Saturation Result of Early Stage (Pre-Test)

Class	N	N-Min	N-Max	Mean	Std. Dev	Varians
Control	50	34	74	61.32	9.983	99.651
Experiment	50	43	73	62.04	9.044	81.794

Table 4:
Tests of Normality

	Kolmogrov-Smirnov[a]		
	Statistic	df	Sig.
Control	.119	50	.073*
Experiment	.139	50	.017*

Notes: * = This is a lower bound of the true significance.
A = Lilliefors Significance Correction.

Table 5:
Homogeneity of Two Preliminary Variance Tests (Pre-Test)

Levene Statistic	df1	df2	Sig.
.279	1	98	.599

burnout level and effective or not Brain Gym method to decrease student's saturation level in the Aisyiyah Boarding School of Bandung.

Pre-Test Data Analysis. General description of the saturation of learning at the SMP (*Sekolah Menengah Pertama* or Junior High School) of Aisyiyah Boarding School students of Bandung, West Java, Indonesia, for academic year 2017/2018, describes the average of student learning saturation in the early stages for the control class and experiment, as presented in the table 3.

In the table 3 shows that the average saturation of students' learning for the control class is 61.32. While the mean of saturation study for experiment class is 62.04. Then, obtained standard deviation for the class of the 9.983 and 9.983 for the experimental class. Then, it can be seen description of student's burnout level of SMP (*Sekolah Menengah Pertama* or Junior High School) of Aisyiyah Boarding School in Bandung West Java, Indonesia's difference of mean between control class and experiment.

Pre-Test Data Normality Test. Normality test is done by using the program SPSS (Statistical Package for Social Sciences) 22.0 for Windows that aims to determine whether the data pre-test and post-test burnout to normal distribution or not. The sample criterion is normally distributed if P-value > 0.05 (Brace, Kemp & Sneglar, 2000; Field, 2006; and Garth, 2008). Normality test results data can be seen in the table 4.

Obtained probability value (sig) in A. Kolmogorov (1933) and N. Smirnov (1948)'s test experimental class of 0.073 and control class of 0.017. Criteria testing if the probability value (sig) is greater than $\alpha = 0.05$, then the distribution of data is normally distributed. Thus, the sig value for the experimental class is 0.073 > 0.005, then the normal distributed data (Ho) and the value for the control class is 0.017 > 0.005, then the data is normally distributed (Ho). Based on the value of these two data means that both data come from a normally distributed population (*cf* Kolmogorov, 1933; Smirnov, 1948; and Vrbik, 2018).

Pre-Test Data Homogeneity Test. The homogeneity test of variance was intended to know, whether the control and experiment class group had homogeneous variance, to test the homogeneity of H.

Table 6:
Description of Data on Saturation Result of Early Stage (Post-Test)

Class	N	N-Min	N-Max	Mean	Std. Dev	Varians
Control	50	41	68	53.58	6.664	44.412
Experiment	50	45	72	58.24	6.965	48.513

Table 7:
Tests of Normality

	Kolmogrov-Smirnov[a]		
	Statistic	df	Sig.
Control	.074	50	.200*
Experiment	.120	50	.068*

Notes: * = This is a lower bound of the true significance.
A = Lilliefors Significance Correction.

Table 8:
Tests of Homogenious Post-Test

Levene Statistic	df1	df2	Sig.
.040	1	98	.842

Levene (1960)'s test using SPSS (Statistical Package for Social Sciences) 22.0 for Windows program with significance level 0.05, the testing criterion is Ho if the value of Sig < α (Levene, 1960; Field, 2006; Garth, 2008). See table 5.

Homogeneity test by using leave test can be seen significant value 0.599; hence, can be concluded that student in control and experiment class is said homogeneous, because its significance value greater than 0.05 (*cf* Viglione, Laio & Claps, 2007; Rahmah, 2017; and Apandi, 2018).

Post-Test Data Analysis. Data processing result for final step (post-test) in experimental control class can be obtained by statistical data through SPSS (Statistical Package for Social Sciences) 22.0 for Windows program, which consist of maximum value, minimum value, average, standard deviation, and variance. This research take sample class and class each class of experiments amounted to 50 students, so with the total number of 100 students (Brace, Kemp & Sneglar, 2000; Field, 2006; and Garth, 2008). See table 6.

The data of students' learning saturation result in the final stages (post-test) shows that the mean value of the control class is 53.58, and for the experimental class is 58.24. Then, obtained standard deviation on control class equal to 6.664, and experiment class equal to 6.965. The results of this data analysis provide an illustration that the average on the outcome of the study (post-test) at the SMP (*Sekolah Menengah Pertama* or Junior High School) of Aisyiyah Boarding School in Bandung, West Java, Indonesia, the decrease of student learning saturation for the experimental class (*cf* Field, 2006; Garth, 2008; and Apandi, 2018).

Post-Test Normality Test. It is consisted of: (1) *Tests of Normality*; and (2) *Tests of Homogenious Post-Test*. The expnalations are as following here:

Firstly, *Tests of Normality*. The probability value (sig) in A. Kolmogorov (1933) and N. Smirnov (1948)'s experimental class test was 0.068, and the control class was 0.200. Criteria testing if the probability value (sig) is greater than α = 0.05, then the distribution of data is normally distributed (*cf* Kolmogorov, 1933; Smirnov, 1948; and Vrbik, 2018).

Thus, the sig value for the experimental class is 0.068 > 0.005, then the normal distribution (H0) and the control class value is 0.200> 0.005, then the normal distributed data (Ho), based on the second data means the two data are from the

ISSN 2407-7348 *and* ***www.journals.mindamas.com/index.php/sipatahoenan***

Table 9:
Independent Samples Test (Pre-Test)

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Pre-test	Equal variances assumed	.279	.599	-.378	98	.706	-.720	1.905	-4.500	3.060
	Equal variances not assumed			-.378	97.060	.706	-.720	1.905	-4.501	3.061

Table 10:
Independent Samples Test (Post-Test)

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Post-test	Equal variances assumed	.040	.842	-3.418	98	.001	-4.660	1.363	-7.365	-1.955
	Equal variances not assumed			-3.418	97.810	.001	-4.660	1.363	-7.365	-1.955

normally distributed population. See table 7.

Secondly, *Tests of Homogenious Post-Test*. Test homogeneity of variance by using H. Levene (1960)'s test is shown in table 8. Its significance value is 0.040. Since the significance value is greater than 0.05, it can be concluded that the students of the experimental class and the control class come from a population having the same variance, or both classes can be said to be homogeneous (Levene, 1960; Garth, 2008; and Apandi, 2018). See again the table 8.

About the Two-Tier Equivalence Test (t-Test). The hypothesis testing of the effectiveness of Brain Gym method to decrease the saturation level of student learning of SMP (*Sekolah Menengah Pertama* or Junior High School) of Aisyiyah Boarding School in Bandung, West Java, Indonesia, academic year 2017/2018, was done by using Paired Samples, whereas to compare the final test result of control group and experiment was done by using Independent Samples Test through SPSS (Statistical Package for Social Sciences) 22.0 for Windows program with assumption both homogeneous variance (equal variance assumed) with a significance level of 0.05 (Levene, 1960; Brace, Kemp & Sneglar, 2000; Field, 2006; Garth, 2008; and Apandi, 2018).

The hypothesis is formulated in the form of statistical hypothesis (two-party test), as follows:

Statistical Hypothesis for Pre-test and Post-test: If significance > 0.05, then Ho is accepted. If significance < 0.05, then Ho is rejected.

Paired Samples Test. The value of Paired Samples Test, test results in pre-test and post-test of experimental group using Brain Gym method, showed a

ISSN 2407-7348 and www.journals.mindamas.com/index.php/sipatahoenan

significance value of 0.000. Because of the significance of pre-test and post-test data in the experimental group using Brain Gym < 0.05, it can be concluded that there is influence of Brain Gym learning method to decrease student's burnout level (*cf* Azizah, Martiana & Soedirham, 2017; Rahadianita & Prasetyo, 2016; and Apandi, 2018). See tables 9 and 10.

Pre-test and post-test results for control and experiment data, in pre-test data it can be seen that the significance value (sig-2-tailed) with the t-test is 0.706. Because the probability value is greater than 0.05, then Ho is accepted. Thus, it can be concluded that the pre-test of Brain Gym methods to decrease the student's burnout level did not differ significantly. While on the final data (post-test) can be seen that the significance value (sig. 2-tailed) with the t-test is 0.001. Because the probability value is less than 0.05, then Ho is rejected. So, it can be concluded that there is a different application of Brain Gym for lowering the saturation level of student learning (*cf* Azizah, Martiana & Soedirham, 2017; Rahadianita & Prasetyo, 2016; dan Apandi, 2018).

CONCLUSION [1]

Based on data analysis and discussion above that Brain Gym method is very effective in reducing student's burnout level. Brain Gym method is an attempt to make students feel more calm, the body becomes more fresh that will bring changes in students. In the pre-test and post-test data, the experimental group using the Brain Gym method showed a significance value of 0.000. Because of the significance of pre-test and post-test data in the experimental group using Brain Gym < 0.05, it can be concluded that there is influence of Brain Gym learning method to decrease student's burnout level.

Based on conclusion the results of the study, there are several points that recommended by the Author that research was beneficial, including: fisrtly, a method of Brain Gym can be used as a method of their experiences in the class, so with the implementation of this method will be habituation that should be adopted by students when the children experienced burnout in learning; secondly, a method of Brain Gym was not only done to sent down burnout learning, but to assist in cognitive development and the ability academic; and thirdly, to further research suggested a method of Brain Gym further developed to be habituation for each schools.[2]

References

Agustin, M. (2011). *Permasalahan Belajar dan Inovasi Pembelajaran*. Bandung: PT Refika Aditama.

Alessandri, G., A. Zuffiano & E. Perinelli. (2017). "Evaluating Intervention Programs with a Pretest-Posttest Design: A Structural Equation Modeling Approach" in *Frontiers of Psychology*, Volume 8:223 [March]. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5332425/ [accessed in Bandung, West Java, Indonesia: October 9, 2018].

Apandi, Nenden Desi Mulyani. (2018). "Efektivitas *Brain Gym* untuk Menurunkan Tingkat Kejenuhan Belajar Siswa SMP di Kota Bandung". *Unpublished Master's Thesis*. Bandung: SPs UPI (School of Postgraduate, Indonesia University of Education). Available online also at: http://repository.upi.edu/40383/1/T_PP_1503308_Title.pdf [accessed in Bandung, West Java, Indonesia: January 8, 2019].

Appelbaum, Mark *et al.* (2018). "Journal Article Reporting Standards for Quantitative Research in Psychology: The APA Publications and Communications Board Task Force Report" in *American Psychologist,* Volume 73, No.1, pp.3-25. Available online also at: https://www.apa.org/pubs/journals/releases/amp-amp0000191.pdf [accessed in Bandung, West Java, Indonesia: January 8, 2019].

Artino, Jr., A.R. *et al.* (2014). "Developing Questionnaires for Educational Research: AMEE Guide No.87" in *Medical Teacher*, Volume 36(6), March, 463-472. Available online also at:

[1]***Acknowledgment:*** I would like to thanks to my Advisor, Dr. Mubiar Agustin, also as a Lecturer at the SPs UPI (School of Postgraduate, Indonesia University of Education) in Bandung, West Java, Indonesia, who guided and supervised me in conducting the research and writing the article for the scholarly journal. However, all contents and its interpretations pertaining this article are become my own responsibilty academically.

[2]***Statement:*** I am declaring that this article is my research paper and, most importantly, it is an original work and not a product of plagiarism; and it is not submitted, reviewed, and published yet by other scholarly journals.

ISSN 2407-7348 *and* ***www.journals.mindamas.com/index.php/sipatahoenan***

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4059192/ [accessed in Bandung, West Java, Indonesia: October 9, 2018].

Ayinosa. (2009). "Brain Gym". Available online at: http://book.store.co.id/2009 [accessed in Bandung, West Java, Indonesia: January 11, 2018].

Azizah, Lilik Ma'rifatul, Tri Martiana & Oedojo Soedirham. (2017). "The Improvement of Cognitive Function and Decrease the Level of Stress in the Elderly with Brain Gym" in *International Journal of Nursing and Midwifery,* Volume 1, Issue 1 [May-August]. Available online also at: https://media.neliti.com/media/publications/275710-the-improvement-of-cognitive-function-an-f7da3e53.pdf [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Boateng, G.O. *et al.* (2018). "Best Practices for Developing and Validating Scales for Health, Social, and Behavioral Research: A Primer" in *Frontiers of Psychology,* Volume 6:149 [June]. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6004510/ [accessed in Bandung, West Java, Indonesia: January 9, 2019].

Boone, W.J. (2016). "Rasch Analysis for Instrument Development: Why, When, and How?" in *Life Sciences Education,* Volume 15(4), Winter. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5132390/ [accessed in Bandung, West Java, Indonesia: October 9, 2018].

Boone, W.J., A. Noltemeyer & G. Yates. (2017). "Rasch Analysis: A Primer for School Psychology Researchers and Practitioners" in *Journal of Cogent Education*, Volume 4, Issue 1. Available online also at: https://www.tandfonline.com/doi/full/10.1080/2331186X.2017.1416898 [accessed in Bandung, West Java, Indonesia: October 9, 2018].

Brace, N., R. Kemp & R. Sneglar. (2000). *SPSS for Psychologists*. New York: Macmillan Press.

Chang, Yu-Hui. (2011). "A Review of 'A Lifelong Call to Learn: Continuing Education for Religious Leaders'" in *Journal of Religious Education*, Volume 106, Issue 3. Available online also at: https://www.tandfonline.com/doi/abs/10.1080/00344087.2011.570190 [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Creswell, Jhon W. (2012). *Research Design: Pendekatan Kualitatif, Kuantitatif, dan Mixed.* Yogyakarta: Pustaka Pelajar, Translation.

Dennison, P.E. & G.E. Dennison. (2009). *Brain Gym, Senam Otak: Buku Panduan Edisi Indonesia*. Jakarta: PT Grasindo, Translation.

Derrick, B. *et al.* (2018). "Tests for Equality of Variances between Two Samples which Contain Both Paired Observations and Independent Observations" in *Journal of Applied Quantitative Methods,* Volume 13(2), pp.36-47.

Doidge, Norman. (2017). "The Brain that Changes Itself: Stories of Personal Triumph from the Frontiers of Brain Science". Available online at: https://www.brainmaster.com/software/pubs/brain/contrib/The%20Brain%20That%20Changes%20Itself.pdf [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Dunckley, V.L. (2015). "Screentime is Making Kids Moody, Crazy, and Lazy" in *Psychology Today*, on August 18. Available online also at: https://www.psychologytoday.com/intl/blog/mental-wealth/201508/screentime-is-making-kids-moody-crazy-and-lazy? [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Field, Andy. (2006). *Discovering Statistics Using SPSS*. New York: Sage.

Flook, Lisa *et al.* (2013). "Mindfulness for Teachers: A Pilot Study to Assess Effects on Stress, Burnout, and Teaching Efficacy" in *Mind Brain Education*, Volume 7(3), September. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3855679/ [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Fry, Heather, Steve Ketteridge & Stephanie Marshall [eds]. (2009). *A Handbook for Teaching and Learning in Higher Education: Enhancing Academic Practice*. New York and London: Routledge, 3rd edition. Available online also at: https://www.sun.ac.za/english/faculty/arts/Documents/HandbookTeachingLearningHigheEd.pdf [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Garg, Rakesh. (2016). "Methodology for Research I" in *Indian Journal of Anaesthesia,* Volume 60(9), September, pp.640-645. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5037944/ [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Garth, Andrew. (2008). "Analysing Data Using SPSS: A Practical Guide for those Unfortunate Enough to Have to Actually Do it". Available online at: https://students.shu.ac.uk/lits/it/documents/pdf/analysing_data_using_spss.pdf [accessed in Bandung, West Java, Indonesia: October 9, 2018].

Hafez, Rehab. (2017). "Effect of Brain Gym on Manipulating Skills and Balance for Beginners in Rhythmic Gymnastics" in *Science, Movement, and Health*, Volume XVII, Issue 1 [January], pp.66-72. Available online also at: http://www.analefefs.ro/anale-fefs/2017/i1/pe-autori/REHAB%20Hafez.pdf [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Jacobson, Donna. (2016). "Causes and Effects of Teacher Burnout". *Unpublished Doctoral Thesis*. USA [United States of America]: Walden University. Available online also at: https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=3938&context=dissertations [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Jager, Melodie De. (2005). "An Evaluation of Brain Gym as a Technique to Promote Whole Brain Learning: A Personal and Professional Perspective". *Unpublished Ph.D. Thesis*. UK [United Kingdom]: Faculty of Education and Nursing, the Rand Afrikaans University. Available online also at: https://core.ac.uk/download/pdf/54189836.pdf [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Kamilah, Nur & Mirjam Anugerahwati. (2016). "Factors Contributing to Teachers' Resistence in Integrating ICT in EFL Classroom in Senior High School" in *ELLITE: Journal of English Language, Literature, and Teaching*, Vol.01, No.02 [November]. Available online also at: http://jurnal.unmuhjember.ac.id/index.php/ELLITE/article/viewFile/471/361 [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Kolmogorov, A. (1933). "Sulla Determinazione Empirica di Una Legge di Distribuzione" in *G. Ist. Ital. Attuari,* Volume 4, pp.83-91.

Kuh, George D. *et al.* (2006). "What Matters to Student Success: A Review of the Literature". *Commissioned Report* for the National Symposium on Postsecondary Student Success: Spearheading a Dialog on Student Success. Available online also at: https://nces.ed.gov/npec/pdf/kuh_team_report.pdf [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Leithwood, Kenneth *et al.* (2004). "How Leadership Influences Student Learning: Review of Research". Available online at: https://www.wallacefoundation.org/knowledge-center/Documents/How-Leadership-Influences-Student-Learning.pdf [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Levene, H. (1960). "Robust Tests for Equality of Variances" in Ingram Olkin *et al.* [eds]. *Contributions to Probability and Statistics: Essays in Honor of Harold Hotelling*. USA [United States of America]: Stanford University Press, pp.278-292.

Likert, R. (1932). "A Technique for the Measurement of Attitudes" in *Archives of Psychology,* Volume 140, pp.1-55.

Lipson, Benjamin. (2014). "The Effects of Task Difficulty and Reward Opportunity on Motivation" in *The Huron University College Journal of Learning and Motivation*, Volume 52, Issue 1, Article 8.

Lu, Y.M. *et al.* (2013). "Measurement Precision of the Disability for Back Pain Scale-by Applying Rasch Analysis" in *Health and Quality of Life Outcomes,* Volume 11. Available online also at: https://hqlo.biomedcentral.com/articles/10.1186/1477-7525-11-119 [accessed in Bandung, West Java, Indonesia: October 9, 2018].

Martyn, Margie. (2007). "Clickers in the Classroom: An Active Learning Approach" in *EQ: Educause Quarterly,* Volume 30(2).

Maslach, C. & M.P. Leiter. (2016). "Understanding the Burnout Experience: Recent Research and its Implications for Psychiatry" in *WORLD PSYCHIATRY: Official Journal of the World Psychiatric Association,* Volume 15(2), June, pp.103-111. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4911781/ [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Mathers, N., N. Fox & A. Hunn. (2007). "Surveys and Questionnaires" in *The NIHR RDS for the East Midlands/Yorkshire & the Humber*. Available online also at: https://www.rds-yh.nihr.ac.uk/wp-content/uploads/2013/05/12_Surveys_and_Questionnaires_Revision_2009.pdf [accessed in Bandung, West Java, Indonesia: October 9, 2018].

Mokshein, Siti Eshah, Haliza Ishak & Hishamuddin Ahmad. (2019). "The Use of Rasch Measurement Model in English Testing" in *Cakrawala Pendidikan,* Vol.38, No.1 [February]. Available online also at: https://media.neliti.com/media/publications/272189-the-use-of-rasch-measurement-model-in-en-669a833a.pdf [accessed in Bandung, West Java, Indonesia: March 2, 2019].

Nasution, I.K. (2007). *Stres pada Remaja*. Medan: Publikasi Program Studi Psikologi USU [Universitas Sumatera Utara].

Nixon, C.L. (2014). "Current Perspectives: The Impact of Cyberbullying on Adolescent Health" in *Adolescent Health, Medicine, and Therapeutics*, Volume 5 [August], pp.143-158. Available online also at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4126576/ [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Nombre, A.Y. (2012). "The Importance of Teaching Listening and Speaking Skills". *Unpublished Master's Thesis*. Spain: Facultad de Educacion UCM [Universitas Complytensis Matritensis]. Available online also at: https://www.ucm.es/data/cont/docs/119-2015-03-17-12.RocioSeguraAlonso2013.pdf [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Papalia, Diane, Sally Wendoks Old & Ruth Duskin Feldman. (2009). *Human Development*. New York: McGraw-Hill, International Student Edition.

Phares, E.J. & W.F. Chaplin. (1997). *Introduction to Personality*. USA [United States of America]: Addison-Wesley Educational Publishers, Inc., 4th edition.

Rahadianita, Natasha & Anggun Resdasari Prasetyo. (2016). "Efektivitas Brain Gym terhadap Peningkatan Kemampuan Fonemik pada Anak Usia Dini" in *Jurnal Empati,* Volume 5(1), Januari, pp.85-90.

Rahmah, Aulia Dzakiyu. (2017). "The Effectiveness of Semantic Mapping on Students' Vocabulary Achievement: A Quasi-Experimental Study at the Eighth Grade Students of MTs Islamiyah Ciputat, Tangerang Selatan in Academic Year 2017/2018". *Unpublished Undergraduate Thesis*. Jakarta: Department of English Education, Faculty of Educational Sciences, Syarif Hidayatullah State Islamic University. Available online also at: http://repository.uinjkt.ac.id/dspace/bitstream/123456789/37617/1/AULIA%20DZAKIYU%20RAHMAH%20-%20FITK.pdf [accessed in Bandung, West Java, Indonesia: October 17, 2018].

Reber, R.E. & D.B. Roberts. (2000). *A Lifelong Call to Learn: Continuing Education for Religious Leaders*. Herndon, VA: Alban Institute.

Schaufeli, W.B. & Qiao Hu. (2009). "The Factorial

ISSN 2407-7348** and **www.journals.mindamas.com/index.php/sipatahoenan

Validity of the Maslach Burnout Inventory Student Survey in China" in *Journal of Psychological Report*, No.105, pp.394-408.

Serdyukov, Peter. (2017). "Innovation in Education: What Works, What Doesn't, and What to Do about it?" in *Journal of Research in Innovative Teaching & Learning*, on April. Available online also at: https://www.emerald.com/insight/content/doi/10.1108/JRIT-10-2016-0007/full/html [accessed in Bandung, West Java, Indonesia: October 5, 2018].

Slameto. (2010). *Belajar dan Faktor-faktor yang Mempengaruhi*. Jakarta: PT Asdi Mahasatya.

Smirnov, N. (1948). "Table for Estimating the Goodness of Fit of Empirical Distributions" in *Annals of Mathematical Statistics,* Volume 19(2), pp.279-281.

Snilstveit, B. *et al*. (2016). "The Impact of Education Programmes on Learning and School Participation in Low- and Middle-Income Countries: A Systematic Review Summary Report" in *3IE: Systematic Review Summary*, No.7. Published by International Initiative for Impact Evaluation in London. Available online also at: http://pubdocs.worldbank.org/en/429341481774674870/The-Impact-of-Education-Programmes-on-Learning-and-School-Participation.pdf [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Sutarjo, E. & D. Arum. (2014). "Efektivitas Teori Behavioral Teknik Relaksasi dan Brain Gym untuk Menurunkan Burnout Belajar pada Siswa Kelas VIII SMP Laboratorium UNDIKSHA Singaraja, Tahun Pelajaran 2013/2014" in *E-Journal UNDIKSA: Bimbingan Konseling*, Vol.2, No.1.

Syah, Muhibbin. (2009). *Psikologi Belajar*. Jakarta: PT Raja Grafindo Persada.

Tuyen, Nguyen Van. (2017). "Factors that Affect Students' Reticence in Class" in *Advances in Social Science, Education, and Humanities Research,* Volume 115, pp.179-184.

Viglione, A., F. Laio & P. Claps. (2007). "A Comparison of Homogeneity Tests for Regional Frequency Analysis" in *Water Resources Research,* Volume 43. Available online also at: https://agupubs.onlinelibrary.wiley.com/doi/pdf/10.1029/2006WR005095 [accessed in Bandung, West Java, Indonesia: October 17, 2018].

Vrbik, Jan. (2018). "Small-Sample Corrections to Kolmogorov–Smirnov Test Statistic" in *Pioneer Journal of Theoretical and Applied Statistics,* Volume 15(1-2), pp.15-23.

White, H. & S. Sabarwal. (2014). "Quasi-Experimental Design and Methods" in *Methodological Briefs: Impact Evaluation*, Volume 8, published by UNICEF Office of Research in Florence. Available online also at: https://www.unicef-irc.org/KM/IE/img/downloads/Quasi-Experimental_Design_and_Methods_ENG.pdf [accessed in Bandung, West Java, Indonesia: October 9, 2018].

Yasin, S.N.T.M., M.F.M. Yunus & I. Ismail. (2018). "The Use of Rasch Measurement Model for the Validity and Reliability" in *Journal of Counseling and Educational Technology,* Vol.1, No.2. Available online also at: https://journal.redwhitepress.com/index.php/jcet/article/view/11 [accessed in Bandung, West Java, Indonesia: March 2, 2019].

Yotanyamaneewong, Saengduean. (2012). "Thai Teachers with Low/High Burnout and Their Perceptions of Teaching Pupils with Special Educational Needs (SEN)". *Unpublished Ph.D. Thesis*. UK [United Kingdom]: School of Education, College of Social Sciences, the University of Birmingham. Available online also at: https://etheses.bham.ac.uk/id/eprint/3526/2/Yotanyamaneewong_12_PhD.pdf [accessed in Bandung, West Java, Indonesia: October 1, 2018].

Zuni, Eka K. & Christiana Elisabeth. (2014). "Penerapan Kombinasi antara Teknik Relaksasi dan *Self-Intruction* untuk Mengurangi Kejenuhan Belajar Siswa Kelas XI IPA 2 SMA Negeri 22 Surabaya" in *Jurnal BK UNESA*, Volume 05(01), pp.1-10.

The SMP of Aisyiyah Boarding School Students in Bandung
(Source: https://www.youtube.com/watch?v=uyIb03XgUq0, 2/3/2019)

The results of this data analysis provide an illustration that the average on the outcome of the study (post-test) at the SMP (*Sekolah Menengah Pertama* or Junior High School) of Aisyiyah Boarding School in Bandung, West Java, Indonesia, the decrease of student learning saturation for the experimental class.

ISSN 2407-7348 *and* ***www.journals.mindamas.com/index.php/sipatahoenan***