

Empowering Logical Mathematical Intelligence of the Inclusive Group of the 4-6 Years Old Children through the Neurosensory Instructional Approach

Martini Jamaris*, Edwita, Trisna Mulyeni, Dewi Hartanti

School of Education State University of Jakarta (UNJ), Indonesia

*Corresponding author: martinijamaris@yahoo.com

Abstract This research is aimed to empower the logical mathematical intelligence of the inclusive group of the 4-6 years old children by implementing the neurosensory instructional approach through holistic integrative instructional process. The mix method research, which is carried out by action research is applied in order to do this study. Rooting in the mix method research, there are two targets to achieve in applying the research method, they are (1) quantitative method is aimed to get to know the improvement of logical mathematical intelligence, and (2) qualitative method is applied in order to know the implementation of the neurosensory instructional approach through holistic integrative instructional process to improve the logical mathematical intelligence. Therefore, the research is started by measuring the actual abilities of the logical mathematical intelligence of the children by using valid and reliable formal multiple intelligences assessment instruments for the 4-6 years old children, especially, in the part of the logical mathematical intelligence. The research is ended by measuring the improvement of the logical mathematical intelligence of the children after participating the neurosensory instructional approach. Purposive sampling is applied in choosing 15 research sample which involves 12 normal children and 3 special need children. The study reveals that the inclusive group of the 4-6 years old children's logical mathematical intelligence are improved from under average up to above excellent after participating the neurosensory instructional approach.

Keywords: *logical mathematical intelligence, inclusive group, mix method research, neurosensory instructional approach, holistic integrative instructional process*

Cite This Article: Martini Jamaris, Edwita, Trisna Mulyeni, and Dewi Hartanti, "Empowering Logical Mathematical Intelligence of the Inclusive Group of the 4-6 Years Old Children through the Neurosensory Instructional Approach." *American Journal of Educational Research*, vol. 4, no. 10 (2016): 768-776. doi: 10.12691/education-4-10-10.

1. Introduction

The Logical mathematical intelligence is one of the abilities which should be empowered since early years. It is because in every day life, the children will face the environment which contain with various logical mathematical issues. In their daily activities, the children will select and choose any decisions, related to the application of logical mathematical intelligence. Therefore, improving the logical mathematical intelligence since early years is an important issue. Keith Osborn, Burton L. White and Benjamin S. Bloom research findings in Fasli Jalal. [6] described that the intellectual development from 0 - 4 years old is the same as the intellectual development from 4 - 18 years old. The intellectual development of 4 - 8 years old is bigger than the intellectual development from 8 - 18 years old. Therefore, the development in early aged has significant role for the development of the children in their future life. Furthermore, the research finding of Martini Jamaris & Edwita [17,18] stated that under the effective multiple intelligences improvement program, the 4-6 years old children's multiple

intelligences can be improved well. Furthermore, the research findings of Martini Jamaris and Edwita is supported by Gusman, Martini Jamaris and Sabarti Achadiah research findings [23]. For the purpose of the preceding rationale, it is necessary to do some efforts related to the improvement of the early year's logical mathematical intelligence. There are many ways to do, one of them is education, especially, logical mathematical intelligence education, which is conducted through neurosensory instructional approach and implemented in the holistic integrative instructional process for logical mathematical intelligence empowerment.

The selection of implementing the sensory instructional approach is based on the considerations that the early aged children are actively use their neurosensory abilities in exploring their environment. They use their visual abilities to see any objects, use their auditory abilities to listen any sounds around them, they use their skin to touch any objects around them, they use their tongue to taste and use their nose to smell. Therefore, this research is aimed to empower the 4-6 years old children's logical mathematical intelligence through the neurosensory instructional approach, which is implemented in the form of the holistic integrative instruction process for logical mathematical

intelligence improvement. The reason underlies the selection of the instructional approach is because the approach is matched to the children’s developmental needs.

2. Theories Cross Analysis

Learning is an active process which involves central nervous system’s functions. Therefore, it is important to understand how the brain actually function in learning. As stated by Myklebust, in Gearheart, [2] that the brain is composed of systems which at times function semi-independently, at times in a supplementary manner, and at times in a totally related manner. For example that visual system may function semi-independently from the auditory or the tactile systems, it may function in a coordinates manner with either them or all may function as a total system. As a result of the previous rationale, Gearheart [2] 3) divides learning process into three general categories, as followed: (a) intra-neurosensory learning which involves primary one sensory system in the brain system, (b) inter-neurosensory learning which involves more than one brain system, and (c) integrative or multi-sensory learning that involves all brain systems functioning simultaneously

Based on the preceding rationale, it is clear that neurosensory consists of various brain functions which are used by human being in learning or doing interactions with their environment. By these interactions, the human

being will understand the inter-relationship of the environment phenomena around them. The brain functions in the form of neurosensory systems can be operated by using ear in the form of auditory abilities, eye in the form of visual abilities, nose in the form of smelling abilities, skin in form of tactile abilities and tongue in form of taste. abilities, as well as, movement in form of kinesthetic abilities.

Neurosensory instruction approach is a kind of instructional approach which is focused on activating sensory systems integratively, either by eye and ear, skin, and tongue, or nose, or by movement. Therefore, neurosensory instructional approach is the reflexion of natural process of the brain in learning or in doing activities. as well as, doing instructional activities. Neurosensory systems can operate by activating frontal lobe for planning activities and controlling body movement, parietal lobe for somatis sensation related to body image in space, temporal lobe for listening, in which, related through its’ inside structures. hippocampus and amigdala that enable people to learn, to recall their experiences about thing, objects, etc and to control thier emotion (4). All the brain functions in the brain systems bring about multiple intelligences.

Rooting in the above information, it can be described that one of brain’s functions is dealt with information processing. in which, it involves three kinds of process: in put process, organizing process which involves memory, and expressive process. as shown in Diagram 1.

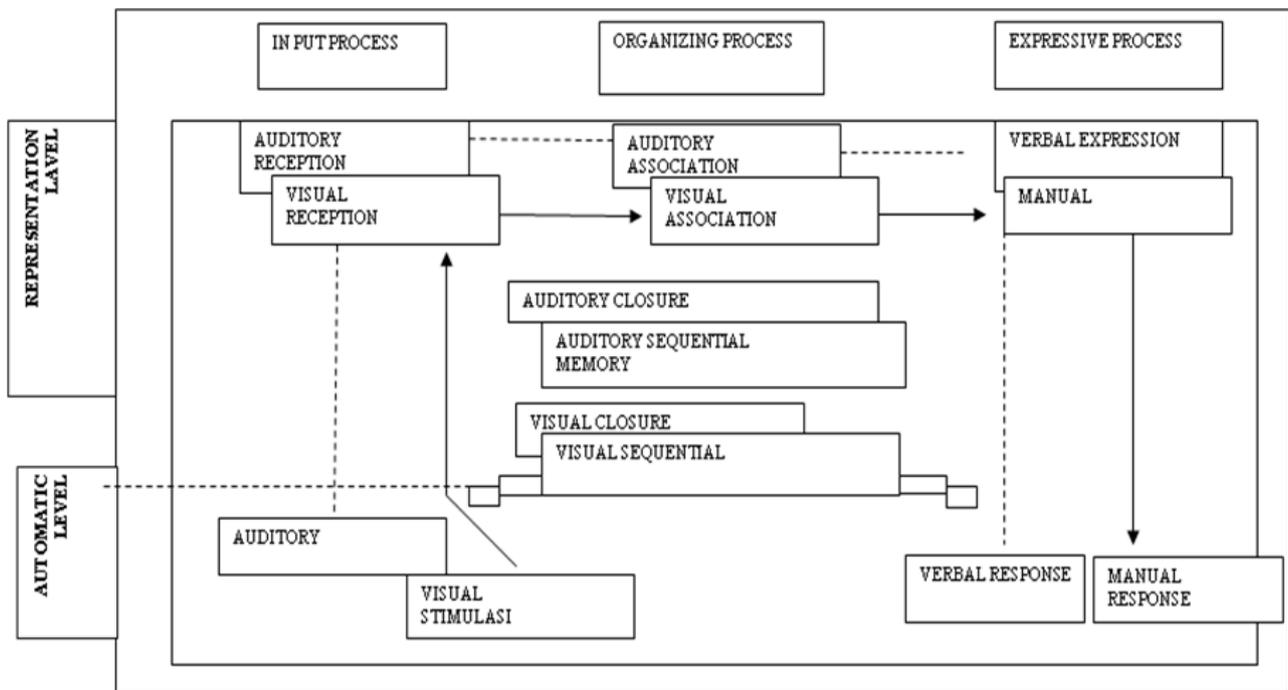


Diagram 1. Information Processing System

The information processing systems in their operations involve neurosensory systems. Any information can be come from visual stimuli, auditory stimuli and other kinds of sensory stimuli are sent into receptive process and the results of the process are transfer to the organizing process, in which, all information are organized in accordance to the schemata of the person concerned, and followed by expressive process, in which, the decision is made ” to

repond by doing something or to respond by saying something”.

When a baby is born, she/he has already able to do any activities related to the basic brain functions, such as, the baby is able to see, to hear, to smell, to touch, to taste, to move, to breath, or to do any kinds of basic living activities. The basic brain functions have to be improved to become the higher brain functions [1]. in which, they involve the abilities to do learning activities, understand to

what to see, to hear, to smell, to touch, to taste, to be able to control emotion, and to respond adequately to their

environment.

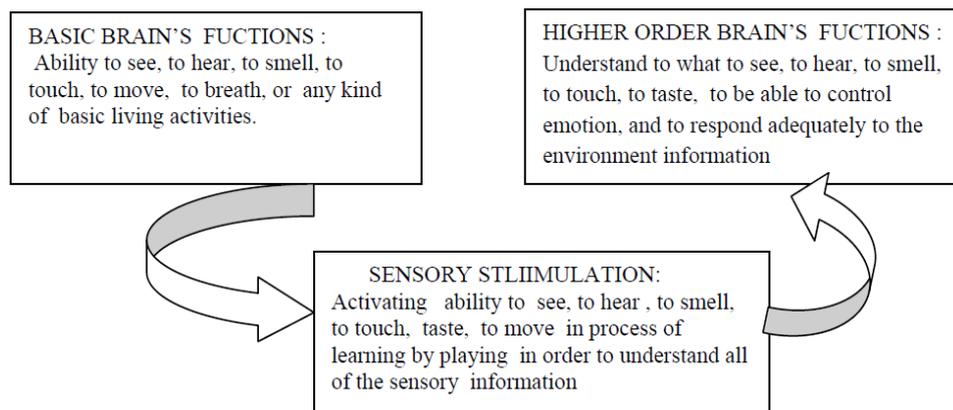


Diagram 2. From Basic Brain's Functions to Higher Brain's Functions

Gardner [7], Piaget [9], Martini Jamaris [13], Papalia and Olds [5], Santrock [10], state that neurosensory systems as the brain functions help the children to develop their multiple intelligences development. Therefore, it can be concluded that the development of multiple intelligences are going side by side with the development of the children's development in the field of psychosocial, cognitive, language and communication, physic and motoric coordination and visual motoric coordination [20]

Logical mathematical intelligence is the reflection of frontal lobe and parietal lobe, as well as, temporal lobe. Therefore, logical mathematical intelligence as a type of multiple intelligences enable people to do inductive and deductive thinking. The existence of the intelligence can be seen from the abilities of the early age children, including the 4-6 years old children in making categorization, making classification, making inference and generalization, as well as, calculating and numeric abilities, finding patterns and testing hypothesis (13). Furthermore, Jamaris (14) describes that logical mathematical intelligence of the early age children can be identified by the abilities in: (1) classifying objects, events, and people, (2) arranging objects and events based their order / hierarchy (3) making explanation logically and rationally, (4) remembering numbers up to 10 easily, (5) calculating numbers up to 10 easily, (6) understanding cause and effect relationships, (7) finding patterns of objects and events, (9) understanding addition and subtraction (- +) process up to 10 easily. Furthermore, to empower the ability of logical mathematical intelligence can be done by using various stimulations which involves holistic integrative neurosensory activities.

3. Research Method

Rooted in the need in empowering the logical mathematical intelligence through the neurosensory instructional approach which is implemented by doing the holistic integrative instructional process for the logical mathematical intelligence, especially, for the 4-6 years old children lead to formulate the research questions as followed: (1) how to design and to implement neurosensory instructional approach in the form of the holistic integrative instructional process for logical mathematical intelligence? (2) after participating in the

implementation of neurosensory instructional approach in the form of the holistic integrative instructional process for logical mathematical intelligence, do the logical mathematical intelligence of the inclusive group of the 4-6 years old children increase?

The research questions above lead to the objectives of the research they are to design and to implement the neurosensory instructional approach through holistic integrative instructional process which aimed to improve the logical mathematical of the 4-6 years old children.

Based on the research questions and the objectives of the research, therefore, the research method used in this study is mix method, in which, its carried out in the form of action research, especially, Martini Jamaris Action Research Model [17].

The action research model is constructed based on Kemmis's action research protocol (16), in which, he does not talk about assessment as a tool in order to get information about the result of the action/intervention target accomplishment. In the research protocol, he does not give detail information. Therefore, the correspondence researcher modifies Kemmis' action research protocol and she calls it as Martini Jamaris Action Research Model, as shown in Diagram 3, in which, she gives detail information about the action research process and assessment as a tool in order to get information about the action research accomplishment. Furthermore, she states that the assessment have to be conducted before and after action process. Moreover, the model implies the application of quantitative method and qualitative method, as shown in Diagram 3. Quantitative method is aimed to get to know the improvement of logical mathematical intelligence, as the action/intervention target, and qualitative method is applied in order to know implementation of the neurosensory instructional approach through holistic integrative instructional process to improve the logical mathematical intelligence. Therefore, the research is started by measuring the actual abilities of logical mathematical of the children which is measured by using valid and reliable formal multiple intelligences assessment instruments for the 4-6 years old children, especially, in the part of the logical mathematical intelligence. The assessment instruments are developed by the correspondence author who are assisted by her co researchers. The research is ended by measuring the improvement of the logical mathematical intelligence of

the inclusive group of the 4-6 years old children after participating the neurosensory instructional approach. Consequently, pre assessment and post assessment are

applied before and after the implementation of the neurosensory instructional approach which carried out in the form of holistic integrative instruction.

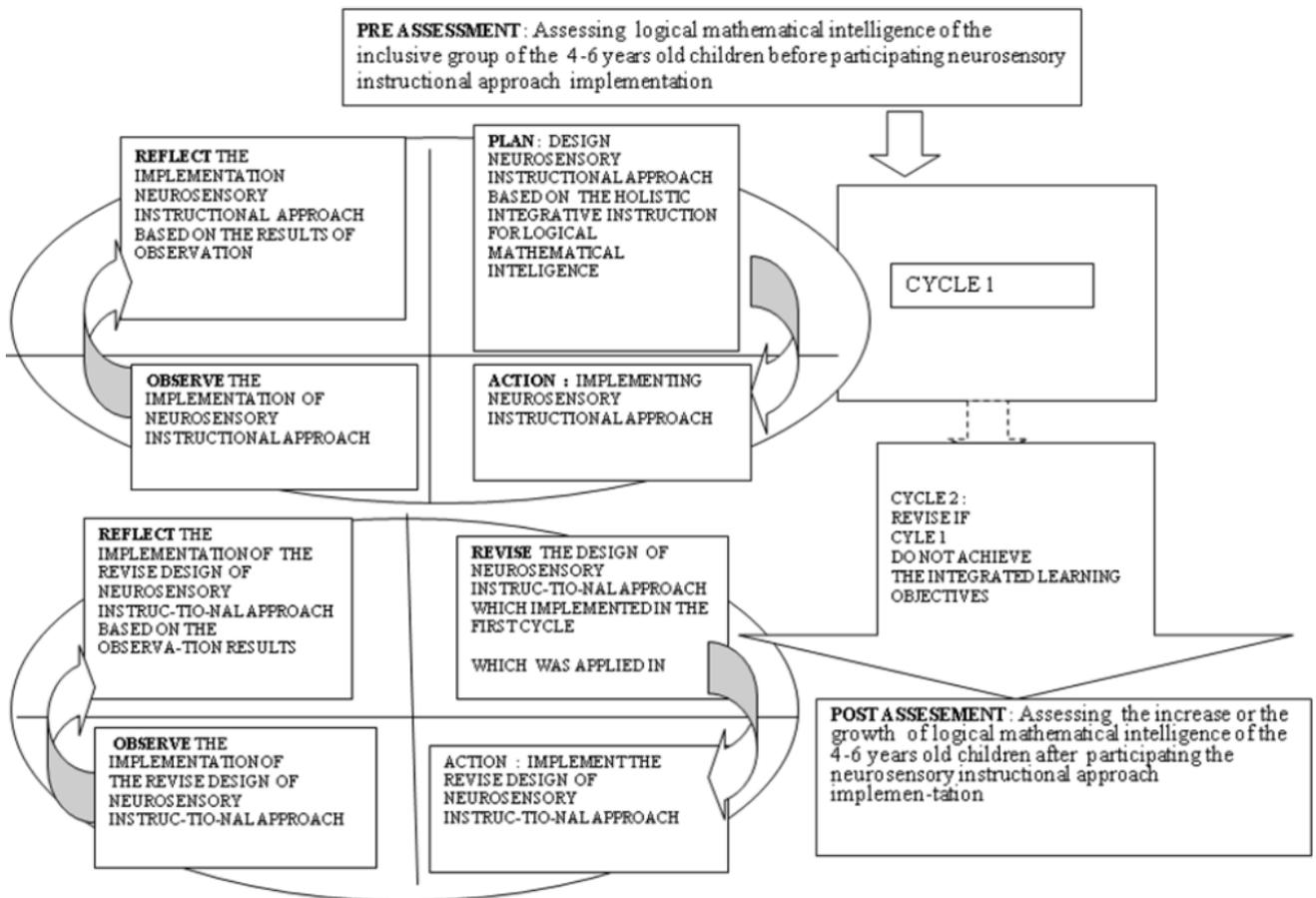


Diagram 3. Martini Jamaris' Action Research Model

Qualitative method is used to assess the progress of logical mathematical of the 4-6 years old children in the inclusive group during the implementation of neurosensory instructional approach. Therefore, observation guide,

interview and documantation are used to record the children's logical mathematical progress, and the result of data collections are constructed in the form of field notes, which decribed as followed.

Table 1. Martini Jamaris' Model Of Qualitative Research Field Notes

Field Notes: Statement of Research Participants	Researcher Reflections	Cover Terms
" If I take two papers and take four color papers. then I have six papers, count it 1,2,3,4,5 ppapers "	The statement of the 4-6 years old children shows that they understand about additional process"	Understanding of Additional Process
" This cake is bigger then that cake, therefore, I take it "	The statement of the 4-6 years old children shows that they use reasonable selection	The kind of logical mathematical intelligence used by the 4-6 years old children

In order to have comprehensive field notes, the researchers also used recorder to record all data related to the indepth interview and camera which used to record the children overt behaviors, as well as, all documents needed by the research data collections.

As mention in the previous explanation, in which, the qualitative research the data are compressed and shape up into some suitable categories. Therefore, the activities in

analyzing data leads to find out some categories which related to logical mathematical of the inclusive group of the 4-6 years old children. To do the process of data analysis the researcher apply the qualitative data analysis which developed by Spadley [8]. then modified by the researcher (Martini Jamaris), as shown in the following table.

Table 2. Martini Jamaris' Qualitative Data Analysis Model

Included Term	Semantic Relation	Cover Term
To do additional process To select by using reasonable choice	is kind of→	Logical mathematical abilities of the 4-6 years children

Based on the need of the sensory instructional approach which related holistic integrative instruction for logical mathematical intelligence which is in the form of holistic

integrative instructional model. instructional approach have to be conducted in the four instructional stage as shown in Diagram 4.

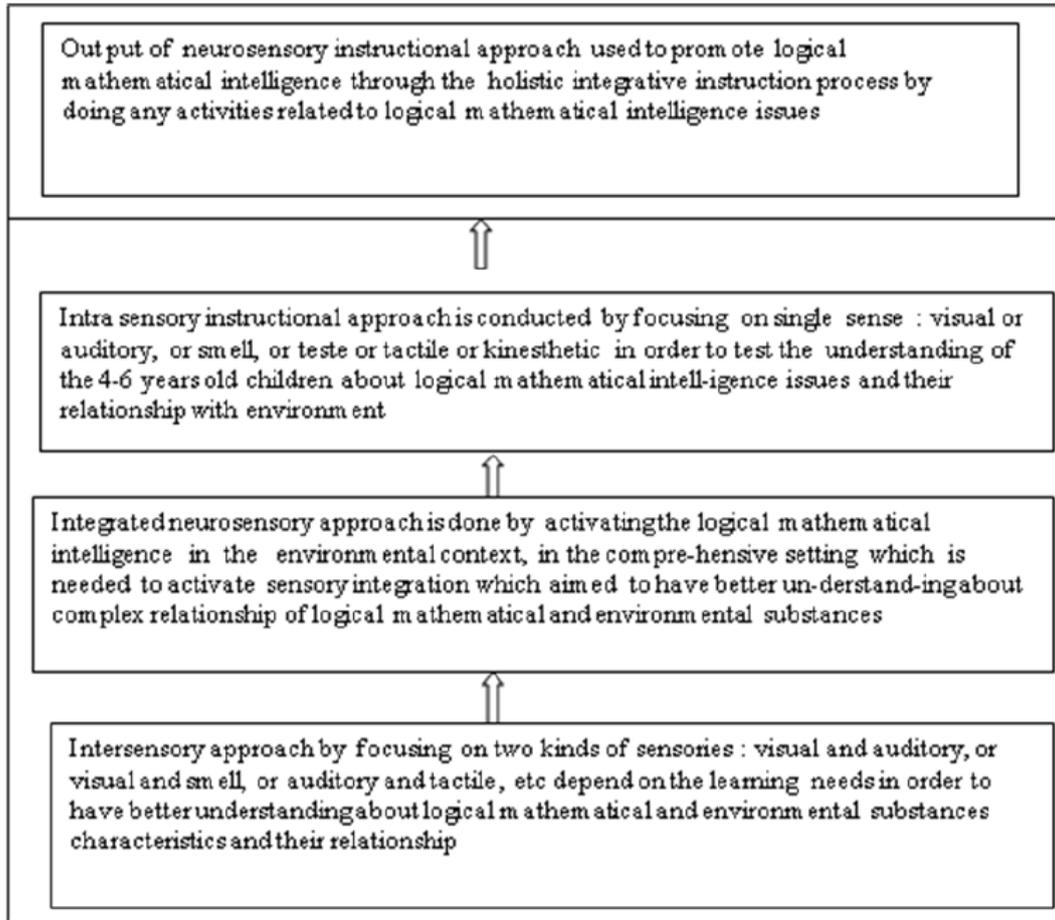


Diagram 4. Neurosensory Instructional Stage of Logical Mathematical Intelligence Empowerment

In accordance to the analysis result of instructional systems, as well as, model of integrated curriculum [19,22]. the instructional design consists of at least instructional objectives, instructional contents, instructional processes, and instructional evaluation which guided the

researcher to construct the neurosensory holistic integrative approach in the form of multiple intelligences holistic integrative instructional design and process, as described in the following diagram [18].

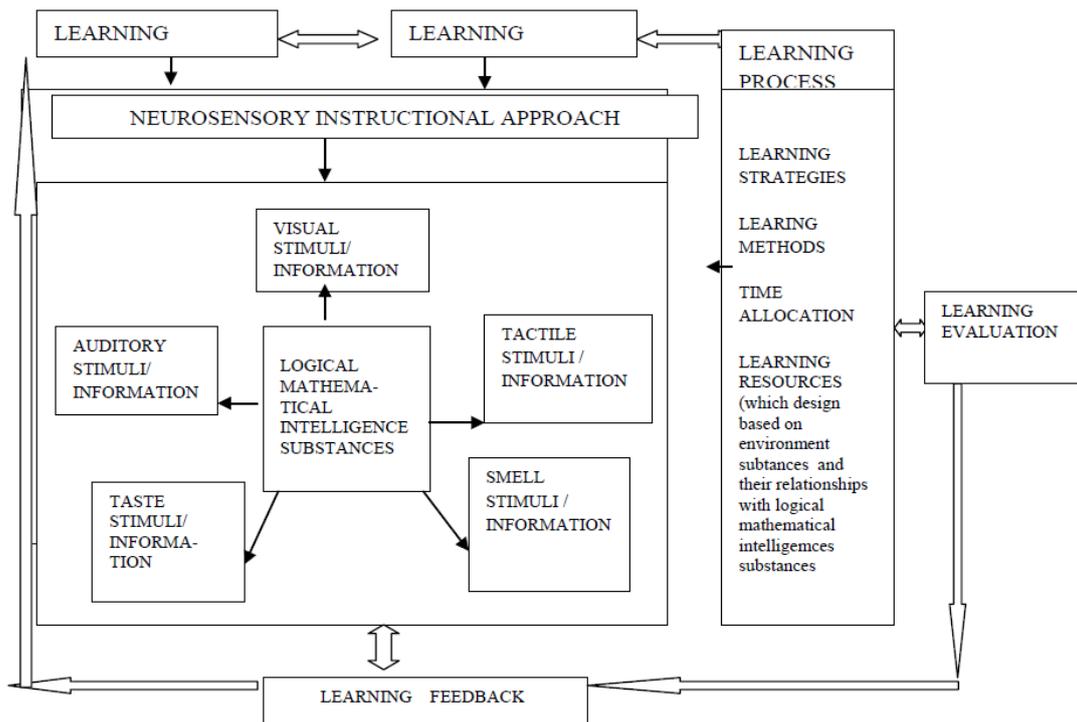


Diagram 5. Neurosensory Instructional Approach in the Form of Logical Mathematical Holistic Integrative Instructional Design

Based on the theories cross analysis which have been described previously, the logical mathematical intelligence substances of the 4-6 years children are covered: (1) classifying objects, events, and people, (2) arranging objects and events based their order / hierarchy (3) making explanation logically and rationally, (4) remembering numbers up to 10 easily, (5) calculating numbers up to 10

easily, (6) understanding cause and effect relationships, (7) finding patterns of objects and events, (9) understanding subtraction and addition (- +) process up to 10 easily.

The holistic integrative instructional design which is used in empowering logical mathematical intelligence of the 4-6 years old children is selected carefully, in order to match with the need of the children.

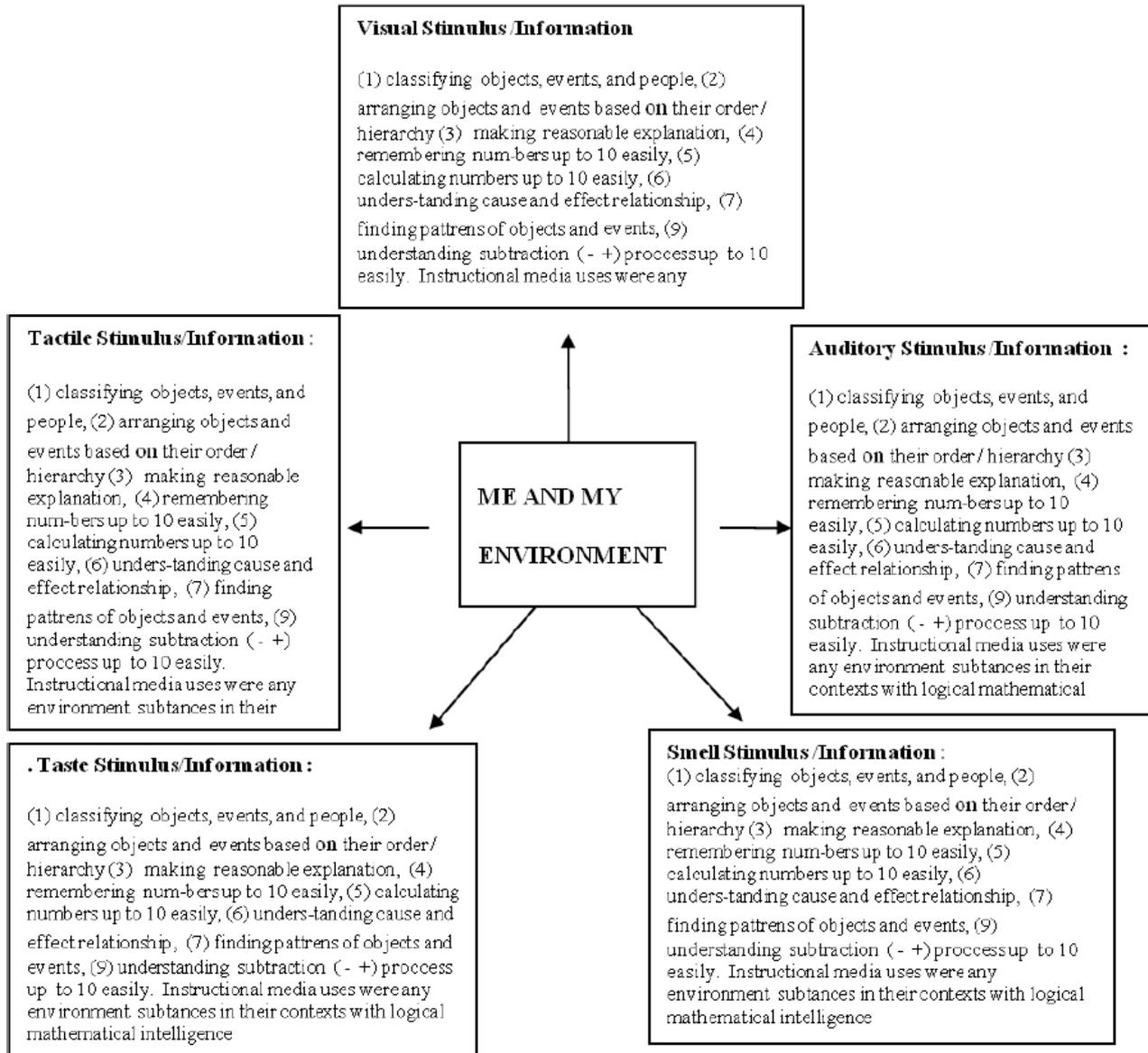


Diagram 6. Holistic Integrative Instructional Theme For Logical Mathematical Empowerment

A long with the requirement of the holistic integrative instruction, in which, the researchers adopted Fogarty’s webbed model [21]. Martini Jamaris [15] and Collins and Hazel [3] which are modified based on the need of instructional design. Therefore, the instructional contents are design in the forms of a theme which is developed based on the interaction of the logical mathematical intelligence substances and the environment substances which shows in Diagram 6. [18]

Enchored in the need of the 4-6 years old children, therefore the integrative instructional theme for the logical mathematical intelligence which is used during the learning process and activities are dealing with “ME AND MY ENVIRONMENT” and their related issues. Furthermore, the instructional process are divided into eight weeks. Each week consists of five days and ten

hours. It is because school time for kindergarten is mostly only two hours a day.

Rooted in the instructional theme, the weekly instructional is designed. Every week is focused on one neurosensory ‘s fuctions. However, in its implementation, all of the neurosensory functions are activating.

4. Measured Standard of Logical Mathematical Improvement

For the need of assessment of the logical mathematical intelligence through the holistic integrative instructional process, therefore, it is important to construct rating scale aimed to assess the improvement of multiple intelligence

of the inclusive group of the 4-6 years old children. The rating scale are used before and after instructional process. multiple intelligence of the inclusive group of the 4-6 years old children. The rating scale are used before and after instructional process. Example of the of the rating scale score implementation to assess the logical mathematical intelligence improvement /empowerment of the 4-6 years old children on daily learning process as shown in rating scale 1, which involved the bellow indicators:

1. Classifying object, things or people (**COTP**)
e.g. for 4-5 years old children average if they can classify object and thing based on two characteristics of objects, things, or people and for 5-6 years old children average if they can classify thing based on three characteristics of object, thing and people
2. Arranging object and event based on their order/hierarchy (**AOOH**)
e.g. for 4-5 years old children average if they can arrange object and event based on two kinds of order, such as, small - big. for 5-6 years old children average if they can arrange object base on three kinds of order. such as, small, medium, big,
3. Making rationale explanation (**MRE**) e.g “ Why people need flowers “. for 4-5 years old children average if they can express 2 rationale explanations and for 5-6 years old children average if they can express 3 rationale explanation

4. Remembering numbers up to 10 easily (**RN**)
For 4-5 years old children average if they can remember number 10-15, for 5-6 years old children average if they can remember number 10-20
5. Calculating numbers up to 10 easily (**CN**)
For 4-5 years old children, average if they can calculating number up to 10 easily, for 5-6 years old children, average if they can calculating number up to 20 easily
6. Finding pattrens of objects and events (**FPOE**)
For 4-5 years old children, average if they can identified 3 kinds of object or event patterns easily, for 5-6 years old children, average if they can identify 5 kinds of object or event pattern easily
7. Understanding additon (+) process up to 10 easily (**UAD**)
For 4-5 years children, average if the children can operate addition process up to 10, for 5-6 years old children, average if they can operate addition process up to 15
8. Understanding subtraction (- process up to 10 easily (**US**)
9. For 4-5 years children, average if the children can operate subtraction process up to 10, for 5-6 years old children, average if they can operate subtraction process up to 15

1 Bad	2 Good	3 Very Good	4 Well	5 Excellent
If score improved ≤ 20 %	If score improve d 21– 4.0 %	If score improved 41- 60 %	If score improved 61 – 80 %	If score improved 81.-100 %

Rating Scale 1. Logical Mathematical Measured Standard

5. Research Participants

The research are participated by an inclusive group children of the 4-6 years old children which involves 15 kindergarten children which includes 12 normal children, 2 behavior problem children, and 1 learning difficulties child. The research is conducted in five weeks at TK Islam Assyafiiyah 02. Jati Waringin. Pondok Gede. Jawa Barat Indonesia.

6. Results

The research findings reveal that the logical mathematical intelligence of the inclusive group of the 4-6 children are increased after participating the neurosensory instructional approach, which, implemented in the form of logical mathematical intelligence holistic integrative instructional process.

The improvement of the children’s logical mathematical intelligence can be seen from the children individual improvement for each type of logical mathematical intelligence substances which is started from 152.94 % up to 231.25 %. Therefore, all the children’s logical

mathematical intelligence are improved from bellow average to above excellent. Furthermore, the average score of 15 children for pre assessment is 15.47 and the average score of the children for post assessment is 29.73. Therefore, the score is increased 192.18 %.

The information above tell that all of the children reach above excelent category of logical mathematical intelligence after participating the logical mathematical intelligence holistic integrative instructional process for empowering logical mathematical intelligence. However, in order to have rich information, therefore, Diagram 7 is conctructed, in order to give better descriptions about the improvment of the children’s lógical mathematical intelligence.

7. Discussion

Rooted in the research results, it can be analyzed that the logical mathematical intelligence of the 4-6 years old children are improved after participating the neurosensory instructional approach which is implemented in the form of holistic integrative instructional process for empowering the logical mathematical intelligence. Judging from the individual improvement of the 4-6 years old children, it can be concluded that all the children logical mathematical

intelligence are improved above excellent. The conclusion is constructed based on the 15 children's score analysis, which are moved from the average pre assessment score 15.47 to the average post assessment score. it is 29.73.

Therefore, the score is increased 192.18 %. Furthermore, all the childrens scores are improved from the level of under average to the level above excellent.

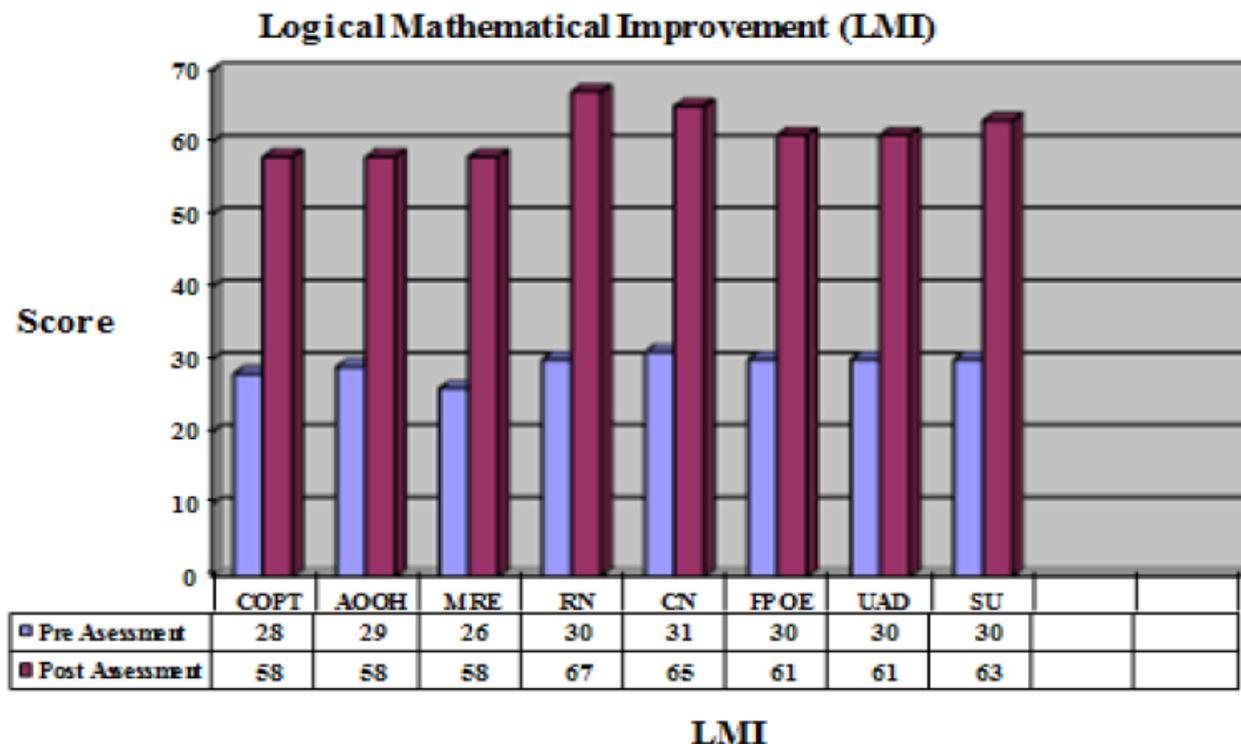


Diagram 7. Logical Mathematical Intelligence Improvement of The Inclusive Group Of The 4-6 Years Old Children

The above excellent improvement reached by the children, is based the carefull instructional design of the neurosensory instructional approach, in which. it devided carefully into three stage of the instructional process and transfered them into the instructional implementation in the form of the holistic integrative instructional process for empowering the logical mathematical intelligence of the 4-6 years old children.

The key of sucesss is related to the instructional process which is done based on the children active learning through playing, in which, they do various play activities related to empower their logical mathematical intelligence. Therefore, the instructional process is matched to the need of the 4-6 years old children's development. which focus on doing anything concerning to the logical mathematical intelligence activities or doing variuos types of exploration related to logical mathematical stimulation. All of them are rooted to the children's brain stimulation. Moreover, the instructional process is supported by effective instructional resources and media, as well as, dedicated teachers who work cooperatively to empower the children logical mathematical intelligence.

The result of research cross analysis of logical mathematical intelligence which done by other researchers, such as, the result research done by the graduate students of UNJ, support the result of this study, in which, all the research result agree that logical mathematical of the children will empower and improve significantly, if they are going through the instructional process which empahsis on empowering or improving logical mathematical instructional process.

8. Conclusion

Based on the research findings, it can be concluded that the logical mathematical intelligence of the early age children. especially the 4-6 years old children are increased after participating the neurosensory instruction approach. in which, it is applied in the form of the holistic integrative instruction process, which is design, especially to empower the children's logical mathematical intelligence. Eventhough, the participants of the research are limited. However. the research is conducted about 5 weeks, equal with 25 days and equal with 50 hours. Therefore, time used for studying of the improvement or the empowerment of the 4-6 years old children's logical mathematical intelligence is rationally not short. Therefore, the research reflexs that the children's logical mathematical intelligence will be increased above excellent, if they go through the stimultion or instructional approach which matched to their developmental need, and in the form of neurosensory instructional approach.

References

- [1] Adree Maiza, Sp.S (Neurologist Expert). Unpublish paper/lecturing handout: Jakarta 2002, (Slide 1-5).
- [2] B.R. Gearheart. *Learning Disabilities: Educational Strategis*. The C.V. Mosby Company: Saint Louis 1973, p. 93.
- [3] Collins, Gillian and Hazel, Dixon. *Integrated Learning: Planned Curriculum Unit*. IRI/Skylight Publishing, Inc: Illinois. 1991, pp.20-25).

- [4] Diane E. Papalia & Sally Wendkos Sally. Olds. *Psychology*. McGraw Hill Book Company: New York, USA.: 1985, pp.42-44, 420.
- [5] Diane E. Papalia & Sally Wendkos. Olds. *Psychology*. New York, USA: McGraw Hill Book Company. 1995, pp.12-224.
- [6] Fasli Jalal. *Isu-Isu Penting Dalam Pendidikan Anak Usia Dini*. Presented in Seminar on Early Childhood Education. 2004, p. 3
- [7] Howard Gardner. *Frames of Mind: The Theory of Multiple Intelligences*. Basic Books.: New York. 1993. pp 67-68, 157-159.
- [8] James P. Spreadley. *The Ethnographic Interview*. Holt, Rinehart & Winston: New York. 1988, p.96.
- [9] Jean Piaget. *The Child and Reality*. New York: Peguin Books. New York. 1974. pp.20-40.
- [10] John W. Santrock. *Child Development*. Brown & Benchmark: Chicago. 1996, pp.338-395.
- [11] Kemmis cited by Hopkins, 1985. <http://www.physic.nau.edu/-da:anac/actionrsch.html>. 2000.
- [12] Martini Jamaris. *Kesulitan Belajar: Perspektif, Assesmen dan Penanggulangannya*. Jakarta: Yayasan Penamas Murni. 2009, p.209.
- [13] Martini Jamaris. Model Pembelajaran terpadu Berbasis Kecerdasan Jamak di Taman Kanak-Kanak. *Jurnal Pendidikan Anak Usia Dini*. PPs UN: Jakarta. 2004, Vol 2 Number 3, p 5.
- [14] Martini Jamaris, *Kesulitan Belajar: Perspektif, Assesmen dan Penanggulangannya*. Galia Indonesia: Jakarta (Second Edition) 2014, pp. 46-47.
- [15] Martini Jamaris. Pengembangan Multiple Intelligences dan Aplikasinya Melalui Pembelajaran Terpadu di Taman Kanak Kanak. *Jurnal Pendidikan dan Kebudayaan*. Depdiknas: Jakarta. 2005, No 053, (177-206).
- [16] Martini Jamaris. *Development Model of Multiple Intelligences Formal Instrument Assessment for Early Years Children*. UNJ Research Institute Center: Jakarta.. 2013, p. 28
- [17] Martini Jamaris & Edwita. Formal Multiple Intelligences Assessment Instruments for 4-6 Years Old Children *American Journal of Educational Research*, Science and Education Publishing: USA. 2014, Vol. 2, No. 12. pp.1164-1174.
- [18] Martini Jamaris & Edwita. Improving Environmental Awareness of the 4-6 Years Old Children Through Neurosensory Instructional Approach. *American Journal of Educational Research*, Science and Education Publishing: USA. 2015 Vol. 3 No. 4, pp. 1164-1174.
- [19] Martini Jamaris. Building Spirit of “Bhineka Tunggal Ika” in Early Childhood Education Through Integrated Learning which Emphaized on Multiple Intelligences. *Jurnal Pendidikan Anak usia Dini*. PPs UNJ: Jakarta 2005., Vol 3, No 3, pp. 1-28.
- [20] Martini Jamaris. Pengembangan Multiple Intelligences dan Aplikasinya Melalui Pembelajaran Terpadu di Taman Kanak Kanak. *Jurnal Pendidikan dan Kebudayaan..* DEPDIKNAS: Jakarta. 2005, No 053, pp 177-206.
- [21] Robin Fogarty, *How To Integrate The Curricula*. SkyLight: Arlington, Heighils, Illinois. 1991, pp 53-62, 67.
- [22] Steven Holland. *Brain's Function*. 2001. WWW. Hiddentalents, org Susan. M. Drake. *Creating Standard -Based Integrated Curriculum*. Thousand Oaks, CA: Sage. 2007, pp. 119-131.
- [23] Yasmine Yessy Gusman, Martini Jamaris & Sabarti Achadiah. Pengembangan Kecerdasan Jamak Anak Usia Dini di Taman Bacaan Anak. *Sinopsis Disertasi*. Jakarta: PPs UNJ. 2015, pp. 9-10.