Early Detection and Stimulation of Multiple Intelligences in Kindergarten

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This research aims at detecting and stimulating multiple intelligences of kindergarten children early by applying collaborative action research by academics and practitioners. This research moves from the most fundamental problem in early childhood education activities especially in kindergartens namely the teachers' mistreatment in learning activities. This research was conducted using collaborative action research between researchers and teachers using a qualitative approach. The subjects in this research were 40 kindergarten childrens in groups 1 and 2. The research results produced multiple intelligences instruments for kindergarten children whose validity and reliability were tested. guidelines for the detection learning model and stimulation of multiple intelligences for kindergarten children. The measuring tool used is a multiple intelligences measuring tool for kindergarten children developed by Lazear (1995) based on four key instruments as follows: (a) Behavior Log; (b) Skill Games; (c) Intelligence Function; (d) Complex Problems and (e) Discovery. Also adopted from the concept of multiple intelligences developed by Armstrong (2004). Result of this research that the average stimulation of multiple intelligences of group 1 was 28.81 and group 2 was 29.38. Group 1 the largest gain was linguistic intelligence (33.84) and the lowest was interpersonal intelligence (23.89). Meanwhile. Group 2 the largest gain was linguistic intelligence (32.27) and the lowest were physical kinesthetic intelligence (24.50).

Keywords: detection, kindergarten children, multiple intelligences, stimulation, kindergarten

INTRODUCTION

Development of children's basic potential through educational activities needs to be done since the child is still very young through meaningful learning activities because children have a strong potential to grow and develop. Providing opportunities and good education since childhood that is. from the age of 0-8 years from the environment will ensure the growing potential of the child. There are a number of reasons that reinforce thinking related to opportunities for developing children's abilities. One of them is the results of research from Jalal (2002) that says that early age is a critical period in child development. The results of neurology studies show that at birth the baby's brain carries a potential of around 100 billion neuron connections. The cells in the brain develop so rapidly by producing trillions of connections between neurons. In order to achieve optimal development. these connections must be strengthened through various psychosocial stimuli because weak connections will experience atrophy (shrinkage) and break. This will ultimately affect the intelligence of children. Research at Baylor College of Medicine found that if children rarely get educational stimuli. their brain development is 20-30% smaller than the normal size of their age.

Campaigns on the importance of education for early childhood in Indonesia are popping up everywhere and are beginning to be recognized by many parties. from parents. bureaucrats. educators to the general public. At the practical level. however. it turns out that early childhood education has many problems and challenges. One of the most fundamental problems in early childhood education. especially in kindergartens. is mistreatment by teachers in the learning activities. For example. the teacher forces the children to learn reading. writing and counting even though not every child does what the teacher instructs. On the other hand. there are still teachers in kindergarten who are too academic-oriented in providing learning to children and ignore the psychological aspects of kindergarten-age children. Reber (Agustin. 2008) emphasized that mistakes in treatment/stimulation in children will lead to learning and psychological disorders. and even in certain cases. loss of valuable potential.

Another problem that often occurs in kindergarten learning activities is the tendency to rigidly follow the standard curriculum references set by the government so that many teachers are discouraged and do not have the creativity to make entertaining learning for children. This regrettable reality causes many children to feel bored and they lose motivation when they are continuing their studies at the next level (Agustin. 2011). Based on the aforementioned problems. there is an urgency to provide appropriate. integrative and beneficial solutions for various parties. The proposed solutions are the application of early detection and appropriate stimulation to the children's multiple intelligence. There are reasons why multiple intelligences is the solution. The results of Eliza's (2005) research showed that learning activities in kindergarten. especially those that are integrated. can help increase the potential of multiple intelligences. The development of the multiple intelligences potential could be different for each child and for each type of intelligence. Research related to multiple intelligences by Bas & Beyhan (2010). Siphai. et. al. (2017). Moran & Gardner (2018). Hajhashemi et al. (2018). Handayani (2018). Smith (2018). Akyol (2018). Trevino. et. al. (2020)

concluded that detecting and stimulating the multiple intelligences of kindergarten children or until university students can use various strategies and media.

To obtain the results of a quality research. it is necessary to review the previous research that is deemed relevant and have a significant contribution to this research. both conceptually in formulating the theoretical framework of research. as well as practically in the preparation of the detection and stimulation program of the children of kindergarten age. The findings. among others. the results of research conducted by Syaodih (2009) on the development of the measuring instrument of plural child of kindergarten. Other research results by Agustin (2006) tried to qualitatively identify multiple intelligences to help improve the childhood intelligence of kindergarten children that implemented in a guidance and counseling program. While the development of multiple intelligences of children's Park age by applying the activities conducted his research by Kurnanto (2006) while Eliza (2005) In his study found that the potential development of the multiple intelligences of kindergarten age can be developed using an integrated learning system. Referring to some of the above research results. the inference obtained that development of the potential ability of early childhood has a very important role to achieve better developmental tasks in the future. One of the children's potential in this case is multiple intelligences. which is certainly part of the entire life of the child to be optimally developed by being assisted by teachers and experts in early childhood education/kindergarten.

To harmonize the detection and stimulation for children's potential multiple intelligences. it is appropriate to conduct collaborative research by involving researchers and teachers. so that both parties can learn. evaluate weaknesses and strengths in the activities. Therefore this research focuses on efforts to detect early and stimulate the multiple intelligences of kindergarten children by applying collaborative action research of academic practitioners. In collaboration between teacher and researcher. the teacher plays a role in implementing improvements in learning. while the researcher plays a role in designing study designs and strategies for the detection and stimulation of multiple intelligences conducted by the teacher.

The Urgency of Detecting and Stimulating Kindergarten Children's Development

Behavioral and social learning experts such as EL Thorndike and Albert Bandura refer to the children's readiness to receive stimulation as the law of readiness. They believe that if someone including a child has achieved development phases and is ready to obtain or accept something or in the form of a series of stimulation from the outside especially from the environment where the child lives. plays and schools. there will be a positive relationship and will have a positive impact. However. if one is not ready. such as because the age is not appropriate. then there will not be any relationship.

Child education experts look at this matter by thinking of the right time (based on the critical period) to teach language; relating it to physical development. for example. the right time to teach playing the guitar; participating in sports-based activities such as gymnastics. badminton. tennis. and swimming. From the perspective of creativity. some education experts criticize that the lack of creativity of Indonesian adults is due to the

linear. teacher-centered. and "conservative" learning in elementary school. Researchers tried to assign students in early-childhood education classes to the first semester at the Universitas Pendidikan Indonesia to draw a picture on a blank piece of paper. Nearly 80% of the 50 students drew exactly the same pictures they would draw in the lower-grade (1. 2. and 3) of elementary school. The male students mostly drew people. cars. and mountains while the females mostly drew flowers or houses. An analysis of this activity is that it happened because of the mistakes in providing stimulation during learning in early childhood. It appears that the readiness period is also related to the maturity of learning. Thus. the term "school maturity" emerges. which looks at several influential aspects so all educational processes and developments take place properly.

The Concept of Multiple Intelligences

Multiple Intelligences is a term in the study of intelligence initiated by Howard Gardner (1993). an American education expert. Line with the development of human civilization. paradigm began to shift in translating the meaning of intelligence. Examples are emotional intelligence initiated by Goleman (2005). spiritual intelligence developed by Marshal and Johar (1993). and Emotional Spiritual Quotient initiated by Najati (2001) and Agustian (2001).

The essence of multiple intelligences theory according to Gardner (1993) is respecting the uniqueness of each individual. the variety of ways of learning. and realizing a number of models to assess them and almost unlimited ways to actualize them in this world. Multiple intelligences help teachers. parents. or early childhood mentors to recognize their children's strengths and weaknesses. However. they should not conclude that a child is suitable to be an athlete. an accountant. or a mathematician without giving him the opportunity to explore the world. work with his own skills. and develop his abilities. As for some research by experts on how to stimulate multiple intelligence, they state that.

The results of the study prove that the field trip method through children's visits to museums to convey culture can be one of the methods to develop multiple intelligences because through this method children can learn fun while developing their awareness of the importance of culture (Maccario, et al., 2012). The results of the study state that educational games media can help develop children's multiple intelligences in mathematical logic intelligence (Li, et al., 2012). Research proves that the application of learning by developing children's multiple intelligences can make learning more interesting so that it can improve children's academic achievement results (Gabriela-PetruĠa, et al., 2013). The results showed that the application of multiple intelligences-based learning has a significant effect on students' critical thinking skills. The findings of this study are the role of teachers not only to transfer knowledge based on their competencies but also student characteristics that reflect their teaching style (Alhamuddin & Bukhari, 2016). There is a close relationship between a child's emotional intelligence and learning motivation, the results of research on 723 students prove that children's emotional intelligence can improve student academic achievement, this can be seen from the increase in final academic achievement (Tam, et al., 2020).

The theory of multiple intelligences can explore that how each individual learns will be different depending on the combination of intelligence used by the individual. This can be used to develop communication skills in learning, especially creating a conducive classroom environment (Abenti, 2020).

METHOD

Research Approach and Method

This research was a collaborative action research between researchers (academics) and teachers (practitioners). Employed a qualitative approach in the process of detecting and stimulating multiple intelligences. It also used a quantitative approach to design and test research instruments. The action research was carried out to design and implement learning programs to detect and stimulate the multiple intelligences of kindergarten children. In the collaboration between teachers and researchers. the teachers played a role in implementing improvement efforts in learning. while the researchers played a role in making research designs and strategies to detect and stimulate multiple intelligences conducted by the teacher. Researchers also observed and recorded the learning process and outcomes. The teachers and researchers jointly analyzed and formulated the learning problem. formulated a solution strategy. and then implemented it.

The collaborative action research sought to improve the learning system and increase it towards higher quality learning. Collaborative action research is an assessment process through a system that recycles various learning activities consisting of four interrelated and continuous stages. These stages are (1) planning. (2) implementing the action. (3) observing. and (4) reflecting. The stages in a cycle can be repeated in the next cycle based on the reflection in the previous cycle until a problem is considered resolved. The number of cycles in action research depends on the complexity of the problem at hand and it may take three or more cycles (Kemmis&Taggart. 1992).

Research Locations and Subjects

Background selection of research samples is the consideration that Kindergartens was a reference for other kindergartens. Therefore. the institution must be an exemplary school. hence. that it can be modeled by other kindergartens. The research activities related to the detection and stimulation of multiple intelligences held at the one of the Kindergarten in the Bandung City (group 1) and Cimahi City (group 2), West Java, Indonesia. This kindergartens was chosen because it has been applying various approaches in children's learning. Therefore, the detection and stimulation of multiple intelligences were a new product and insight for teachers in creating a pleasant learning climate. The subjects in this study were 40 kindergarten students.

Research Procedure

This action research was carried out in several stages. namely the design of instruments and the preparation of learning guidance materials for detecting and stimulating multiple intelligences. preliminary studies. action planning. action implementation. and reflection. The following is a description of these stages. The design of instruments and

the design of learning guides to detect and stimulate multiple intelligences is done by designing an instrument and learning guides that have been tested both theoretically. statistically and expertly weighed. Preliminary studies are conducted as a start aimed at identifying and knowing the initial conditions that will serve as material for plan an action. Action planning is arranged to improve the quality of research.

Data Collection Techniques

The qualitative data were collected using observations. field notes. interviews. and documentation. While the quantitative data were obtained using questionnaires. To collect the data. several instruments were used. namely observation sheets. field notes. interviews. documentation. and questionnaires. These instruments were used to find out the development that occurred during learning after the detection and stimulation of multiple intelligences.

Data Analysis

Eighth type of intelligence is tested for its validity and reliability levels. with the first defined assessment system. Afterwards. the norm is established which will be a guide in the manual of the plural Intelligence measuring instrument for children of kindergarten age.

Stages of validity test calculation. Calculates the biserial correlation coefficient (γ_{pbi}). After obtaining r count. then to test the validity value of the problem grain. the researcher used the t-test. Once the value is obtained t_counts then. the next step is to specify a this with df = n-2 = 163-2 = 161 with value df = 161 and at an alpha value of 95% obtained t (0.95; 161) = 1.65.

   Decision making process
   Decision making is based on hypotheses test with the following criteria:

      If t_{counts} positively. and $t_{counts} > r_{table}$. then the question item is valid

·   If t_{counts} negative. and $t_{counts} < r_{table}$. then the problem item is invalid

Research Instrument Development

The instrument used in this study was a measure of multiple intelligences for kindergarten age children developed by Lazear (1995) based on four key instruments as follows. namely: (a) Behavior Log; (b) Skill Games; (c) Intelligence Function; (d) Complex Problems and (e) Inventing. Also adopted from the concept of multiple intelligences developed by Armstrong (2004). In developing the instruments. the eight types of intelligence are tested for their level of validity and reliability. with the assessment system first determined. After that. a norm will be set as a guide in the multiple intelligences measurement manual for kindergarten children. For his research instrument attached to annex 1.

For the validity calculation of the item of the other is used help calculation program Ms Excel 2010 and from 83 the problem that exists that there is a valid problem item 81

problem. invalid item number There are 2 items IE number 37 and 48. For more details about the validity test. here is the recapitulation result of the validity test calculation of the children's garden plural intelligence measuring instrument in table 1:

Table 1
Validity test result research ethics committee

Question Number	Total Score	Mp	Mt	St	p	q	r bis	t_{counts}	t_{table}	Criteria
1	127.00	61.57	56.98	14.93	0.78	0.22	0.58	8.98	1.65	Valid
2	82.00	63.20	56.98	14.93	0.50	0.50	0.42	5.86	1.65	Valid
3	99.00	63.16	56.98	14.93	0.61	0.39	0.52	7.63	1.65	Valid
4	127.00	61.46	56.98	14.93	0.78	0.22	0.56	8.66	1.65	Valid
5	101.00	62.41	56.98	14.93	0.62	0.38	0.46	6.65	1.65	Valid
6	126.00	60.25	56.98	14.93	0.77	0.23	0.41	5.63	1.65	Valid
7	108.00	62.70	56.98	14.93	0.66	0.34	0.54	8.09	1.65	Valid
8	137.00	60.53	56.98	14.93	0.84	0.16	0.55	8.29	1.65	Valid
9	104.00	61.89	56.98	14.93	0.64	0.36	0.44	6.17	1.65	Valid
10	127.00	61.69	56.98	14.93	0.78	0.22	0.59	9.33	1.65	Valid
11	77.00	65.35	56.98	14.93	0.47	0.53	0.53	7.95	1.65	Valid
12	99.00	64.04	56.98	14.93	0.61	0.39	0.59	9.24	1.65	Valid
13	96.00	63.79	56.98	14.93	0.59	0.41	0.55	8.28	1.65	Valid
14	100.00	63.68	56.98	14.93	0.61	0.39	0.57	8.71	1.65	Valid
15	143.00	59.48	56.98	14.93	0.88	0.12	0.45	6.36	1.65	Valid
16	123.00	59.77	56.98	14.93	0.75	0.25	0.33	4.41	1.65	Valid
17	130.00	60.12	56.98	14.93	0.80	0.20	0.42	5.85	1.65	Valid
18	152.00	58.61	56.98	14.93	0.93	0.07	0.41	5.66	1.65	Valid
19	125.00	60.05	56.98	14.93	0.77	0.23	0.37	5.11	1.65	Valid
20	104.00	61.27	56.98	14.93	0.64	0.36	0.38	5.24	1.65	Valid
21	99.00	64.07	56.98	14.93	0.61	0.39	0.59	9.30	1.65	Valid
22	122.00	60.34	56.98	14.93	0.75	0.25	0.39	5.36	1.65	Valid
23	103.00	60.91	56.98	14.93	0.63	0.37	0.35	4.67	1.65	Valid
24	66.00	61.56	56.98	14.93	0.40	0.60	0.25	3.32	1.65	Valid
25	126.00	60.82	56.98	14.93	0.77	0.23	0.47	6.85	1.65	Valid
26	104.00	60.88	56.98	14.93	0.64	0.36	0.35	4.69	1.65	Valid
27	146.00	58.99	56.98	14.93	0.90	0.10	0.39	5.45	1.65	Valid
28	125.00	60.11	56.98	14.93	0.77	0.23	0.38	5.23	1.65	Valid
29	99.00	62.04	56.98	14.93	0.61	0.39	0.42	5.91	1.65	Valid
30	141.00	59.09	56.98	14.93	0.87	0.13	0.36	4.86	1.65	Valid
31	63.00	64.05	56.98	14.93	0.39	0.61	0.38	5.15	1.65	Valid
32	117.00	61.19	56.98	14.93	0.72	0.28	0.45	6.40	1.65	Valid
33	131.00	59.29	56.98	14.93	0.80	0.20	0.31	4.19	1.65	Valid
34	84.00	58.93	56.98	14.93	0.52	0.48	0.13	1.73	1.65	Valid
35	133.00	59.37	56.98	14.93	0.82	0.18	0.34	4.55	1.65	Valid
36	104.00	60.82	56.98	14.93	0.64	0.36	0.34	4.61	1.65	Valid
37	121.00	58.02	56.98	14.93	0.74	0.26	0.12	1.51	1.65	Invalid
38	139.00	58.86	56.98	14.93	0.85	0.15	0.30	4.04	1.65	Valid
39	95.00	62.31	56.98	14.93	0.58	0.42	0.42	5.91	1.65	Valid
40	125.00	60.02	56.98	14.93	0.77	0.23	0.37	5.06	1.65	Valid
41	117.00	59.62	56.98	14.93	0.72	0.28	0.28	3.74	1.65	Valid
42	55.00	62.71	56.98	14.93	0.34	0.66	0.27	3.62	1.65	Valid
43	62.00	62.10	56.98	14.93	0.38	0.62	0.27	3.54	1.65	Valid
44	90.00	62.04	56.98	14.93	0.55	0.45	0.38	5.17	1.65	Valid
45	104.00	62.11	56.98	14.93	0.64	0.36	0.46	6.51	1.65	Valid
46	89.00	62.02	56.98	14.93	0.55	0.45	0.37	5.07	1.65	Valid
47	103.00	62.65	56.98	14.93	0.63	0.37	0.50	7.29	1.65	Valid
48	49.00	57.67	56.98	14.93	0.30	0.70	0.03	0.39	1.65	Invalid
49	70.00	63.74	56.98	14.93	0.43	0.57	0.39	5.43	1.65	Valid
50	110.00	61.61	56.98	14.93	0.67	0.33	0.45	6.34	1.65	Valid

51	96.00	63.36	56.98	14.93	0.59	0.41	0.51	7.57	1.65	Valid
52	111.00	62.02	56.98	14.93	0.68	0.32	0.49	7.20	1.65	Valid
53	135.00	60.50	56.98	14.93	0.83	0.17	0.52	7.68	1.65	Valid
54	92.00	62.61	56.98	14.93	0.56	0.44	0.43	6.04	1.65	Valid
55	97.00	63.25	56.98	14.93	0.60	0.40	0.51	7.51	1.65	Valid
56	142.00	59.62	56.98	14.93	0.87	0.13	0.46	6.59	1.65	Valid
57	144.00	58.97	56.98	14.93	0.88	0.12	0.37	5.01	1.65	Valid
58	134.00	60.38	56.98	14.93	0.82	0.18	0.49	7.14	1.65	Valid
59	123.00	61.27	56.98	14.93	0.75	0.25	0.50	7.41	1.65	Valid
60	113.00	61.92	56.98	14.93	0.69	0.31	0.50	7.29	1.65	Valid
61	94.00	60.32	56.98	14.93	0.58	0.42	0.26	3.44	1.65	Valid
62	147.00	57.99	56.98	14.93	0.90	0.10	0.21	2.66	1.65	Valid
63	129.00	61.02	56.98	14.93	0.79	0.21	0.53	7.87	1.65	Valid
64	120.00	61.83	56.98	14.93	0.74	0.26	0.54	8.20	1.65	Valid
65	117.00	60.80	56.98	14.93	0.72	0.28	0.41	5.69	1.65	Valid
66	136.00	59.80	56.98	14.93	0.83	0.17	0.42	5.96	1.65	Valid
67	142.00	59.39	56.98	14.93	0.87	0.13	0.42	5.90	1.65	Valid
68	102.00	62.26	56.98	14.93	0.63	0.37	0.46	6.54	1.65	Valid
69	126.00	59.83	56.98	14.93	0.77	0.23	0.35	4.78	1.65	Valid
70	123.00	60.36	56.98	14.93	0.75	0.25	0.40	5.49	1.65	Valid
71	136.00	59.39	56.98	14.93	0.83	0.17	0.36	4.94	1.65	Valid
72	128.00	60.61	56.98	14.93	0.79	0.21	0.47	6.67	1.65	Valid
73	108.00	61.36	56.98	14.93	0.66	0.34	0.41	5.73	1.65	Valid
74	115.00	61.05	56.98	14.93	0.71	0.29	0.42	5.92	1.65	Valid
75	132.00	60.00	56.98	14.93	0.81	0.19	0.42	5.84	1.65	Valid
76	112.00	60.43	56.98	14.93	0.69	0.31	0.34	4.63	1.65	Valid
77	103.00	61.60	56.98	14.93	0.63	0.37	0.41	5.64	1.65	Valid
78	115.00	59.61	56.98	14.93	0.71	0.29	0.27	3.60	1.65	Valid
79	120.00	59.76	56.98	14.93	0.74	0.26	0.31	4.16	1.65	Valid
80	111.00	59.20	56.98	14.93	0.68	0.32	0.22	2.83	1.65	Valid
81	105.00	60.71	56.98	14.93	0.64	0.36	0.34	4.54	1.65	Valid
82	98.00	62.43	56.98	14.93	0.60	0.40	0.45	6.37	1.65	Valid
83	102.00	62.72	56.98	14.93	0.63	0.37	0.50	7.27	1.65	Valid

Once a problem is known for a valid item then the next step is to test whether the item is reliable or not. to know the researcher using the help calculation program Ms. Excel 2000 and obtained as follows: n = 81. S = 15.586. Σpq = 18.859. As the benchmark point of the reliability coefficient. the following correlation coefficient guidelines are used in table 2.

Table 2
Guidelines for providing interpretation koefesien correlation (Sugiyono. 2005)

Interval Coefficient	Relationship Level
0.00 – 0.199	Very low
0.20 – 0.399	Low
0.40 – 0.599	Middle
0.60 - 0.799	Strong
0.80 – 1.000	Very strong

FINDINGS

The results in this study were seen from the planning. implementation. observation and reflection. Details can be seen in the explanation below.

Planning

Learning model to detect and stimulate multiple intelligence in kindergarten students

Introduction

This stimulation material is designed based on theoretical and empirical studies on the achievement of the multiple intelligences potential of kindergarten-age children. The basic assumption in developing this guideline is the belief that every child has the potential for multiple intelligences that can be nurtured through an appropriate and programmed stimulation process. The purpose of this guideline is to help researchers and teachers obtain the skills and abilities to help stimulate the potential intelligence of kindergarten-age children.

Relationship Characteristics

The researchers are expected to function as facilitators and collaborate with the teachers in developing learning materials and special skills in accumulating the multiple intelligences potential of kindergarten-age children. They are expected to collaborate neatly and to help prepare appropriate learning materials to appropriately and effectively stimulate the multiple intelligence potential of kindergarten-age children. The techniques to help stimulate multiple intelligence in kindergarten-age children are discussions. questions and answers. and simulation.

Rules of Activity

To increase the effectiveness of stimulation activities. it is necessary to determine the norms as guidelines and reference in the stimulation activity. The rules of the activity are expected to help create interaction and cohesiveness within the group. The norms are. first. researchers and teachers are expected to obey the meeting schedule and be present on time; second. researchers and teachers were expected to work together and share meaningful experiences; and third. researchers and teachers are expected to provide feedback on shared thoughts. feelings. and experiences while providing stimulation in learning.

The Role of Researchers and Teachers

As the stimulation takes place. researchers play an active role and provide new information or work on new skills in addition to managing the activity process. Researchers and teachers are expected to conduct experiments on new behaviors so that teachers can specifically master the skills in helping to stimulate the multiple intelligence potential of kindergarten-age children.

Activity Scenes

The stimulation activities adhere to the steps of learning. therefore it has opening. core. and closing stages. The activities in each stage use various techniques and strategies in group guidance. Each stimulation session is carried out in the classroom and outdoors if possible. The researchers and teachers attempt to gain mutual trust and cooperated to enable sharing personal experiences and getting feedback from fellow members. The presentation of information and the introduction of new skills use computers. LCDs. and audio and graphics media.

Implementation of Stimulation Activities

This implementation of multiple intelligence detection and stimulation activities was conducted for 9 sessions. Explanation of each session is detailed as follows table 3.

Table 3
Implementation of stimulation activities

Sesion	Activity Name	Purpose	Techniques	Time	Media	Evaluation
1	An observation activity	to find out the counselee's insight and mastery about the multiple intelligences of kindergarten-age children	Discussion. observation	60 minutes	Worksheets	Analyse teacher Skills
2	Why is the development of plural intelligence for children's kindergarten important? "	Group members understand the essence of the development of plural intelligence for kindergarten children	Discussion. question and answer and contract behavior	60 minutes	Materials on the development of the plural intelligence for children of kindergarten	The success of this session was observed from a contemplations understanding of the essence of plural intelligence in children's Park age and development efforts.
3	Successful tips for developing child language intelligence	Group members understand the essence of child language intelligence	Discussion. exploration. and questioning	60 minutes	Educational game tools	This session was assessed successfully if the teacher was able to identify and have various ways to develop the child's language intelligence.
4	What is it about mathematica logical intelligence and how does it develop?	Researchers and teachers understand the essence of the mathematical logical intelligence of kindergarten age children and able to stimulate it	Discussion. simulation and question and answer	60 minutes	Educational game tools	This session was assessed successfully if researchers and teachers were able to identify and have various ways to develop the mathematical logical intelligence of children.
5	Effective strategy to develop kinaesthetic-physical intelligence for children of kindergarten age	Researchers and teachers understand the essence of kinaesthetic-Physical intelligence for children of kindergarten age and able to stimulate it.	Discussion. simulation and question and answer	60 minutes	Educational game tools	This session was assessed successfully if the teacher was able to identify and have various ways to stimulate the kinaesthetic-physical intelligence of kindergarten children.
6	Musical intellect for children aged kindergarten	The teacher understands the essence of the kindergarten children's musical intelligence and is able to stimulate it appropriately	Discussion. simulation and question and answer	60 minutes	Education game tools	This session was assessed successfully if the teacher was able to identify and have various ways to stimulate the kindergarten child's musical intelligence.

7	Urgency of interpersonal intelligence for children of kindergarten age	Teachers understand the essence of kindergarten children's age and able to stimulate it appropriately	Discussion. simulation and question and answer	60 minutes	Education game tools	This session was assessed successfully if the teacher was able to identify and have various ways of stimulating the interpersonal intelligence of kindergarten children.
8	An effort to develop intrapersonal intelligence effectively	The teacher is able to understand the essence of intrapersonal intelligence of kindergarten age children and is able to stimulate it	Discussion. simulation and question and answer	60 minutes	Education game tools	This session was assessed successfully if the teacher was able to identify and have a variety of ways to stimulate the intrapersonal intelligence of kindergarten children.
9	Characteristics of children's naturalist intellect of kindergarten and efforts to develop it	Members of the group understand the essence of the children's naturalist intelligence kindergarten age	Discussion. simulation and question and answer	60 minutes	Education game tools	This session was assessed successfully if the group members were able to identify and have various ways to develop the children's naturalist intellect

Observation Results

Multiple Intelligences Profile of TK Lab UPI and Nur Arrahman Kindergarten. The results of the multiple intelligence stimulation of kindergarten-age children based on school. and presented in the following table 4.

Table 4
The results gain of the kindergarten children's multiple intelligences stimulation at group 1 and group 2

No	Intelligence	Group 1	Group 2
1	Linguistic	33.84	32.27
2	Logical Mathematic	31.48	32.22
3	Spatial Visual	25.93	32.50
4	Physical Kinesthetic	26.54	24.44
5	Musical	30.30	31.36
6	Interpersonal	23.89	24.50
7	Intrapersonal	27.22	30.50
8	Naturalist	31.31	27.27
Average		28.81	29.38

From table 4. it is inferred that the average stimulation of multiple intelligence of students at group 1 was 28.81 and at group 2 was 29.38. For students at group 1 the largest gain was linguistic intelligence (33.84) and the lowest was interpersonal intelligence (23.89). Meanwhile. for students at group 2 the largest gain was linguistic intelligence (32.27) and the lowest were physical kinesthetic intelligence (24.50). For clarity. the enhancement of the multiple intelligences of kindergarten students can be seen in chart 1 below.
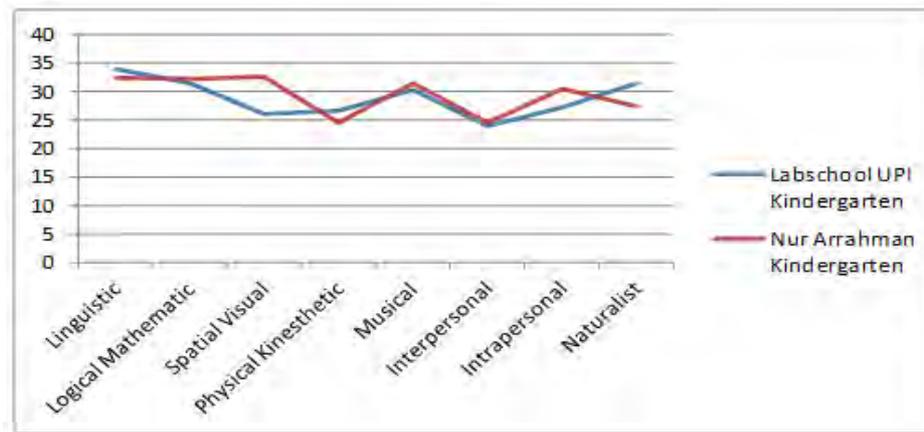
Chart 1
The results gain of the kindergarten children's multiple intelligences stimulation at group 1 and group 2

From the implementation and results of observation. the author determines the reflection for the next activity is need better stimulation in terms of developing interpersonal intelligence and physical kinaesthetic. In this case researchers will develop more media and activities to develop such intelligence. The activities needed are the direct activities that the child has to make learning more meaningful and easier to understand the child.

DISCUSSION AND CONCLUSIONS

The results showed that the research instrument to detect and stimulate multiple intelligences for kindergarten children. The instrument was reviewed by experts and it can be used to stimulate and detect multiple intelligences in kindergarten children. This research has also produced guidelines for learning models to detect and stimulate the multiple intelligences of kindergarten children. The guidelines were analyzed by experts of early childhood education and child development psychology so that they are considered appropriate to stimulate multiple intelligences for kindergarten children. The developed learning guide consists of an introduction. relationship characteristics. rules of activity. roles of researchers and teachers. activity scenes. implementation of stimulation. and evaluation of activities.

The learning model guidelines showed satisfactory results in increasing the multiple intelligences of kindergarten-age children while simultaneously indicated an increase in the multiple intelligences of the children before and after the stimulation. Since it was designed by researcher-practitioners. it is undeniable that the increase in the children's multiple intelligences occurred because the researchers-practitioners started from an understanding of the special skills and experiences needed by children to achieve success in the learning place and in life and even paid attention to children's development. needs. and interests. and helped children learn life skills (Kartadinata. 1998).

Various techniques can be used in this learning model guide such as teaching. exchanging information. playing roles. training. and tutorials. In terms of orientation. this learning model emphasizes the optimal development of potential and strengths that exist in individuals. This learning model views that individuals have certain potentials and strengths. through the application of various potential and strength guidance techniques developed. In this learning model. learning services are provided to all individuals. not only to individuals who face problems. This learning model can be carried out individually. in groups. even classically by providing information. discussions. group processes. and channeling talents and interests.

According to Myrick (Murro & Kottman. 1995). effective learning models are based on an understanding of the skills. needs. and special experiences required by students to achieve success in educational activities and in life. In addition. this learning model uses the right approach used in the structure of educational institutions because it is directed to pay attention to the students' stages of development. needs. interests. and life skills. Kartadinata (1998) explain that the development approach departs from the thought that healthy development will take place in healthy interactions between students and their environment. This thinking carries two main implications in guidance in schools/educational institutions. Firstly. development is the purpose of guidance. which means that counselors need to have an adequate frame of mind and skills to understand student development as a basis for formulating goals and content of the guidance. Secondly. healthy interaction is a developmental climate that must be developed by the teacher. This means that teachers need to master specific knowledge and skills to develop an environment as a support system for implementing guidance.

The use of developmental approaches in mentoring to improve students' self-potential has been widely used in the educational scene from kindergarten to university with very satisfying results. In enhancing the kindergarten children's multiple intelligences. this approach emphasizes the importance of the teacher's efforts in paying attention to the psychological aspects of the children such as intellectual abilities. attitudes. interests. and personality. In this case. developmental guidance not only pays attention to how children learn but also leads to efforts to help children use various abilities they have including their plural intelligence.

Modifying learning material can also be used as an alternative to fun activities so that it can help strengthen the psychological aspects of children. For example. teachers can explain the definition of concepts in science lessons in the development of mathematical intelligence by using songs that are familiar with children or illustrate verbal material in the form of pictures that are either still or moving. In this case. the teacher can also provide various facilities that allow children to develop their imagination. Lwin (2003) asserted that when the teacher/companion teaches the child to really pay attention to what he sees around him and to create a constructive picture in his mind using his imagination. the teacher/companion will eventually find that the child will be more creative. This is because creative visualization and imagination are the two main aspects of creative thinking.

In enhancing the multiple intelligences of kindergarten children. there is a supporting element that lies in the assessment and giving feedback that can strengthen the formation of new behaviors. This assessment and feedback need to be carried out throughout the guidance process. Diagnosis is made to identify difficulties faced by children. and improvement and reinforcement are done to bridge new patterns of behavior. This supporting element relates to the teacher's efforts in developing work relations that can reach children and enable them to develop abilities and the participation of all children in the interaction process.

The results of this research also showed that a developmental approach in helping to increase multiple intelligences was seen in efforts to help children to be able to place values in themselves as children. to believe in themselves. to believe in their own abilities and have self-esteem. to be able to work and try seriously. to be able to utilize groups to facilitate and improve children's development. to be able to integrate groups so that children feel they have a place in groups. to help develop skills sequentially and psychologically that enable children to succeed. to recognize and focus on the strengths and assets of children; and to utilize children's interests as the energy source in teaching.

Results showed that the research instrument has been acquired for the detection and stimulation of the children's plural child of the kindergarten which is tested for validity and realibility and tested by the legibility that has been studied by experts so that it can be used to stimulate and detect the plural intelligence of kindergarten children.

The research has also resulted in a learning model guidelines to detect and stimulate the children's plural intelligence of kindergarten that has been analysed by early childhood education experts and Child Development Psychology so that the view is worthy to be used to stimulate the children's plural intelligence of kindergarten. The learning guidelines are developed consisting of introduction. relationship characteristics. activity rules. researcher and teacher roles. activity scenes. implementation of stimulation and evaluation of activities.

The test results of the Learning Model Guide in enhancing the plural intelligence of kindergarten age children show quite satisfactory results as well as indicating the increase in the plural of children before and after gaining stimulation. The results showed that all the children's plural intelligence indicators could be significantly improved after using a learning model designed by researchers. This instrument can be used by all kindergarten institutions to detect children's growth and development at the beginning of the year or during learning.

Recommendations for kindergartens policy agencies can design and decide the policies are (1) designing training programs to improve Kindergarten teachers ' ability to design learning that can stimulate the potential of the growth of the children of the kindergarten age.(2) Invite kindergarten Children's childhood education to jointly develop a learning curriculum that is adaptive to the development of the Children's childhood intelligence. (3) Determine kindergartens that have successfully applied the learning of plural intelligence as a model so that it can be used as an example for kindergarten.

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ATTACHMENT

Profile Instrument to Detect and Stimulate Multiple Intelligence in Kindergarten Students
Kindergarten Name   :
Child Identity   :
1. Child's Name :
2. Groups   :
3. Age   :

No	Statement	Yes	No
1	Always looks happy when playing with language tools		
2	Always wants to be the first when the teacher presents activities with wordplay		
3	Expresses desire to play using words		
4	Shows high interest in stories in a book		
5	Can tell a story correctly		
6	Likes to tell friends/other people about an event		
7	Likes wordplay		
8	Shows an enthusiasm when reading a story with the teacher in class		
9	Has a lot of vocabulary for children his age		
10	Can communicate with others verbally		
11	Can say words that are difficult to pronounce (ex: conditions. abstracts. etc.)		
12	Is asked by many about how things work		
13	Shows high interest in a game by making categories. hierarchies. or other logical patterns		
14	Can express opinions with a clear concept		
15	Show high interest in the game by making categories. hierarchies. or other logical patterns		
16	Can last long in activities that involve numbers		
17	Can quickly understand the rules of game related to science		
18	Can easily count numbers through games		
19	Shows interest in activities related to science		
20	Can last long in activities that involve numbers		
21	Can show visual shadows clearly		
22	Is diligent in doing puzzles or mazes		
23	Shows high enthusiasm in art development activities		
24	Is good at drawing that sometimes looks almost or exactly like the original		

25	Shows high interest when watching a story
26	Can easily distinguish types of textures
27	Can mention the types of colors correctly
28	Likes to do puzzles. mazes or similar visual activities
29	Can build attractive three-dimensional constructions (e.g. LEGO buildings)
30	Shows an enthusiasm when the teacher explains something using visual media
31	Often draws on books or paper
32	Can last long in activities that use visual media
33	Demonstrates ability in the physical/sports field
34	Is fond of moving. cannot stay still. tapping that table or restless when sitting for a long time in one place.
35	Shows a high level of interest in games involving motor physical activity
36	Is diligent in playing constructive toys/objects
37	Likes running. jumping. wrestling. or similar activities
38	Has good fine motor coordination in certain fields
39	Is good at imitating the gesture or behavior of others.
40	Likes working with clay/plasticine or other experiences that involve the touching by the hands
41	Is happy to spend free time with activities in an open space
42	Can show the wrong tone in a singing
43	Is often humming while doing something
44	Is sensitive to sounds such as raindrops on the roof
45	Demonstrates high interest when listening to the sound of music in an activity
46	Loves to play a musical instrument
47	Often sings songs that he has mastered
48	Tapping on the table while doing something/studying
49	Has a sweet voice
50	Gets excited when music is played
51	Quickly memorizes new songs
52	Loves to sing both individually or in groups
53	Likes to socialize with peers
54	Has a talent to be a leader
55	Gives advice to friends who have problems
56	Likes to hang out/make friends
57	Has two or more close friends
58	Have empathy or good attention to others
59	Is loved by many friends
60	Is easy to adapt to a crowded environment
61	Often visits a friend's house
62	Likes playing activities that involve other people
63	Demonstrate self-reliance or a strong will
64	Shows unyielding attitude towards something that hasn't worked
65	Does not cry easily if failed in doing something
66	Does not depend on others in doing something
67	Shows enthusiasm in doing something he/she likes
68	Can mention what will be done tomorrow
69	Can show mood well
70	Show an attitude of confidence in yourself
71	Show an attitude of confidence in yourself
72	Can be left playing or learning alone
73	Shows a consistent attitude even if you have to do something yourself
74	Talks a lot about pets or favorite natural locations
75	Shows a high level of interest in natural or animal life stories
76	Excited when watering plants
77	Can retell stories related to flora and fauna
78	Shows affection towards pets
79	Shows high interest in animal images
80	Does not show fear of animals
81	Likes playing in natural areas. animals. or the sea in the class.
82	Advises friends who behave negatively towards animals and nature
83	Can reprimand other friends who show an attitude of disliking/hurting animals