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1 **Analysis Basic Movement in *Minang* Dance that Modifies into Braindance for**
2 **Children Creative Thinking Skill**

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7 **ABSTRACT**

8 It is important to develop creative-thinking skills so that children are trained to be able to
9 generate new ideas as alternatives in solving problems. Many studies have discussed about
10 moving activities in early childhood, which can improve child creativity. Brain dance activities
11 that are created from the traditional dances can be suitable activities. The purpose of this study
12 was to analyze the movements of the *Minang* dance which were created into a brain dance,
13 good for creative-thinking skills. Using qualitative methods, data collection was carried out
14 through interviews with *Minang* dance experts, early-childhood teacher reflection journals, and
15 analysis of the brain dance audio-visual documents. Through typological analysis techniques,
16 the study found four ideal types in the category of creative thinking abilities in children. The
17 findings show that several indicators of skills are the result of analysis of the basic movements
18 of the *Minang* dance, namely independence and having confidence to appear in front of the
19 public (typology 1), children have different and divergent thinking skills (typology 2), children
20 have imagination and analogical reasoning (typology 3), children have skills find and solve
21 problems (typology 4). Further research can explore the richness of Indonesian regional dances
22 which are developed into children's educational dances and are related to the potential of
23 another children development.

24 **Keywords:** braindance based *Minang* dance, creative thinking skills, early childhood

25 **Introduction**

26 Creativity in a changing world has been considered important in various fields such as in
27 technology, art, economics, sociology but also in Education. Creative thinking skills need to be
28 developed from an early age so that children are trained in generating new ideas and able to
29 solve problems (Carroll & Howieson, 1991). Activities need to be done to develop the ability
30 of the imagination which is a fantasy situation, but it is important to offer context to children
31 for self-expression (Chappell, 2007). Especially during the Covid-19 pandemic that hit the
32 world, it is a situation that requires a lot of human creativity to survive. Cultivating creative
33 thinking skills from an early age is an urgent matter to prepare young people to face bigger
34 obstacles. Learning confined children requires different stimulation in improving various
35 aspects of development.

36 Creative thinking based on the way it is expressed, identified in the natural environment, not
37 just in certain professional fields. It is a general-domain and not a specific task, so that creativity
38 generates many attitudes to life, becomes a problem-solving skill, can be identified in everyday
39 activities, and is not only expressed in one area. Related research makes it clear that a person's
40 ideas do not have to embody thoughts that have never occurred to anyone.
41 Conversely, creativity is a new thought for the person (Riga & Chronopoulou, 2014).

42 There are many movement activities that can develop children's creative thinking skills, such
43 as research conducted by Cheung (2010) which is designed based on: first, introducing themes;
44 second, acquiring and exploring movement; third, creation and expression skills; fourth,
45 performance with appreciation. The results showed that the response to children's movements
46 became more varied and always gave surprises to the teacher. Another Movement activity
47 according to Chiang (2017) is brain dance, which is a series of progressive and controlled
48 movements ²⁷ based on the eight main movement patterns of brain development. This is a warm-
49 up exercise ²⁵ that combines physical and mental activity. Brain dance can help correct any

50 neurological imbalances that may have occurred during this time, as well as to encourage
51 integration of mind and body. The Next research is about brain dance using ²⁹ traditional and
52 creative dance analysis in the context of physical education in the school environment,
53 supporting students' psychomotor, cognitive, creativity, and social and emotional development
54 (Angela, 2011). Braindance can also be modified by using the basic movements of the *Minang*
55 dance, because it is identical to the movements of pencak silat (Asriati, Kosasih, & Desfiarni,
56 2019) which have a philosophical meaning and function to refresh the body and mind such as
57 braindance.

²⁸ Based on the fact of the problem of creative thinking skills and relevant research that explains
58 creativity in early childhood (Gu, Dijksterhuis, & Ritter, 2019; Hui, He, & Ye, 2015; Leggett,
59 2017; O 'connor, 2012; Ritter, Gu, Crijns, & Biekens, 2020; Ritter & Mostert, 2017; Sun,
60 Wang, & Wegerif, 2020; Yates & Twigg, 2017), and the impact of moves such as dance
61 activities on these skills ²¹ (Carley Wright, 2018; De Giorgio, Kuvačić, Milic, & Padulo, 2018;
62 Neville & Makopoulou, 2020; Olga, Georgios, Ioannis, Dimitrios, & Maria, 2018; Thomson,
63 2011; Yamaguchi & Kadone, 2017), so to meet the problem solution, this study aims to analyze
64 basic motion *Minang* dance which is modified into the braindance to develop creative thinking
65 skills in early childhood.
66

67 **Materials and Methods**

68 Using a qualitative method design, research informant's choice was determined based on the
69 sampling criteria technique to get respondents who matched the specified criteria. The
70 informants in this study were two teachers in two kindergartens who teach dance learning
71 activities and *Minang* dance experts to seek information about the structure and motives of the
72 basic movements of the dance. Before the research was conducted, the researcher had obtained
73 permission from informants and the school. Informed consent was given by informants under
74 the head of the kindergarten supervision where the research was conducted.

75 ***Data Collection and Procedures***

76 Researchers conducted interviews with *Minang* dance experts to find the structure, form, and
 77 meaning of the basic movements of the *Minang* dance. Furthermore, the teacher's reflection
 78 journal is used to complete the data on student development description and get information on
 79 the basic movement's implementation of the *Minang* dance. The researcher also analyzed the
 80 brain dance audio-visual document used as a basis for conducting a comparative analysis with
 81 the basic movements of the *Minang* dance.

82 ***Data Analysis Technique***

83 By using typological data analysis, data classification, taken from patterns, themes, or other
 84 types of teacher reflection journals, interview results, and audio-visual document analysis of
 85 brain dance. Data types diversity is also used as a quality standard of research data. The results
 86 of the data analysis show in several typology categories of children's creative thinking skills
 87 contained in the basic movements of the *Minang* dance.

88 **Result and Discussion**89 ***Result***

90 Based on the instrument built from the concept of students' creative thinking skills by Angela
 91 (2011) it has been modified and adapted to the characteristics of early childhood, there are four
 92 categories of students' creativity, and analyzed the basic movements of the *Minang* dance which
 93 were modified based on the audio-visual brain dance document (summary of the result's data
 94 analysis sees table 1)

95 *Table 1. Summary of Data Analysis*

No	<i>Minang</i> Dance Basic Movement	Braindance	Creative Thinking Skills Typology
1	<i>Sambah</i>	Breath	

2	<i>Pitunggua</i>	Tactile touch	Type-1: Children are independent and have the confidence to appear in public
3	<i>Lapiah Jarami</i>	Core distal	Type-2: Children have divergent thinking skills
4	<i>Pijak baro and Gelek</i>	Head - tile	
5	<i>Langkah Panjang</i>	Upper lower	Type- 3: Children have
6	<i>Cabiak kain</i>	Body half	imagination and analogical reasoning
7	<i>Tangan silang langkah silang</i>	Cross lateral	Type-4: Children have the skills
8	<i>Alang Tabang</i>	Vestibular	to find and solve problems

96

97 Four key themes are typologies of the results of data analysis, each theme was further explained,
 98 and distinctive comments were noted to corroborate the findings. Informant code names (see
 99 table 2), as well as representative quotes from the reflection journal have been reproduced to
 100 say the four themes as follows.

101 *Table 2. Code Name, Informant Number and Location*

Bukittinggi School 1 st (S1)	Bukittinggi School 2 nd (S2)	Bukittinggi
I-1 (1)	I-2 (1)	I-3 (1)

102

103 ***Children Are Independent and Have the Confidence to Appear in Public***

104 The results of the analysis of the reflective journal during group *Minang* dance activities show
 105 that children are independent and have confidence to appear in public. The following is an
 106 excerpt from the teacher's reflection journal:

107 *Children dare to dance in front of the audience that deliberately comes to watch the*
108 *dance performance. Children are confident in doing dance and are not influenced by*
109 *the movements of other friends (I-1).*

110 *Children are able to dress themselves in preparation for dance performances, and do*
111 *not look stressed and very enthusiastic about preparing for the performance (I-2).*

112 ³⁷ *Based on the analysis of the results of interviews with Minang dance experts, it is*
113 *explained that the basic movements of the Minang dance are identical to pencak silat,*
114 *can make boys and girls excited and enthusiastic when performing dance movements,*
115 *because the movements of Sambah and Pitunggua have a fresh effect on the body and*
116 *brain (I-3).*

117 *Sambah movement is the same as brain dance, which is the process of taking in and exhaling*
118 *regularly (breath). The motion to do breathing can give oxygen to the body and brain, which*
119 *functions to relieve feelings of stress. While Pitunggua motion is the same as tactile touch, it*
120 *functions to develop body awareness and sensory integration (audio-visual braindance*
121 *document).*

122 ***Children Have Divergent Thinking Skills***

123 *The teachers wrote in their reflection journals, that the results of the Minang dance activities*
124 *also showed divergent thinking skills emergence in children. The following is an excerpt from*
125 *the teacher's reflection journal:*

126 *Children often come up with ideas when given various tools for painting such as colored*
127 *pencils, drawing paper, and some media (dry leaves, wooden twigs, plastic, etc.), it*
128 *seems that the child can make different ideas from their friends, so do they suddenly do*
129 *other creative movements on the basic movements of the dance being taught (I-1).*

130 *In addition to thinking differently when performing dance formations, it turns out that*
131 *even when children play ball in the schoolyard, children have the ability to try to find*
132 *ways to control the ball and get through the goal, and produce different kicks and be*
133 *able to control the ball. (I-2).*

134 *Experts also mention that the basic movements of the Minang dance such as Lapiah*
135 *Jarami are movements that train self-awareness of the surrounding environment, and*
136 *Pijak Baro is a movement to train head reflexes (I-3).*

137 Lapiah Jarami movements resemble movements in brain dance, which are called core-distal
138 exercises, which are an extension and contraction of the body, and strengthening the core
139 muscles which aim to increase spinal mobility. The Pijak Baro movement is principally the
140 same as the head-tilt poses and is aimed at body alignment (Doc).

141 ***Children Have Imagination and Analogical Reasoning***

142 The next finding in the transcript of the teacher's reflection is that new abilities in the child's
143 imagination and analogical reasoning develop better, when children are given moving activities
144 to music accompaniment they like. As the following quote describes this situation:

145 *Unlimited imagination can be observed when the teacher tells a story, then unexpected*
146 *questions arise from the child, and other children answer with different stories that*
147 *describe their imagination (I-1).*

148 *Analogical reasoning can be seen when children explore motion. When asked what the*
149 *movement described, the child then answered, "the movement is like a flying bird." Then*
150 *when asked the other children what they were doing, they answered "we are doing the*
151 *rabbit movement that is looking for food." (I-2)*

152 *According to experts, 'Langkah panjang' are movements that coordinate hand and foot*
153 *movements alternately or simultaneously, and 'Cabiak Kain' motion is a motion that*
154 *coordinates the right and left body movements (I-3).*

155 The *Langkah Panjang* motion is in the brain dance movement, which is the upper lower part
156 which aims to increase emotional stability, and the *Cabiak Kain* depicts the moving body half
157 with the aim of helping equal mobility on both sides of the body and serves to support horizontal
158 searching (Doc).

159 ***Children Have the Skills to Find and Solve Problems***

160 The data categorization concludes another finding of analysis on the basic movements of the
161 *Minang* dance which shows problem finding and solving skills emergence, which are the most
162 important findings because these are related to various life problems. The teacher's reflection
163 writes as follows:

164 *Children have the skills to find problems that can be seen when children play puzzles*
165 *together. A child says that the puzzle pieces do not match the areas to be pasted. Then*
166 *another child said that if the number of puzzle parts was insufficient then we could not*
167 *complete the puzzle arrangement according to the prepared picture, at times like this*
168 *the teacher asked what the solution was? And children come up with various ideas for*
169 *it (I-1).*

170 *Problem-solving skills are seen when children play blocks in groups with their friends.*
171 *Each child in turn can arrange the blocks according to the shape they make, without*
172 *any blocks falling. The children managed to arrange the blocks well, because they could*
173 *expect by placing the blocks proportionally based on previous experience (I-2).*

174 *Dance experts revealed in the interview session that the basic movements of the Minang*
175 *dance such as 'Tangan silang langkah silang' are movements that are performed by*

176 *crossing arms and legs. This movement aims to train the right and left side coordination*
177 *of the body. Meanwhile, the 'alang tabang' motion is a motion carried out by turning*
178 *the body to the right and left. This movement aims to train awareness and body balance*
179 *(I-3).*

180 The *Tangan silang langkah silang* and *alang tabang* movements were the same as brain dance,
181 namely cross-lateral and vestibular. The cross-lateral aims to synchronize movements from the
182 opposite side of the body, show a pathway between the right and left hemispheres, and support
183 body awareness and vigorous thinking. Meanwhile, the *alang tabang* motion and vestibular
184 pose are intended for balance response and processing of sensory input.

185 **Discussion**

186 The research findings show the results of the basic movements analysis in *Minang* dance can
187 be modified into brain dance for early childhood creativity. Creative thinking skills are one of
188 ²⁶ the most sought-after life and work skills of the 21st century. The demand for creativity,
189 however, exceeds the level of its availability and development (Ritter et al., 2020). Preschool
190 teachers must give children with stimulation to trigger and offer opportunities for imagination,
191 ³³ explain their ideas, appreciate children individuality, and must encourage their different points
192 of view (Dere, 2019). Various activities can be carried out by the teacher to stimulate students'
193 creative thinking skills, such as through moving activities.

194 ³² Recent research on the effects of music and dance training on children's cognitive has also
195 shown mental improvement (D'Souza & Wiseheart, 2018), which is what is needed during the
196 Covid-19 pandemic. The results of this research showed that the basic movements in *Minang*
197 dance, namely *sambah* movement or breath that were carried out by controlling the breath
198 function to relieve feelings of stress. *Pitunggua* or tactile-touch functions to develop body
199 awareness and sensory integration. Physical activities accompanied by music, such as brain

200 dance on current research have proven that it can help children's cognitive development (Bugos
201 & Demarie, 2017). Feelings of comfort in children can develop independence and have the
202 confidence to appear in public, because dance movement activities can build self-confidence
203 and encourage children's potential development (Chappell, 2007).

204 The next point is that the basic movements in *Minang* dance such as *Lapiah Jarami* or core-
205 distal are movements that train self-awareness of the surrounding environment, and *Pijak Baro*
206 or head-tile is a motion to train the reflex of head movement. Both movements can develop
207 body harmony and visual acuity, so that they can build different thinking skills, which are an
208 important strategy in adapting to new circumstances (Nikkola, Reunamo, & Ruokonen, 2020).

209 ²⁴ Divergent thinking can be described as the process of regaining existing knowledge and
210 associating and combining unrelated knowledge and meaningful ways (Marron & Faust, 2018).

211 The basic movements of the *Minang* dance such as *Langkah Panjang* or upper lower can
212 increase emotional stability, and the motion of *Cabiak Kain* or body halt functions to support
213 horizontal vision. This movement is related to the ability of imagination and analogical
214 reasoning that can overcome fixed thinking patterns and find various alternatives (Sun et al.,
215 2020).

216 Dancing activities for pre-school children has demonstrated the ability of ³¹ Sensorimotor
217 Synchronization, Balance, and Movement Reaction Time (Chatzihidiroglou, Chatzopoulos,
218 Lykesas, & Doganis, 2018). This requires great attention from early-childhood educators, so
219 that they can apply more specific programs to children's brain development, such as modified
220 brain dance. The next important finding was that 'cross-lateral hand gestures were for
221 synchronizing movements from the opposite side of the body, establishing a pathway between
222 the right and left hemispheres, and supporting body awareness and vigorous thinking.
223 Meanwhile, *alang tabang* motion and vestibular motion are aimed at equilibrium response and
224 processing of sensory input. Both movements can build the ability to find and solve problems.

225 Teaching creative problem solving will give students the right tools to solve various problems
226 in the future and not helping them solve specific problems (Kashani-Vahid, Afrooz, Shokoohi-
227 Yekta, Kharrazi, & Ghobari, 2017).

228 Because dance training can form perceptions of action and its neural application in the brains
229 of young people and adults (Kirsch, Diersch, Sumanapala, & Cross, 2018), therefore, dance
230 training has become a special urgency at this time, especially during the Covid-19 pandemic
231 which has taken a lot of happiness for most people. Brain dance with various kinds of
232 movements (Gilbert, 2005), as well as musical accompaniment with traditional idioms will
233 bring people to a happier atmosphere because of the familiar local music. So, the results of this
234 study are expected to offer an overview for teachers and parents who, moving activities such as
235 dancing associated with braindance and created with the basic movements in traditional *Minang*
236 dance can build early childhood creative thinking skills. In addition, the basic movements in
237 *Minang* dance are identical to '*pencak silat*', namely martial arts movements that can develop
238 children's sensitivity to situations (Asriati et al., 2019).

239 **Conclusion**

240 The most important substance obtained from the analysis of the basic movements in Minang
241 dance which was modified and created into a 'brain dance', to meet the stimulation needs of
242 aspects of creative thinking skills in children, has shown four typologies that can be used as
243 data sources for similar research. The results of this research are that moving activities such as
244 dancing, especially braindance, for early childhood can be done by enhance national wealth, so
245 that the benefits obtained, in addition to direct stimuli related to music and movement, typical
246 traditional features will become familiar with children. The prospect of developing this research
247 is media application with local cultural content that can help teachers in developing various
248 important aspects of children and create many forms of dance education.

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