Dissimilarity of Female and Male Early Childhood Cognitive and Social Emotional

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Abstract: The present research aims to identify cognitive dissimilarity and social emotional for both male and female toddlers. The method of this study is library research. The data were analyzed according to some literature reviews and scientific research report. To analyze the data, the researcher uses content analysis. The result of this study shows that cognitive dissimilarity between either male and female children are according to their competence of math, visual-spatial, and verbal competence. Then, dissimilarity of social emotional between both male and female children are based on their empathy, sense of helping others, caring to the environment, respect to the teachers, have a strong will to learn, and prosocial behaviors. The factors that influence cognitive dissimilarity and social emotional of both female and male children are biological factor, social factor, parenting, friends, teacher factor and school environment, and also the role of media. The implication is, either parents or teachers need to understand and accept those dissimilarity and try to find out some strategies to stimulate the children’s cognitive and social emotional development for both female and male toddlers.
Keywords: Children/toddlers, early childhood, cognitive, dissimilarity, social-emotional.

INTRODUCTION

Children who have just born until six years of age are referred as early childhood/toddlers\(^1\). According to data from the Central Statistics Agency in 2019, the number of children who have just born to four years of age is nearly about 27 million in Indonesia\(^2\). From this data, the number of early childhood in Indonesia can be included as large. By this fact, it is together task in educating Indonesian children because children aged 0-6 are assets of nation and the future of this nation is determined by them.

Some efforts are needed in order to create high quality generation of this nation. Some of them are stimulating and preparing early childhood education. Toddlers, as the early childhood are on the age of growth and development. Growth is related to physical changes that can be measured\(^3\), while development is related to changes experienced by an individual to reach maturity both physically and psychologically\(^4\).

The development in early childhood needs to be stimulated optimally because if it is not done properly, the children will experience developmental delays\(^5\). One of the factors of developmental delay in early

\(^1\) Law of National Education System point 28 No.20 year 2003 verse 1.


childhood is parents’ ignorance in stimulating their children’s development. Research conducted by Chia-Yin Chung also investigated that there was a relationship between parents who did not pay attention to their children and developmental delay in children. So from that we need some guidance that are parallel with children’s development.

There are six developments that need to stimulate the children aged 0-6 years (moral-religion, social-emotional, art, language, cognitive, and motoric). Cognitive and socio-emotional are two important aspects of development for early childhood. Early childhood cognitive development is related to the children’s ability to think. Meanwhile, early childhood socio-emotional development is related to children’s responses they experience and children’s adjustments to their surrounding environment.

Early childhood children can be classified based on their gender. By then, there is a question through the presence of dissimilarity between two. If there is so, what factors influence it? Does dissimilarity exist in early childhood due to congenital or environmental factors? Then, what are the implications? These several things then become the main issues that need to be overcome.

There are some previous studies which relate to this issue. First, is a research conducted by EW Latifah, D. Krisnatuti, and H. Puspitawati entitled “The Effect of Mother and Grandmother Parenting on Independence and Cognitive Development of Preschool Children”. The

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study found that children’s development and cognition increased with they feel safe by mothers’ and grandmothers’ parenting. Second, research from K. Srianis entitled “The Application of Geometry Puzzle Methods to Improve Children’s Cognitive Development in Recognizing Shapes”9. The study identified that the children’s cognition improved in recognizing shapes after the geometric puzzle method was applied.

Third, a study conducted by SR. Setyamingrum and T. Triyanti, entitled “Learning in Early Childhood Education with Early Childhood Cognitive Development”10. The study showed that there are four factors that affect children’s cognitive development, they are the provision of vitamin A intake, maternal knowledge, zinc intake, and learning in early childhood education.

Next is research highlighted in socio-emotional of early childhood. First, the research that was done by E. Latifah, Dwi Hastuti, and Melly Latifah entitled “Breastfeeding and Psychosocial Stimulation on the Social-Emotional Development of Toddlers in Working and Unworked Mother Families”11. The study discusses the absence of breastfeeding effect on socio-emotional development of toddlers.

Second is a study conducted by Nurul Afrianti entitled “Alternative Traditional Games for Early Childhood Social-Emotional Competency

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Development”\textsuperscript{12}. This research discusses the social-emotional development of early childhood through traditional games.

Next is research which focus on children’s gender. First, a journal article written by Diana Setya Ningsih entitled “The Relationship between Sex and Oral Hygiene of the Orphanage Children” \textsuperscript{13}. The study discusses whether there is a relationship between gender and children’s hygiene. What this research has in common with the current research is the same in researching between both male and female children. The difference lies on the age where the previous one took 12 years old children, while the present one examined early childhood/toddlers. Furthermore, the study discusses the relationship between gender and oral hygiene, while the current one discusses cognitive and socio-emotional differences between female and male toddlers in early childhood.

Next research was written by Alit Kurniasari et al entitled “Prevalence of Violence through Male and Female Children in Indonesia” \textsuperscript{14}. The research discusses violence against male and female children in Indonesia. This study has similarities in the current research in terms of examining gender. The difference between this study and the present one is that the research focuses on examining violence (physical, sexual, and emotional), while the current research focuses on cognitive and socio-emotional.


The current research is different from the previous studies presented above. This study discusses in depth the cognitive development, socio-emotional development, cognitive and socio-emotional dissimilarities in male and female children in early childhood, as well as factors that influence the existence of cognitive and socio-emotional dissimilarity between male and female early childhood. So, from this explanation, the purpose of this study is to describe the cognitive and social emotional dissimilarity of women and men, especially in early childhood.

METHOD

The current research applies qualitative approach by design library research. The source of data consists of two kinds, first is primary source and second is secondary source. The primary source were some books about children’s development. The secondary ones are some research related to cognitive, social-emotional, and male and female toddlers.

FINDING AND DISCUSSION

Children’s Cognitive Development in Early Childhood

Cognitive aspect is needed when children are faced with problems that ask children to think. There are two cognitive activities, namely remembering and thinking\textsuperscript{15}. Remembering is an activity carried out to realize that there is knowledge that has been gained or experienced. For example, during the learning process between Early Childhood Education (PAUD) teachers and PAUD students, the teacher asked one of the students to explain again what the teacher had taught at the meeting yesterday. Then, the student can answer correctly, so that’s where early childhood cognitive stimulation occurs because the child is able to remember.

\textsuperscript{15} Peraturan Menteri Pendidikan dan Kebudayaan RI, ayat 10 (4) Nomor 137 Tahun 2014 tentang Standar Nasional Pendidikan Anak Usia Dini.
Furthermore, the second cognitive activity is thinking. Thinking is the use of reason to consider and decide something\textsuperscript{16}. For example, when PAUD students can correctly answer questions about numbers.

**Cognitive Dissimilarity of Male and Female Children**

Male children are superior in math competence and visual spatial (design angles and dimensions of buildings), while girls have more ability in verbal competence\textsuperscript{17}. The same study investigated by Blake et al. Male children are better in visual-spatial abilities\textsuperscript{18}. The similar study carried out by Purwanti regarding to mathematical abilities, that mathematical abilities of male children were superior in the learning process of addition\textsuperscript{19}.

According to Maria Ulpah, math competence is not only influenced by biological factors, but also by environmental and cultural factors of children\textsuperscript{20}. Therefore, math ability cannot only be seen from the gender of the children. Furthermore, discussing verbal competence, one of the factors that influence it is that the broca area of female brain is wider than men. Broca’s area affects language acquisition. So, in terms of speaking, women are more competent\textsuperscript{21}.

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\textsuperscript{17} Eleanor Emmons Maccoby and Carol Nagy Jacklin. *The Psychology of Sex Differences*. (California: Standford University Press, 1974).


\textsuperscript{20} Maria Ulpa. “Gender dan Pembelajaran Matematika” *Yin Yang: Jurnal Studi Gender, Perempuan dan Anak*, 2014,

The implication of dissimilarity in mathematics and verbal abilities in early childhood for male and female is that parents and teachers need to understand and accept the cognitive dissimilarity of male and female children. Furthermore, parents and teachers need to use strategies for stimulating the cognitive development of male and female in early childhood.

**Social-Emotional Development in Early Childhood**

Social-emotional in PERMENDIKBUD RI year 2014, explained that the socio-emotional in early childhood is divided into three parts, they are: 22

1. Self-awareness of children includes knowing feelings and being able to control themselves, showing self-efficacy, and being able to adjust to others.
2. Responsibility for themselves and others which includes the children’s ability to know their rights, obey the rules, regulate themselves, and have responsibility for their actions.
3. Prosocial behavior includes the ability to play with peers, understand their own feelings, respond to and share with others, demand politeness, cooperative, and respect the rights, opinions and work of others.

According to Jahja, there are five stages of socio-emotional development, they are 23: 1). Early childhood; 2). Critical period; 3). Late childhood; 4). School children; and 5). Critical period II.

**Early childhood**. This stage is for newborns to two years of age. At this stage the child begins to get to know other people and their

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environment. Children begin to observe, respond to others, to move their bodies from playing with their own hands to learning to walk.

**Critical period.** This stage is for children aged 3-4 years. Children are in the process of learning their own sensitivity to the environment. This is shown by children starting to dare to ask a lot of questions. In terms of play, children still play (individually).

**Late childhood.** This stage is for children aged 4-6 years. At this stage, children begin to understand the rules and play with their friends. The **school children.** This stage is for children aged 6 to 11 years. At this stage, children begin to accept other people’s decisions. **Critical period II.** This stage is for children aged 12-13 years. At this stage, children socialize with others and become more familiar.

Furthermore, there is a standard level of achievement for social emotional development in early childhood, which has several indicators, they are\textsuperscript{24}:

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Achievement Standards for Social Emotional Development of 3-6 Years Old Children</th>
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<tbody>
<tr>
<td>Age 2-3 year</td>
<td>3-4 year</td>
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<tr>
<td>1. Children begin to be able to ask permission when they want to urinate and defecate</td>
<td>1. Children can urinate without help</td>
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<tr>
<td>2. Children begin to understand other people’s rights, such as queuing for their turn.</td>
<td>2. Children can be patient</td>
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\textsuperscript{24}Peraturan Menteri Pendidikan dan Kebudayaan Republik Indonesia Nomor 137 Tahun 2014, Pasal 10 Ayat 1 Nomor. 6, tentang Standar Nasional Pendidikan Anak Usia Dini.
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<td>3. Children are willing to share, help, and cooperate</td>
<td>3. Children have a tolerant attitude so they can do something in a team</td>
<td>3. Children show enthusiasm in cooperative play</td>
<td>3. Children are able to express the emotions they feel and in accordance with the conditions</td>
</tr>
<tr>
<td>4. Children express feelings they feel to others</td>
<td>4. Children can respect others</td>
<td>4. Children are able to control their feelings</td>
<td>4. Children know the manners according to where they are</td>
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<tr>
<td>5. Children are able to play roles</td>
<td>5. Children can react to events around them</td>
<td>5. Children are able to obey the rules in a game</td>
<td>5. Children are able to understand rules and can be disciplined</td>
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<td>6. Children are able to show empathy</td>
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<td>7. Children have a persistent attitude</td>
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<td>8. Children are proud of their work</td>
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<td>9. Children appreciate the advantages possessed by others</td>
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**Social-Emotional Dissimilarity of Male and Female Children**

Discussing about social emotional development in early childhood cannot be separated from helping others and caring for the environment. The results of Aswatun’s research show that male children are lacking in
helping others. Another study from Suhardin also shows that female students care more about the environment than male students.

Next, the selection of play between male and female children. In terms of play, children have the decision to choose the activities they choose and like, especially the selection of play areas and types of games. This is because male and female children often play separately because there are games specifically labeled for females and there are games specifically for males. For example, dramatic play has a role for children’s literacy, but these games are considered games for females because girls often play these games, so this is contrary to males’ masculinity.

In terms of aggressiveness, physical aggression in male children is more dominant than physical aggressiveness in females. This dissimilarity occurs at the beginning of early childhood development. In another study, girls were more likely to be aggressive than boys in relational aggression in

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29 Prioletta dan Pyle, ibid.
which girls were more able to influence others to like and hate certain children\textsuperscript{32}.

However, the research conducted by Saputra explained that there was no significant difference in aggression between male and female toddlers\textsuperscript{33}. According to him, one of the factors is the absence of differences in aggression due to cultural factors in Yogyakarta. Another determinant of children’s aggression is the unsafe environment\textsuperscript{34}.

About empathy, female children are more empathic than male ones\textsuperscript{35}. In terms of prosocial behavior, female children are more frequently involved during childhood and adolescence\textsuperscript{36}. It is not only a prosocial matter, in academic matters it turns out that girls pay more attention to teachers when teaching in class and are more active than boys\textsuperscript{37}. Even in America, boys complete fewer schools than girls\textsuperscript{38}.

\textit{Biological Influences}


Vol. 4, No. 2, Desember 2020 230
In understanding biological factors, it is necessary to understand hormones. Research on the existence of X chromosome and Y chromosome which used is to regulate human sex (female or male) has been found since 1920.\textsuperscript{39} There are hormones inside human body. Among them, there are estrogen and androgen hormones in the female and male bodies, but the only difference is the amount. The hormone estrogen functions to manage the physical development of women and men, as well as the menstrual cycle in women. Meanwhile, the androgen hormone is responsible for stimulating the male genitals\textsuperscript{40}.

Sexual hormones are not the sole determinant of behavior. Although, the research conducted by Hyde shows that there is a relationship between testosterone (androgen) levels and sexual behavior in adolescent boys\textsuperscript{41}. Male criminals who commit acts of violence have more testosterone\textsuperscript{42}. From this explanation, it can be understood that it cannot be denied that hormones have an influence on male behavior. The evolutionary process in humans makes psychological differences between women and men\textsuperscript{43}. According to evolutionary psychologists, men promote competition and take risks. The natural selection process is more supportive of women to have the ability to nurture.

\textit{Perspective of Interaction}

Furthermore, the discussion about the role of biology affects the dissimilarity of children’s ability directly or indirectly, then these problems

\textsuperscript{40} Santock, \textit{ibid}.
\textsuperscript{41} Janet Shibley Hyde. “The Gender Similarities Hypothesis”. American Psychologist, 2005
\textsuperscript{43} Santrock, \textit{ibid}.
need to answer. For example, if a child has a high level of androgens, the impact is, his muscles are strong, but on the other hand there are other people who support the child to become a good athlete, then the biological influence does not have a direct effect because of the influence of support from others as well\textsuperscript{44}.

The process of influencing each other continues and recurs throughout the children’s development phase, so that both male and female children actively construct their own version which appropriate to some knowledge about being women and men existed in their environment. Eagly argues that the psychological differences between women and men are not caused by biological evolutionary dispositions, but by differences in social roles and positions between women and men\textsuperscript{45}. From this explanation, it can be understood that the social environment of children has the potential to teach children based on their gender.

\textbf{The Influence of Parenting}

After a baby is born in the world and it is known that the baby is a girl or a boy, everyone around the baby treats the baby according to their gender. Thus, fathers and mothers have an important psychological role in educating their children\textsuperscript{46}. The pattern of care provided by the children family is one of the reasons for making the child accustomed to doing the habits that exist in their family.

\textsuperscript{44} Eleanor E. Maccoby. “Gender and Group Process: A Developmental Prespective. Current Directions in Psychological Science, 2002

\textsuperscript{45} Eagly, \textit{ibid.}

The Influence of Peers

Besides parents, children’s peers also have an important role in children through the way their peers respond or become models of children’s behavior, both for male and female children. Children who play according to their gender will receive rewards from their peers. Children who play games with a gender that is not suitable for their gender will get criticism from their peers\(^{47}\). This is the evidence of the tremendous pressure on children about sex differences.

The Influence of Schools and Teachers

In this case, the teacher is a role model for most children. The paradigm that the teacher gives to the students provides information to the children about the desired behavior by the environment around the children, even though the teacher or the school has the potential to have a bias towards girls and boys\(^{48}\).

Media Influences

The messages displayed by media about what is appropriate and what is not appropriate for women and men also has an impact on children\(^{49}\). The results of research conducted by Rizka Hidayatul Umami seemed to agree with the statement that the media on girls and boys had an influence. He studied the existence of gender bias in children’s literary genre books.

\(^{47}\) Santrock, *ibid.*


CONCLUSION

Based on the explanation above, it can be concluded that cognitive dissimilarity in early childhood, for male children are superior in mathematics and visual-spatial abilities, while for female children are good in verbal competence. Furthermore, the socio-emotional dissimilarity of early childhood, that is the existence of a selection in playing some games for male and female children. Girls are more dominant in empathy, helping, caring about the environment, prosocial behavior, and paying attention to teachers at school.

The cognitive and social emotional dissimilarities of male and female children depend on the factors that influence them, ranging from biological factors, social influences, parenting patterns, peer influence, school and teacher influence, and media influences. The implication of the existence of cognitive and social emotional dissimilarities of female and male in early childhood is that parents and teachers need to understand and accept the existence of this dissimilarity. Furthermore, parents and teachers need to have a strategy in stimulating cognitive development and social emotional development of both male and female toddlers in early childhood.

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Vol. 4, No. 2, Desember 2020 📅 235


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