

THE INTELLECTUAL INTELLIGENCE IN EARLY CHILDHOOD: A SYSTEMATIC LITERATURE REVIEW

Fairuz Rizka Ghazalah
Universitas Pendidikan Indonesia
fairuzrizka@upi.edu

Received: August 1th 2021

Revised: September 1th 2021

Accepted: October 25th 2021

Abstract: Talking about human intelligences, there are 3 things that will be discussed, there are IQ (intelligence quotient), EI (emotional intelligence) and SI (spiritual intelligence). From the three things above, there is only one thing will be discussed in this paper, it is the IQ (intelligence quotient) also known as intellectual intelligence. Specifically, this paper will be discussed the intellectual intelligence in early childhood using the literature study method. Early childhood also known as the golden age, which means in this periods humans grow and develop rapidly. One Arabic proverb says “alwaladu kal warakatil bayda taktabu fii haa maa tasyaa” means a child is like clean white sheet that we can write anything on it. In the golden age, humans absorb information very quickly.

Keywords: Early childhood, Intellectual intelligence, Systematic literature review

OPTIMA: Journal of Guidance and Counseling
Website: <http://ejournal.upi.edu/index.php/OPTIMA>

Permalinks:

How to cite (APA): Name. (Years). title. *OPTIMA: Journal of Guidance and Counseling*, Vol 1(2), Pages 62 - 71.



This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Children are unique creatures (Fazrin et al., 2017). There are many things a child has that makes them special individuals. One of the privileges that individuals have when they are in early childhood is that they experience a very rapid increase in all aspects. Therefore, the early childhood phase is often referred to as The Golden Age, namely the golden age, a period in the human life span that is very important and valuable because in this period the growth and development of individuals increases rapidly both from the physical and mental aspects (Fithri & Setiawan, 2017).

There are many studies that reveal that brain growth that occurs in the fetus occurs very quickly and in very large proportions. Then, when the child is 24 months old where the child is at the early childhood phase, brain growth slowly slows down and in larger proportions. After that, the child no longer experiences brain growth, but the child's brain enters the maturation phase until he is 3-5 years old (Khatimah et al., 2020).

In another study, it was explained that in the early period of human life, there are at least 100 billion neurons that are ready to connect to other neurons, to strengthen this connection, psycho-social stimulation is necessary, if there is no psycho-social stimulation, it is feared the neurons will undergo a process of atrophy (shrinkage) and eventually be destroyed which then if this happens will affect the level of intelligence in children (Chapnick, 2008). Paraparents and teachers should take advantage of this period to meet the needs of children including physical and non-physical aspects, by providing appropriate mental, intellectual, emotional, social-moral stimulation.

METHOD

The research methodology used in writing this article is the Systematic Literature Review (SLR) which was carried out by experts, namely Kitchenham and Charter Kelee. This system is a type of research methodology that is carried out to collect and identify previous articles related to a particular topic, aiming to review and interpret all research in the articles that have been collected and then linked to the focus of the topic being discussed. This system has four phases, namely planning, searching, data extraction and data synthesis.

1. Planning

In this article, after the authors identify based on the 5 articles found, there are 3 problem formulations that will be the main focus of the discussion of this article, namely (1) What is the meaning of intellectual intelligence?, (2) What are the factors that influence the development of intellectual intelligence in children? early childhood? and (3) What efforts can be made to optimally develop intellectual intelligence in early childhood?

2. Search

The databases used in this search are: Google Scholar, Academia, Sage Journal Online and Mendeley, using keywords that match the research topic.

3. Data Extraction

The data was extracted by inserting it into an excel worksheet in order to obtain an overview of the article. The extracted data can be seen in Table 1. Table 1 describes the author, year, country, destination, method and main findings.

4. Data analysis

The selected article is read several times to get an overview of the content. After that, reading the articles focused on the results and findings obtained from each article.

FINDINGS AND DISCUSSIONS

1. Findings

The results of the literature review that the author has done show that there are 5 articles with a time span of 2010-2021 which have been identified as having a correlation with the topics discussed in this article. The majority of the literature reviewed by the author is literature that discusses the notion of intellectual intelligence according to experts, the factors that influence the development of intellectual intelligence in early childhood and what efforts can be made by parents and teachers to optimize the development of intellectual intelligence during childhood. early childhood.

Table 1
Literature Review

Author, publication year, country	Objective(s)	Methods	Journal	Key Findings
Fazrin, I., Saputro, H., & Chusnataya's, A. (2017). Indonesia.	This study aims to identify whether there is a correlation between IQ with stimulation carried out when individual is	Questionnaires and analyzed using the Spearman test.	Strada Scientific Journal of Health	There is a correlation between IQ and stimulation of early childhood education. Family should act as a party that can fulfil needs basic to children

	in childhood early age.			As give love Dear and provide education that will have a good impact on the development of intelligence intellectual the child.
Sari, PN (2010). Indonesia.	The purpose of this study is to demonstrate the relationship between status nutrition with level intellectual intelligence in children age early reviewed from the socio-economic status of the parents and the education level of the mother.	Quantitative.	UNS Repository	Nutritional status has a relationship with the level of intellectual intelligence (IQ) in early childhood, as well as being a very influential factor on the IQ level of children. As well as level mother's education, IQ level has a relationship with level education Mother. Whereas, status socio-economic has no relationship with IQ levels in early childhood.
Sumy Dwi Antono, Finta Isti Kundarti, T. A. Y. (2014). Indonesia.	This article was written with aim to determine the effect of giving breast milk predominant and type pattern foster against level intelligence	Observational analytics	Journal Health Sciences.	of Both breastfeeding and the type of parenting affect level of intellectual intelligence (IQ) in children aged 3-6 years. However, between these two variables, the type of parenting is a factor which most

	intellectual property (IQ) in children aged 3-6 year in PAUD LoveMother of Mojoroto District City Kediri.			affect the level of intelligence (IQ) in children aged 3-6 years.
Nurhayati, I. (2012). Indonesia.	I. The aim of this study is to find out how much big traditional role play for children age earlyaged 4-6 years in PAUD Geger Sunten. Beside that, studies his explain the driving factors and inhibiting factors when introducing various kinds of traditional games to children eranow.	Descriptive, observation, interview, question naireand documentation study.	Journal of EMPOWER MENT	Traditional games can be used as learning media for children and have a role that is quite influential on the physical, emotional and intelligence development of children.
Palupi, IDR (2020). Indonesia.	Study this aims to determine the role mediasocial to development child intelligence	Documentation study.	Journal of Non-Formal Education	Youtube is wrongone social media that can be used in optimizing cognitive development in child age early. With Youtube

early age 0-8 year, goodemotional intelligence, intellectual intelligence and spiritual intelligence.

or other social media, parents and teachers can use Youtube as a learning medium.

DISCUSSIONS

Intellectual intelligence, commonly known as intelligence, is an individual's cognitive ability to adapt effectively to a complex and dynamic environment. Intellectual intelligence is the ability of individuals to work abstractly with ideas, patterns, images, symbols and theoretical concepts (Fithri & Setiawan, 2017) (Putri, 2016). Wechsler argues that intelligence is the ability of individuals to act and behave by setting goals, thinking rationally so that they can adapt to the surrounding environment well. Meanwhile, according to Alfred Binet who is the inventor of intelligence measurement (Syarif, 2019), he explained that intelligence consists of 3 things, namely: (1) the ability to control the direction of actions and thoughts.

In one study, it was explained how to optimally develop intellectual intelligence in early childhood, namely by being given stimulation to babies, such as inviting them to chat, increasing interactions with babies and also listening to regular rhythms or tones to babies such as classical music (Za' im, 2016). In addition to classical music, murottal verses of the holy al-quran can also be a good stimulus for babies, it was proven in a study of premature babies that after babies were heard murottal verses of the Koran regularly, babies experienced weight gain, which means physical Babies such as weight, body length, head (brain) growth have increased and further improve the baby's intellectual intelligence (Ulfah & Sari, 2019) there is a significant difference between babies who are not heard murottal with babies who are listened to murottal regularly with a vlue value ($0.023 < 0.05$, which means that H_0 is rejected and it means that there is an effect of giving murottal verses of the Koran to the baby's physical growth. In addition to parents, the school also plays an important role in providing a stimulus for early childhood education to stimulate children's intellectual intelligence. In a research result using the Spearman test, it is stated that there is a significant relationship between the level of intellectual intelligence of children and the stimulus for early childhood education. The results of the calculation, it is known that the significance value of p value for the family stimulation variable = 0.000, then for the early

childhood education stimulus variable = 0.000 then H₀ is rejected and H₁ is accepted, it means that there is a relationship between early childhood education stimulation and the intelligence quotient he has (Fazrin et al., 2017).

In addition, it was also explained that the fulfillment of nutrition for children is one of the factors that can affect a child's IQ score, according to a study that children's nutritional status is a strong factor that affects intellectual intelligence in children. Children with poor nutritional status had a significantly lower IQ score of 13 points, while children with good nutritional status had a statistically higher IQ score of 10 points. This means that it has become the duty of parents as the main party to provide balanced nutrition for children. Parents need to provide nutritious food that is balanced and also proportional to the activities of children.

In early childhood, play activities are aspects that cannot be separated from children (Christianti, 2007), playing is part of their world. So therefore, Children must be physically strong to balance their playing activities by fulfilling balanced nutrition. One of the nutritional fulfillment that can be done by parents is breastfeeding, Anderson's research in 1999 stated that babies who were given predominantly breast milk compared to predominant formula had higher IQ test results (Sumy Dwi Antono, Finta Isti Kundarti, 2014). There have been many studies that say that breast milk contains nutrients that are very suitable in portions that are right for babies (Intani et al., 2019).

Breast milk contains iron which can be useful for the formation of hemoglobin in red blood cells, this affects the fulfillment of oxygen needed by babies (Ernawati et al., 2019). Breast milk also contains colostrum which is rich in antibodies One of the nutritional fulfillment that parents can do is breastfeeding, Anderson's research in 1999 stated that babies who were given predominantly breast milk compared to predominantly formula had higher IQ test results (Sumy Dwi Antono, Finta Isti Kundarti, 2014). There have been many studies that say that breast milk contains nutrients that are very suitable in portions that are right for babies (Intani et al., 2019). Breast milk contains iron which can be useful for the formation of hemoglobin in red blood cells, this affects the fulfillment of oxygen needed by babies (Ernawati et al., 2019). Breast milk also contains colostrum which is rich in antibodies.

One of the nutritional fulfillment that can be done by parents is breastfeeding, Anderson's research in 1999 stated that babies who were given predominantly breast milk compared to predominant formula had higher IQ test results (Sumy Dwi Antono, Finta Isti Kundarti, 2014). There have been many studies that say that breast milk contains nutrients that are very suitable in portions that are right for babies (Intani et al., 2019). Breast milk contains iron which can be useful for the formation of hemoglobin in red blood cells, this affects the fulfillment of oxygen needed by babies (Ernawati et al., 2019). Breast milk also contains colostrum which is rich in antibodies Anderson's research in

Anderson's research in 1999 stated that infants who were breastfed predominantly compared to predominantly formula had higher IQ test scores (Sumy Dwi Antono, Finta Isti Kundarti, 2014). There have been many studies that say that breast milk contains nutrients that are very suitable in portions that are right for babies (Intani et al., 2019). Breast milk contains iron which can be useful for the formation of hemoglobin in red blood cells, this affects the fulfillment of oxygen needed by babies (Ernawati et al., 2019). Breast milk also contains colostrum which is rich in antibodies Anderson's research in 1999 stated that infants who were breastfed predominantly compared to predominantly formula had higher IQ test scores (Sumy Dwi Antono, Finta Isti Kundarti, 2014).

There have been many studies that say that breast milk contains nutrients that are very suitable in portions that are right for babies (Intani et al., 2019). Breast milk contains iron which can be useful for the formation of hemoglobin in red blood cells, this affects the fulfillment of oxygen needed by babies (Ernawati et al., 2019). Breast milk also contains colostrum which is rich in antibodies There have been many studies that say that breast milk contains nutrients that are very suitable in portions that are right for babies (Intani et al., 2019). Breast milk contains iron which can be useful for the formation of hemoglobin in red blood cells, this affects the fulfillment of oxygen needed by babies (Ernawati et al., 2019). Breast milk also contains colostrum which is rich in antibodies There have been many studies that say that breast milk contains nutrients that are very suitable in portions that are right for babies (Intani et al., 2019). Breast milk contains iron which can be useful for the formation of hemoglobin in red blood cells, this affects the fulfillment of oxygen needed by babies (Ernawati et al., 2019). Breast milk also contains colostrum which is rich in antibodies useful against the baby's immune system and plays an important role in killing germs, bacteria and viruses that are not good (Fitri, Dianatul, 2020).

In addition to parents, the school can also help improve children's nutrition with a nutrition service program at school, namely PMT (Supplementary Food Provision) (Yulia, 2017) so that it can help increase children's intellectual intelligence and support learning outcomes. The school can also implement a good learning system for the development of children's intellectual intelligence such as implementing traditional games in the classroom. Traditional games can stimulate children's potential both physically and non-physically. This means that traditional games are one of the activities that can support children's intellectual intelligence, with simple media, children are required to be creative and solutive (Nurhayati, 2012). In addition to traditional games, the school can implement a social media-based learning process via Youtube, although many say that the use of social media is not highly recommended for children, but if accompanied by parents and teachers, children can use social media as a learning tool (Palupi, 2020). Youtube provides educational shows that can shape children's characters and provide

interesting games that can stimulate the child's brain (Yusi Kamhar & Lestari, 2019).

CONCLUSION AND RECOMMENDATION

Intellectual intelligence is one type of human intelligence that is closely related to the cognitive abilities of the brain, this type of intelligence can be identified by looking at the individual's ability to work with numbers, theoretical concepts, patterns and symbols. In early childhood, there are several factors that influence the development of children's intellectual intelligence such as breastfeeding, parenting patterns, nutritional status and stimulus from educational institutions. Judging from these factors, there are several efforts that can be made to optimize the development of children's intellectual intelligence, namely applying traditional game-based learning media and social media, fulfilling nutrition with breastfeeding or PMT and stimuli given by parents since the child was a baby.

ACKNOWLEDGEMENTS

The author would like to thank all parties involved in the creation of this article. The author realizes that there are still many shortcomings in this article. Therefore, the author really expects criticism and suggestions from readers.

REFERENCES

- Chapnick, A. (2008). The golden age. *International Journal*, 64(1), 205–221. <https://doi.org/10.1177/002070200906400118>
- Christianti, OM (2007). *Children and Play*.
- Ernawati, D., Ismarwati, I., & Hutapea, HP (2019). Analysis of FE Content in Breast Milk (ASI) in Breastfeeding Mothers. *Journal of Nurses and Midwifery*, 6(1), 051–055. <https://doi.org/10.26699/jnk.v6i1.art.p051-055>
- Fazrin, I., Saputro, H., & Chusnatayaini, A. (2017). Intelligence Quotient in Preschool Age Children in terms of Stimulation of Early Childhood Education. *Strada Scientific Journal of Health*, 6(2), 53–58. <https://doi.org/10.30994/sjik.v6i2.9>
- Fithri, DL, & Setiawan, DA (2017). Analysis and Design of Educational Games as Learning Motivation for Early Childhood. *Symmetrical: Journal of Mechanical Engineering, Electrical and Computer Science*, 8(1), 225–230. <https://doi.org/10.24176/simet.v8i1.959>
- Fitri, Dianatul, DS (2020). Relationship between Exclusive Breastfeeding and the Frequency of Illness among Infants in West Surabaya. *Amerta Nutrition*, 30–35(July), 103–108. <https://doi.org/10.20473/amnt>
- Intani, TM, Syafrita, Y., & Chundrayetti, E. (2019). The Relationship of Exclusive Breastfeeding and Psychosocial Stimulation with the

- Development of Infants Aged 6-12 Months. *Andalas Health Journal*, 8(1S), 7. <https://doi.org/10.25077/jka.v8i1s.920>
- Khatimah, H., Maddeppungeng, M., & Aminuddin. (2020). Zinc Supplement on the Growth of Infants Age 6-9 Months. *Hasanuddin Journal of Midwifery*, 2(1), 1–7.
- Trouble, LB (2017). Revitalization of Supplementary Feeding and Integration of Local Wisdom-Based Nutrition Education in Schools as an Effort to Improve Nutrition for School-Age Children. *Educational, Nutrition, And Culinary Media*, 6(1), 18–33.
- Nurhayati, I. (2012). The role of traditional games in early childhood learning. *EMPOWERMENT Journal*, 1(2252), 39–48.
- Palupi, IDR (2020). The Effect of Social Media on Early Childhood Intelligence Development. *Informal Education*, 127–134.
- Putri, YS (2016). The Influence of Intellectual Intelligence, Emotional Intelligence, and Work Environment on Employee Performance Pt. Pln Persero Klaten Area. *Journal of Organizational Management Studies*, 13(1), 88. <https://doi.org/10.14710/jsmo.v13i1.13416>
- Sumy Dwi Antono, Finta Isti Kundarti, TAY (2014). The Effect of Predominant Breastfeeding and Type of Parenting on the Level of Intelligence (IQ) in Children Aged 3-6 Years at Early Childhood Education Motherhood Mojoroto District, Kediri City. *Journal of Health Sciences*, 3(1), 10–17.
- Sharif, F. (2019). Interdisciplinary Study of Intellectual Intelligence Concepts. *Fikrah: Journal of Islamic Education*, 3(1), 35–54.
- Ulfah, FR, & Sari, FR (2019). Effects of Murottal Al-Qur'an Therapy on Weight Gaining for Premature Babies (Experimental Study on Premature Babies) at dr. Chasbullah Abdulmadjid Bekasi City 2018. *Journal of Health Bhakti Husada*, 5(1), 25–30.
- Yusi Kamhar, M., & Lestari, E. (2019). Utilizing Youtube Social Media as Indonesian Language Learning Media in Higher Education. *Intelligence: Journal of Educational Sciences*, 1(2), 1–7. <https://doi.org/10.33366/ilg.v1i2.1356>
- Za'im, M. (2016). Children's Education in Intelligence Development IQ, EQ and SQ. *Muallimuna*, 2(1), 11–20.