Impact of Learning From Home: Cognitive Development of Early Childhood Education Student in Pandemic Covid – 19

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Abstract

The purpose of this research was to determine how the covid-19 epidemic affected early childhood cognitive development. Principals, instructors, parents, and students served as informants in this study. The data collection techniques used in this study were inquiry in interview which were carried out to find out several things related to the impact of Covid-19 on students' cognitive development. The descriptive qualitative method was employed to analyze the data. The findings revealed that the cognitive development students during online learning during the Covid-19 pandemic, fell into the capable and quite capable categories in terms of problem-solving skills, logical thinking skills, and symbolic thinking skills. students' cognitive development is achieved because teachers make every effort to give learning materials or tasks that encourage students' cognitive development. The presence of certain parents who are less supportive or do not participate in the online learning system has another impact on children's cognitive development. Students do not do the assignments given by the teacher because there is no guidance due to busy parents so that there are differences in cognitive development between one student and another.

Keywords: *cognitive development; early childhood education student; learning from home*

Abstrak

Tujuan dari penelitian ini adalah untuk mengetahui bagaimana wabah covid-19 mempengaruhi perkembangan kognitif anak usia dini. Kepala sekolah, pengajar, orang tua, dan siswa menjadi informan dalam penelitian ini. Teknik pengumpulan data yang digunakan dalam penelitian ini adalah inkuiri dalam wawancara yang dilakukan untuk mengetahui beberapa hal terkait dampak Covid-19 terhadap perkembangan kognitif siswa. Analisis data menggunakan metode deskriptif kualitatif. Hasil temuan mengungkapkan bahwa perkembangan kognitif anak termasuk dalam kategori mampu dan cukup mampu dalam hal keterampilan pemecahan masalah, keterampilan berpikir logis. , dan keterampilan berpikir simbolik. Perkembangan kognitif siswa tercapai karena guru berupaya semaksimal mungkin untuk memberikan materi pembelajaran atau tugas yang mendorong perkembangan kognitif siswa. Kehadiran orang tua tertentu yang kurang mendukung atau tidak berpartisipasi dalam sistem pembelajaran online berdampak lain pada perkembangan kognitif anak. Siswa tidak mengerjakan tugas yang diberikan oleh guru karena tidak adanya bimbingan karena kesibukan orang tua sehingga terjadi perbedaan perkembangan kognitif antara siswa yang satu dengan yang lainnya.

Kata kunci: *perkembangan kognitif; siswa paud; learning from home*

Introduction

Children are unique individuals, where they have different needs according to their age stages. Early infancy is a prime time for a child's growth and acquisition of the educational process. This time period is crucial for a youngster to notice different environmental facts as indicators of his personality, psychomotor development, cognitive abilities, and social development. (Yousefzadeh et al., 2019). According to the study's findings, children's intellect reaches its peak at roughly age 18, with about 50% of adult intelligence occurring at age 4, 80% at age 8, and the remaining 20% occurring at age 4..

According to Law (UU) No. 20 of 2003 concerning the National Education System Article 1 point 14 states that Early Childhood Education is a coaching effort aimed at children from birth to the age of six years which is carried out through the provision of educational stimuli. to assist physical and spiritual growth and development so that children are prepared to enter further education. Kindergarten education aims to help students develop various potentials, both psychological and physical, which include moral and religious values, social, emotional, independence, cognitive, language, physical motoric, and art to be ready to enter elementary school education (Yulianti & Sutarto, 2019).

Early Childhood Education has the main function of developing all aspects of child development, including cognitive, language, physical (gross and fine motor), social, emotional development (Nagai, 2019). The condition of good growth and development of children will affect the quality of humans in the future. Research on child development and educational outcomes demonstrates the long-term and short-term benefits of early childhood education (varpanen, 2021). The short-term benefit of early childhood education is an increase in the intelligence aspect of the child, while the long-term benefit is an increase in school completion rates.

The learning process in early childhood education institutions is generally done face-to-face in the classroom(Miranda & da Costa Lins, 2021). This is because in the early childhood learning process they still need direct teacher guidance, because the teacher is the executor as well as the guide for the learning process in the classroom(Mooney Simmie & Murphy, 2021). In addition, Teachers can more easily instruct kids directly by engaging in direct learning in the classroom. directly tied to the many educational activities being conducted, making it simpler for kids to comprehend instructor instructions, which in turn helps parts of kids' development develop more optimally.

In addition to providing convenience in the implementation of the learning process, learning that is carried out directly in the classroom has been proven to have various positive benefits on the achievement of children's development, one of which is the cognitive aspect. This is because children who learn directly in the classroom have more opportunities to choose various activities, which can then stimulate an increase in the achievement of children's cognitive development(van der Veen et al., 2021). Therefore, in carrying out face-to-face learning processes directly in schools, teachers must implement it as optimally as possible, so that the learning process can be carried out properly and at the same time can optimize aspects of child development (Megalonidou, 2020).

This research has never been carried out by other researchers, but almost similar previous research can be used as a reference or basis for research to be carried out by the author, the following are previous studies:

This study set out to ascertain the impact of YouTube social media on the growth of early childhood intelligence in children between the ages of 0 and 8. Researchers can identify the drawbacks, benefits, and parental involvement in the usage of YouTube videos as a tool for supporting parents and stimulating children's development. Through the triangulation of data sources, a descriptive qualitative research approach was employed to conduct a literature review. This information was gathered as a consequence of reading articles and journals about how social media affects young children's cognitive development. These findings suggest that

exposing young children to stimulating YouTube videos can enhance their cognitive, emotional, spiritual, and social development. (Fridani, 2018).

The goal of this study was to examine the issues with cognitive development that occurred in Raisa Kindergarten students between the ages of 4-6. Based on the research's findings, it can be said that the majority of the 39 percent of children aged 4-6 years have a lot of problems with cognitive development, followed by 37 percent of kids who are on a lot of criteria, and only 17 percent of kids who have only a few issues. The other 7 percent of kids did not have issues. (Zulkarnaini & Adriany, 2021).

In this study, early childhood development in kindergarten students enrolled in online courses during the Covid-19 pandemic was evaluated. This study employs a quantitative descriptive methodology and questionnaire-based data collection methodologies. In this study, 46 Surakarta kindergarten teachers served as the participants. In order to conduct this study, questionnaires were distributed via Google Form, and the links were subsequently shared with Surakarta's kindergarten instructors via WhatsApp groups. The findings of this study offer the most recent explanation of how the online learning environment affects kindergarten students' success of early childhood development. (Gayatri, 2020)

The online learning system in PAUD will continue to be used in accordance with the joint decision made by the Ministries of Education and Culture, Religion, Health, and Home Affairs of the Republic of Indonesia on June 15, 2020 regarding the implementation guidelines for the new school year during the Covid-19 pandemic. (Khiami & Dashash, 2022). For early childhood education institutions located in green zone areas that already have the readiness of education units according to the health protocol of the ministry of health, they can carry out face-to-face learning as early as November 2020. This implementation is carried out in stages, starting with a two-month transition period, if the results show If it is safe, then it can be continued with new habits which can start as early as January 2021. This is one of the policies carried out by the government of the Republic of Indonesia to prevent the increase in the spread of Covid-19 (Sarnoto et al., 2022). The determination of the learning policy with the online system certainly causes changes in the learning system in early childhood education institutions, whose impact on the achievement of children's development is not yet known. This research is expected to be useful as a form of growth and development of science. This research is expected to be a stimulus for further research so that the assessment process obtains maximum results. It is hoped that the results of this research can be input for the institution in developing the cognitive aspects of early childhood education students during the Covid-19 pandemic.

Methodology

This research is included in the type of qualitative research with a descriptive approach. Qualitative research method is a research approach that reveals certain social situations by describing reality correctly by words based on relevant data collection and analysis techniques(Aspers & Corte, 2019). This type of research is classified as field research, because everything that is explored is sourced from interviews and research that goes directly to the field. In this study, researchers want to provide an overview and explanation of the impact of the COVID-19 pandemic on early childhood cognitive development at PAUD AL IZZAH PURI Mojokerto Regency. This research was conducted in September 2020. The subjects of the research were the principal, teachers, students, and parents at PAUD Al Izzah Puri Mojokerto district. The primary data of this research is in the form of information related to the cognitive development of PAUD Al Izzah Puri Mojokerto district students by submitting interviews to teachers on students' cognitive development. The research instrument in the form of inquiry interview which was made by the researcher by referring to the existing theories (Aspers & Corte, 2021). The inquiry interview that are arranged are formed from aspects and indicators of the implementation of speech therapy and communication skills as

the basis for compiling statement items in accordance with the explanation of the meaning of each of the indicators referred to.

The data collection techniques used in this study were observations, interviews, and documentation which were carried out to find out several things related to the impact of Covid-19 on students' cognitive development(Cristancho et al., 2018). Observations in this study were carried out to find out several things related to the impact of Covid-19 on students' cognitive development. Interviews in this study were conducted through open interviews with schools and parents regarding the impact of Covid-19 on students' cognitive development. documentation is taken of school activities and matters related to students' cognitive development. The data analysis technique is carried out interactively and continues until it is complete so that the data is saturated, the data analysis stage is data reduction, namely primary and secondary data obtained from the field, there are quite a lot of them, it is necessary to choose which ones are important, then summarize, choose things which is data reduction, data presentation, and data conclusion.

Result and Discussion
Cognitive development aspect based on teacher assessment

Aspects of cognitive development are closely related to the child's ability to think in receiving, processing and understanding something. The characteristics of cognitive abilities of children aged four and five years include the ability to count and touch four or more objects, be aware of some numbers and letters, and put forward a sequence of numbers up to ten(Guez et al., 2021). Based on the results of research observations, it is known that the cognitive development of PAUD group B students is good. The cognitive abilities of PAUD Al Izzah Puri students for problem solving ability indicators are good. This can be seen from the ability of students to recognize the names of the objects around them and their functions, students are able to use and be creative with surrounding objects as game objects, students are able to distinguish between large and small quantities, and other sub indicators students are able to well. However, for indicators of logical thinking, most students are quite capable in this aspect. This can be seen from the students' ability to group objects based on function, recognize causal phenomena and the ability to recognize AB-AB and ABC-ABC patterns. Based on the results of the observations above, it can be seen that the cognitive development of PAUD Al Izzah Puri students even though they are currently running an online learning process or online system, students' abilities can still be improved.

This is confirmed by the following interview with the Principal of PAUD Al Izzah Puri. " although currently during the Covid-19 pandemic, children are studying at home, but we teachers continue to monitor children's development online and the material provided also stimulates children's cognitive development." The same statement was also expressed by the PAUD Al Izzah Puri teacher as follows: "The cognitive development of PAUD Al Izzah Puri children so far has been quite good. Although currently during the Covid-19 pandemic, the learning system is online, but we as teachers still prepare materials that can stimulate students' cognitive development." Based on the results of the interview above, it can be seen that the learning system at PAUD Al Izzah Puri during the Covid-19 pandemic was an online system and the cognitive development of PAUD Al Izzah Puri students was good.

Cognitive development can be seen from the child's ability to solve problems for children aged under five. The following are the results of an interview with the Principal of PAUD Al Izzah Puri. "Early childhood development, especially PAUD Zakiah Akbar students have been able to solve the problems they face". The problems referred to in this aspect are the ability of students to know the names of objects around them and their functions, be able to use the objects around them to make game tools, have a strong curiosity and so on related to the child's ability to make sense when children play. The same thing was expressed by another PAUD Al Izzah Puri teacher as follows: "Based on my observations during the online learning process, students' ability to solve problems is good. This can be seen from the students' ability to complete the

material that I provide such as the material to distinguish between large and small amounts, material changes in the morning, afternoon, evening and night and material about the position of children in the family". The cognitive aspect with the indicator of problem solving ability consists of several sub indicators. The following is an example of an indicator of a student's ability to solve problems. Early childhood is a child with a playing period, but sometimes not all parents are able to buy the toys their children need.

The ability to use surrounding objects as games is an indicator of the development of children's cognitive abilities. Based on the assessment, it is known that the ability of the Al Izzah Puri PAUD children in this regard is good. Students are able to be creative with the objects around them in terms of playing. The same statement was also expressed by the PAUD Al Izzah Puri teacher the following: "The children of PAUD Al Izzah Puri are quite creative in terms of playing, they can use bright ideas to use existing objects to be used as game materials". The concept of a lot and a little in number is also an indicator of a child's cognitive development. The following is the result of an interview with one of the PAUD Al Izzah Puri teachers. "Children already know the concept of a little bit" Another teacher also expressed the following interview results: "During the online learning process, we teachers continue to monitor children's development and conceptualize learning materials in accordance with the curriculum and cognitive development of children. The teacher makes questions that direct the concept of a little more". Based on the results of interviews with the Principal and PAUD Al Izzah Puri teachers, it is also known that students' cognitive development from the aspect of logical thinking ability. This can be seen from the following interview excerpts: "Children's logical thinking is someone's awareness of making a word or concept in the thought process. But children have difficulty in understanding their own thoughts so that an ability possessed by a child must be given a stimulus so that this ability can be continued to solve the problems that the child will face next. During the Covid-19 pandemic, teachers continued to stimulate students' logical thinking skills by using learning media. Alhamdulillah, so far, the students' logical thinking development has been good." The same thing was also expressed by other teachers which can be seen from the following interview results: "One aspect of cognitive development that can be developed by early childhood is the ability to think logically in children, for that we need a learning method that can improve logical thinking skills in children. . Based on my assessment as a teacher, the method I use has been able to stimulate this aspect and the development of students' ability to think logically is quite good." Based on the results of the interview above, it can be seen that the logical thinking ability of PAUD Al Izzah Puri students is quite good. This is due to the stimulation of the teacher in an effort to improve these aspects.

In this study, it is also known what things students can do in terms of logical thinking skills. This can be seen from the results of the following interview, "Early students are still very limited in their abilities, at this age their personality is starting to form and they are very sensitive to the actions of the people around them. Cognitive development is indispensable for the development of cognitive abilities. For example grouping, recognizing numbers, recognizing geometric shapes, recognizing sizes, recognizing the concept of space, recognizing the concept of time, recognizing various patterns, and others that can be applied in everyday life. the following interview: "Play is an opportunity for children to explore, conduct research, conduct experiments to gain knowledge. Play also opens up many opportunities for children to be creative, discover and shape and build as they draw, play with water, play with clay or plasticine and play with blocks. During the Covid-19 pandemic, there is enough time for children to explore with their games, children are given the freedom to play at home, but teachers at school continue to supervise and direct children's play during the online process". Based on the results of my assessment, children are able to group objects according to function, color and shape, already know the difference between morning and evening and night." based on function, shape, color and size. In addition, students are able to recognize the symptoms of cause and effect and patterns AB-AB and ABC-ABC.

One aspect that needs to be developed in early childhood is the cognitive aspect in the scope of symbolic thinking. This is because the ability to think symbolically can develop a child's mental world. The symbolic thinking ability of PAUD Al Izzah Puri students can be seen from the following interview results: "As is well known, early childhood is an individual figure who is experiencing very rapid growth and development, at this time there needs to be proper stimulation so that children can develop all aspects of their development. optimally including cognitive aspects in logical thinking. And in my opinion, the development of the logical thinking aspect of PAUD Al Izzah Puri students is good". The same thing was also expressed by other teachers which can be seen from the following interview results: "The development of aspects of symbolic thinking skills of PAUD Al Izzah Puri students is good".Aspects of symbolic thinking consist of the ability to count objects from one to ten, recognize the concept of numbers, and recognize the alphabet. The following is the result of the interview related to the symbolic thinking aspect. This can be seen from the students who are able to name the number symbols from 1-10 in sequence, and are able to use number symbols in counting activities. In addition, students are familiar with various kinds of letters - vowels and consonant letters." The same statement was also expressed by the PAUD Al Izzah Puri teacher who stated that: "The aspect of symbolic thinking can be seen from the ability of students to spell the alphabet and can show shapes. alphabetical form, and have been able to count from 1-10 and the forms of numbers".

The Development of Cognitive Aspects of Students Based on Parents' Assessment

In this study, researchers also conducted interviews with the guardians of PAUD Al Izzah Puri students to explore students' cognitive development. Based on the results of the interview, it is known that the cognitive development of students is good. This can be seen from the ability of students in every cognitive aspect of students. "my son's cognitive development is quite good. My child can count 1-10, able to distinguish large and small quantities, already knows the difference between morning and afternoon changes. Despite the Covid-19 pandemic and the online learning system, the material provided by the teacher still refers to the development of the cognitive aspect." Another parent also expressed the following: "Although the learning system is online, the material provided by the teacher always stimulates the development of aspects of cognitive aspects, so that children's cognitive development is not hampered." Based on the results of the interviews above, it can be concluded that the cognitive aspects of children are good.

The results of the interview also show the child's ability to know his position in the family and socially. The following is the result of an interview with the student's guardian. "My son already knows his position as a child and as a younger brother to his older siblings. Every time Soni is asked whose child is Soni, she will answer that it is the child of the father, mother and sister of Farah's sister and Tia's sister. This means that the child already knows his position." The same statement was also expressed by another student's guardian as follows: "Alhamdulillah, my son already knows his position in the family, he knows where his mother and father are, where his grandparents are, where are his brothers". Cognitive ability to know the position in the family is good.

Discussion

It is recognized that some parents of pupils do not employ adequate equipment based on the research's findings. One of the constraints in the adoption of online learning carried out at home is the availability of the infrastructure and supporting tools, such as laptops, computers, cellphones, internet quotas, and other devices. Infrastructure facilities play a critical role in enabling students to execute their learning.

Since students often study in-person in classes, the deployment of online learning is not the best method for delivering learning materials to them. a forum (He et al., 2021). in order for teachers to feel that students' learning has lost its purpose. One of the reasons is that learning does not take place immediately face-to-face; instead, pupils receive assignments, which focus

the learning process more. Due to group learning in a primarily text-based program, combined with the lack of student enthusiasm. The child's visual ability is only stimulated by this.. "Especially after doing online learning, children play more cellphones after learning," said the parents.

According to a previous study, online learners have a tendency to have stronger visual and literacy skills. There are several systems that allow you to transmit text messages, photographs, videos, and other types of data for free, like Google Classroom, Whatsapp, Quipper, and others. However, because some students lack access to suitable infrastructure, using the platform has not been successful.

Online learning is being implemented inconsistently and is frequently teacher-centered. Additionally, there won't be any readers throughout a conversation, and the student's response will be a little bit shorter. One out of every thirty students has a very good understanding of online learning, fifteen out of thirty students have a basic understanding, and the other students have a fair understanding. It will be different if you learn at home because of the connection between control and the learning environment, which has a big impact on students' excitement in a classroom setting. As a result, low motivation results. Infrastructure is also the key component in the efficient implementation of this online learning.

Based on the results of the research, it is also known that sometimes in carrying out the online learning process, the network suddenly becomes sluggish, and the respondent adds that internet quota is a major scourge that plays an important role in the implementation of learning, running out in the middle of the road. The obstacles found were the use of the internet network which required money and the ability of parents to provide online education facilities, lack of learning to behave properly, lack of self-discipline, and the environment when isolated at home. This pandemic has an impact on teachers in the online learning process, because teachers are not free to monitor the overall development of children.

According to the study's findings, it can be concluded that parents' lack of knowledge about their children's development, the presence of children who are rarely guided by their parents, and the difficulty of controlling children remotely all contribute to the learning process rarely being carried out optimally. Respondents who indicated that learning was perceived by students as having less relevance as a result of poor delivery of instructional materials to pupils. Given the number of quotas held by parents and teachers, the teacher's ability to present the material will also be constrained. As a result, learning will take place in groups for the purposes of the application. However, even so, there is no change in the number of portions of the teacher's work in preparing the best learning process for students.

Another conclusion from the deployment of online learning is that the instructor is perplexed and believes the intended response is ambiguous, causing them to question whether they should limit their role or make it more expansive online. Numerous research on the use of online learning have shown that it is more effective in terms of cost and effort. Since the pandemic has made it difficult for their families to make ends meet, respondents claim that not all students come from wealthy backgrounds. Effective online instruction requires the teacher to be creative in their planning. Expanding the teaching methods for online learning is also necessary because they differ significantly from classroom instruction.

The teacher's voice, body language, and facial expressions are the most important factors in indoor learning. However, while on the network, they offer a variety of sharing options, including text, video, pictures, sound, and more. Through order to effectively present the subject in online learning, the teacher must select the appropriate method.

The challenge is coloring the online learning process. Because the network is slow, so that the information or material conveyed takes a long time to be received by parents, or vice versa. This is also a factor from the distance and network limitations in the student's neighborhood. The response from (Fontenelle-Tereshchuk, 2021) noted that occasionally when learning, the material offered did not align with the teacher's objectives. According to the study's findings, it was also noted that, even when collecting assignments, it was challenging to provide

a timetable for the varied justifications offered by students. According to one of the influencing factors, the internet quota is the major challenge to online learning since it prevents a seamless learning experience.

The challenge for teachers in the online learning process is that the assignments given to Parental involvement in the assignment process means that pupils do not complete assignments fully on their own. However, some parents are unable to stay with them at home, so nobody can help with providing the necessary learning facilities for the students. When students are working on assignments, no one can assist with providing student learning facilities because they are not always the ones who complete them or some parents are not at home. (Apriyanti, 2020). Respondent puts forward the limitations of media when the implementation of online learning is carried out, he also adds that there are still students and parents who are not technology literate (Levi et al., 2021).

A study states that activities in teaching are not easy to facilitate (Moorhouse, 2020). However, the combination of congruence and dissonance modes of instruction is seen as a way of supporting learning in technology when face-to-face is not an option. Online learning provides broad benefits, namely it can reach all regions, but other findings state that there are several obstacles faced in several regions.

This research is expected to be useful as a form of growth and development of science. This research is expected to be a stimulus for further research so that the assessment process obtains maximum results. It is hoped that the results of this research can be input for the institution in developing the cognitive aspects of early childhood education students during the Covid-19 pandemic, developing children's cognitive even though it is in the limitations of the learning system. And the teacher's role in improving children's abilities in drawing and coloring can be improved again. Parents should also play a role in increasing children's cognitive intelligence considering the many benefits of children's cognitive.

Conclusion

Pandemic covid-19 students from early childhood education showed improved problem-solving and logical thinking skills during online learning, according to researchers. The students are included in the capable and moderately capable categories. The achievement students is because teachers always try to stimulate students' cognitive development. Another impact of the online learning system on children's cognitive development is the presence of some parents who are less supportive or do not participate in the learning system. The teacher's role and parent in improving children's abilities i cognitive intelligence can be improved again.

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