

Covid-19 Pandemic: Teacher Problems - Early Childhood Learning (PAUD) - The Solution

Rani Darmayanti

University of Muhammadiyah Malang
ranidarmayanti90@webmail.umm.ac.id

Retno Wahyu Arian Sah

University of Muhammadiyah Malang
retno.ariansah@gmail.com

Isnaini Nur Azizah

Institut Agama Islam Ma'arif NU (IAIMNU) Metro Lampung
zezelullaby@gmail.com

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Abstrak Dampak pandemi COVID-19 cukup serius dan terjadi hampir di seluruh belahan dunia, termasuk di bidang pendidikan. Tujuan dari penelitian ini adalah untuk mengetahui apa saja kendala yang dialami guru PAUD YALC Pasuruan dalam proses pembelajaran anak usia dini di masa pandemi Covid 19. Metodologi yang digunakan dalam penelitian ini adalah studi kasus kualitatif. Metode pengumpulan data dalam penelitian ini adalah mengumpulkan informasi dengan menggunakan berbagai prosedur pengumpulan data penelitian kualitatif, yaitu dengan cara wawancara dan observasi. Hasil yang ditemukan adalah 1) pembelajaran pada masa pandemi Covid-19 untuk anak usia dini di PAUD YALC Pasuruan yaitu menggunakan pembelajaran jarak jauh dengan cara guru melakukan video call kepada siswa untuk memberikan kegiatan pembelajaran, 2) orang tua siswa setiap hari senin wajib mengambil media yang telah disiapkan di sekolah untuk membantu pembelajaran pada anak, 3) guru membuat video yang menarik untuk anak melalui aplikasi pendukung kemudian di upload ke media sosial seperti youtube, dan 4) pembelajaran dengan sistem home visit, home visit adalah kegiatan guru berkunjung rumah semua siswa seminggu sekali, kegiatan ini membantu guru dalam melihat perkembangan pada anak termasuk perkembangan motoriknya. Kendala yang ditemukan adalah 1) guru dituntut untuk menguasai teknologi seperti aplikasi pendukung untuk menampilkan video yang menarik dan ditonton oleh anak, 2) penilaian dan evaluasi perkembangan anak yang kurang maksimal dilakukan oleh guru, dan 3) kepemilikan komunikasi pribadi gawai (ponsel) anak, alat milik orang tua yang digunakan oleh orang tua sebagai alat penunjang pekerjaan.

Kata Kunci: Pandemi Covid-19, Pembelajaran Anak Usia Dini, Problematika Guru

Abstract *The impact of the COVID-19 pandemic is quite serious and occurs in almost all parts of the world, including in the education sector. The purpose of this research is to find out what are the obstacles teachers at PAUD YALC Pasuruan have in the early childhood learning process during the Covid 19 pandemic. The methodology used in this research is a qualitative case study. The data collection method in this study was to collect information using various qualitative research data collection procedures, by way of interviews and observation. The results found were 1) learning during the Covid-19 pandemic for early childhood at PAUD YALC Pasuruan, namely using distance learning by means of teachers making video calls to students to provide learning activities, 2) parents of students every Monday must take media that has been prepared at school to help learning in children, 3) the teacher makes interesting videos for children through supporting applications and then uploads them to social media such as YouTube, and 4) learning with a home visit system, home visits are teacher activities visiting the house all students once a week, this activity helps the teacher in seeing developments in children including their motor development. The obstacles found are 1) teachers are required to master technology such as supporting applications to display interesting videos and be watched by children, 2) assessment and evaluation of child development that are not optimally carried*



out by teachers, and 3) personal ownership of communication devices (cellphones) child, the tool belongs to the parent which is used by the parents as a work support tool.

Keywords: *Covid-19 Pandemi, Early Childhood Learning, Teacher Problems*

Introduction

It has been a year since all parts of the world were shocked by the outbreak of a virus known as corona or covid 19. As a result of the outbreak, all governments around the world have implemented lockdowns or quarantines (Dani & Mediantara, 2020; Kim, 2020; Qomariyah & Darmayanti, 2023). Quarantine according to the Law of the Republic of Indonesia Number 6 of 2018 concerning health quarantine is a restriction on activities or separating a person exposed to infectious diseases as stipulated in the laws and regulations even though they have not shown any symptoms to prevent the possibility of spreading to people around.

The impact of the COVID-19 pandemic is quite serious and occurs in almost all parts of the world (Kalleney, 2020; Zamhari & Rahmayanti, 2021). From economic factors, health, security to education are also affected by this pandemic. All levels of education stopped face-to-face activities and replaced with an online system (online) (Aikina & Bolsunovskaya, 2020; Darmayanti et al., 2022). As a result, there are many changes experienced from educators to students. One of the things that occurs in this change is that it has an impact on adjustments in teaching / learning, disruption of motivation to achieve, and learning interactions are not optimal (Arif & Darmayanti, 2023; Regassa et al., 2022; Widiastuti et al., 2021). Meanwhile, in early childhood learning, learning activities are conducive to children, namely with play activities, a pleasant interaction atmosphere, encouraging children to try new things, unlimited dialogue conversations occur, and children can express themselves.

Effective learning will equip children with fun and meaningful experiences that will settle in the child's mind throughout time because good learning is learning that provides children with challenging, creative, and constructive experiences whose ultimate goal is to help children to be able to solve problems in the future (Damayanti et al., 2023; Han et al., 2020; Inganah et al., 2023; Syaifuddin et al., 2022). This conducive learning has become difficult to achieve during this pandemic, because teachers have experienced many obstacles to create changes in teaching.

The teaching and learning process is inseparable from the strategies, methods, and media used by teachers (Hawkinson et al., 2017; Weiland & Morris, 2022). Inseparable from pandemic conditions like this, educators must be more creatively innovative with the methods and media used (Khoiriyah et al., 2022; Sah RWA et al., 2022). Unlike the things with learning activities in early childhood, quality learning will be difficult to achieve because in early childhood education teachers are required to be closer psychologically as well as physically because learning in early childhood is carried out more non-formally, learning is carried out through the persistence of play activities while learning and does not have a target of achieving academic achievement such as the school level above, achievements in PAUD are optimizing aspects of development in children (Usmiyatun & Sah, 2021).

It is indisputable that the role of the teacher in learning plays a very important role and is even the key to achieving quality and effective learning (Sah et al., 2022). Related



to this effective teaching behavior is to convey learning with a child-centered, there is an educational interaction between teachers and students, creating a democratic atmosphere, there are variations in teaching methods, professional teachers, and useful teaching materials according to child development, a safe and comfortable environment and supported by means because the nature of effective learning is to emphasize students actively (Hasanah, Syaifuddin, et al., 2022; Ou et al., 2019).

In realizing effective learning, the main character needed is a teacher, where the teacher who uses maximum teaching time, delivers material with varied methods, monitors programs and student progress, designs learning, is willing to repeat the material when the child does not understand, sets learning targets for each child (Franchett et al., 2019; Humaidi et al., 2022; Kim, 2020).

The impact of Covid-19 in addition to the learning situation is less effective where in creating children's activities do not occur as a whole between educators and students are hindered by distance, if teachers interact online with children can not establish optimal learning communication, it is different when teachers and children face-to-face are face-to-face. Likewise, what is experienced in PAUD YALC Pasuruan, with face-to-face activities directly opens a clearer, more focused mind, sees the child's development directly, a more stable emotional state so that the child will become a healthy person both physically and psychologically and even spiritually. However, in this pandemic, teachers at PAUD YALC Pasuruan must be familiar with, and able to use technology, especially applications for the online learning process.

During the Covid-19 pandemic, PAUD YALC Pasuruan carried out learning in early childhood at the beginning of the pandemic, namely an online system, in that system teachers made video calls to students to participate in learning activities, in addition to that parents of students once a week every Monday took media that had been prepared at school to help learning in children. But at that activity the children gathered only 4 to 5 out of 15 students. One month passed, the teacher felt that the child's achievements were less visible and felt that the child was tired of monotonous learning, the teacher also tried to make interesting videos for the child through applications that support it and then uploaded it to social media youtube. Three months running with an online system, then teachers and parents have an agreement for learning with the home visit system, home visit is an activity for teachers to visit the homes of all students once a week, these activities help teachers in seeing the development in children including motor development. Home Visit is carried out almost one semester. Some parents of students saw the child's development during the home visit activities that were carried out and then asked the teacher to do face-to-face schooling. The teacher conducts a meeting with other teachers, then with all parents of the students, with an agreement on the results carried out during the meeting the results are that the teacher approves face-to-face activities that take place and face-to-face activities last one week twice for the rest, namely continuing to use the online / online system. The face-to-face agreement must comply with applicable health protocols, namely washing hands, wearing masks, maintaining distance. Then for children who have just traveled outside the city, experiencing illness (cold, heat, cough) are prohibited from participating in face-to-face activities at school. Face-to-face activities must also be signed by the student's parents in a letter containing a stamp.



Face-to-face activities are very helpful for teachers in assessing development in children, because in early childhood learning it is with conducive learning activities, active learning, play, and equipping children with pleasant experiences (Lutfi & Khusna, 2021; Nurhadiani & Pratolo, 2020; Vidyastuti et al., 2022). Because in these activities the teacher can directly see how the child's development takes place from the aspects of language, moral religious values, motor, cognitive, social emotions, and art. Because in the assessment of children of age, it is not an assessment of their academics but an assessment of how the child's development is already visible (Ndeot et al., 2022; Sugian et al., 2021; Sugianto et al., 2022). In online learning, teachers experience problems in early childhood learning that where in online learning teachers and parents must have maximum cooperation with the learning activities carried out, parents must understand the child that the activities carried out must be ready to be ready to need assistance to children, as has been conveyed by the teacher to early childhood online / online learning technicians. In face-to-face learning activities, educators and students both generate motivation for higher learning, reducing the risk of anxiety and stress that many experience during online learning.

Method

The methodology used in this study is a qualitative case study. A case study is a study in which researchers carefully examine a program, event, activity, and research to collect complete information using various data collection procedures based on a predetermined time (Keith, 2017).

This research was conducted at PAUD YALC Pasuruan, East Java Province from February 21, 2021 to April 28, 2021, with the data sources used are primary data and secondary data. The primary data in the study was the result of observations and interviews with principals and teachers at PAUD YALC Pasuruan, while the secondary data used in this study used several references such as books, journals, and other records to support the primary data.

To obtain data and information in the study, the researcher uses data collection techniques in the form of observation/ observation, interviews and documentation. The collection of such data requires tools as instruments. Tools used to collect data either using interviews or observations, and to write down or describe data information obtained from sources.

The following is a table of interview instruments regarding teacher problems in the early childhood learning process during the Covid-19 pandemic.

Table 1. Interview instrument format

No	Indicators Question	Item Number	Answers
1.	Parents	1,2,3,5,6	
2.	Planning and Learning	4,10,11,12, 13,15	
3.	Technology and Network	7,8,16,18,19,20	
4.	Motivation	9	
5.	assessment	14	

(Chan et al., 2021)



Therefore, the data analysis carried out in this study is the process of collecting data and compiling well the data obtained through observation, interviews, and documentation as well as various other materials related to problems in the early childhood learning process during the Covid-19 pandemic.

Results and Discussion

a. Learning System Used During the Covid-19 Pandemic at PAUD YALC Pasuruan

During the Covid-19 pandemic, PAUD YALC Pasuruan carried out learning in early childhood at the beginning of the pandemic, namely an online system by following the government's recommendations not to hold crowded activities or teachers working from home or WFH (Work From Home), in the WFH (Work From Home) system teachers make video calls to students to provide learning activities, in addition, parents of students once a week, namely every Monday, are required to take the media that has been prepared at school to help learning for children. The result of this activity only lasted actively for one month and experienced a decrease in enthusiasm in the following month (Siswanto et al., 2018). The impact seen at this time is that parents rarely report children's learning outcomes either directly or indirectly, resulting in children's learning development not looking optimal.

Therefore, teachers at PAUD YALC Pasuruan are uploaded to social media such as YouTube. Some learning videos from Youtube can be seen with the link address that has been made. The creation of this Youtube media requires a learning process for PAUD YALC Pasuruan teachers for 3 months to be ready to be watched by children and parents.

In addition to online learning, PAUD YALC Pasuruan teachers and parents have an agreement for learning with the home visit system, home visit is an activity for teachers to visit the homes of all students once a week, these activities help teachers in seeing the development in children including their motor development, and are very helpful for parents (D'Amico et al., 2019; Zweig et al., 2015). Parents of students argue that the online learning system for early childhood is difficult for parents and children with the most dominant reason being that the availability of special time to study with children is difficult to create because it is influenced by environmental habits or influences. Home Visit is carried out almost one semester. Some parents see their children's development in home visits as more visible than online learning and scheduled assignments.

From the results of home visit activities, it caused the desire of parents to conduct face-to-face learning on a scheduled basis, arguing that the Covid-19 pandemic has begun to decrease with the state of the Yellow zone in the Rangkasbitung area in January 2021. In January 2021, parents wanted face-to-face learning while still paying attention to health protocols with a certain agreed schedule. The agreement and schedule are ultimately made with the provision that face-to-face activities can only be carried out in 2 days in 1 week, and other days are assisted by using online learners.

PAUD YALC Pasuruan enforces face-to-face learning regulations by means of all students, teachers and parents who take students are required to wear masks, must wash their hands when entering the school area, student seating chairs are arranged with a



distance according to covid-19 health protocols, and parents who wait are prohibited from waiting in front of the class or close to the child's place of study, They have to wait in the field or open space outside the classroom. Meanwhile, children who have just traveled out of town or experience illness (cold, heat, cough) are prohibited from participating in face-to-face activities at school and are encouraged to do treatment until they are healthy/normal (Hasanah, In'am, et al., 2022; Santika et al., 2020).

In order not to cause misunderstandings in using the authority of face-to-face learning, the school and parents are required to follow the agreement determined by the school, namely that every face-to-face meeting is over, parents of students are required to fill in the minutes signed with a stamp. Face-to-face learning lasts for an even semester.

b. Positive Parenting at Home

From several methods and media used in early childhood learning at PAUD YALC Pasuruan, face-to-face activities are very helpful for teachers in assessing development in children, because this learning looks more conducive, active learning through play activities, and equips children with pleasant experiences. So that in this activity the teacher can directly see how the child's development takes place from the aspects of language, moral religious values, motor, cognitive, social emotions, and art. Because in the assessment of children of age, it is not an assessment of their academics but an assessment of how the child's development is already visible. In online learning, teachers experience obstacles in early childhood learning that where in online learning teachers and parents must have maximum cooperation with the learning activities carried out, parents must understand children that online learning must be carried out with maximum assistance to children's learning, as has been conveyed by the teacher to early childhood online learning technicians. Positive parenting is mandatory for parents in the process of early childhood learning.

c. Problems of Teachers at PAUD YALC Pasuruan in Learning during the Covid 19 Pandemic

The problems faced by PAUD YALC Pasuruan teachers in learning during this pandemic are very varied, because teachers are facing distance learning conditions for the first time, especially for early childhood, which in essence for early childhood learning is very difficult to do. Teachers must change the concept of previous learning methods, teachers are required to master technology such as supporting applications for the display of interesting videos and watched by children. Therefore the adjustment of conditions takes quite a long time. About one to two months teachers at PAUD YALC Pasuruan learn using an easy distance system, get online learning education to self-taught.

In addition to technology, the teacher's obstacle is in assessing the development of children, because in the work on the tasks given to children once a week, it seems that in working on the media given, it is not the result of the child himself, but is fully assisted by his parents or brother. Where the teacher can tell which is the result of the child's own hands or not. Parents have not been able to master the concept of learning



even though previously they have been given an explanation of how the concept of learning is carried out, because where the assessment of early childhood is not from an academic point of view but from the development of the process in children. The ownership of cellphones is also a problem, that the cellphones used in early childhood learning belong to their parents, in PAUD YALC Pasuruan no child has their own cellphone. This results in children participating in learning not conducive, such as being late for learning, being late for assignments or even some children not even participating in online learning because cellphones are simultaneously used by parents to work.

d. How to Assess Student Learning Outcomes at PAUD YALC Pasuruan

The assessment during the pandemic of student learning is quite different from before. Usually teachers conduct assessments by directly observing children's development by interacting with children, during learning activities, and when children play with their peers, from several activities and student interactions at school, teachers can easily assess the results of child development directly, because at the level of early childhood education the resulting assessment is by assessing child development and not just academic assessment.

During the pandemic, the assessment of children's learning outcomes at PAUD YALC Pasuruan involved parents, because in learning with an online system, parents play an important role in learning in schools. At this time, parents will help teachers in observing the child's growth and development process through children's activities at home such as what the child says, children's expressions, movements and children's works.

In this case, parents record or document in the form of videos or take photos of the child's work and then send it to the teacher through the whatsapp application, after that once a week the teacher evaluates meetings to tell how the child's process in learning, and the child's growth and development. Then the teacher assesses according to the information received. Teachers assess various information related to aspects of development, namely moral religious values, language, physical motor (fine motor and gross motor), social emosional, and art.

Conclulsion

The Learning System at PAUD YALC Pasuruan used in learning during the Covid-19 Pandemic, namely PAUD YALC Pasuruan runs learning in early childhood at the beginning of the pandemic, namely an online system by following the government's recommendations not to hold crowded activities or teachers work as WFH (Work From Home), in the WFH (Work From Home) system teachers make video calls to students to provide learning activities, in addition, parents of students have a schedule on every Monday to visit the school to pick up media that the school has prepared that can be used to help with learning for children at home.

In online learning, teachers experience obstacles in early childhood learning that in online learning teachers and parents must have maximum cooperation with the



learning activities carried out.

Early childhood learning that is still difficult to do results in several aspects, one of which is being constrained by the assessment that must be given by the teacher. Usually teachers conduct assessments by directly observing the child's development by interacting with children, during learning activities, and when children play with their peers. But currently teachers assess early childhood development evaluations based on learning tasks and developmental communication according to information and data submitted or obtained from each student's parents.

References

- Aikina, T. Y., & Bolsunovskaya, L. M. (2020). Moodle-based learning: Motivating and demotivating factors. *International Journal of Emerging Technologies in Learning*, 15(2). <https://doi.org/10.3991/ijet.v15i02.11297>
- Arif, V. R., & Darmayanti, R. (2023). Designing the Development of Canva Application-Based Audio-Visual Teaching Materials on the Material "Point to Point Distance" for High School Students. *JEMS (Journal of Mathematics and Science Education)*, 11(1), 286–299. <https://doi.org/10.25273/jems.v11i1.14862>
- Chan, S. W. Y., Rao, N., Cohrssen, C., & Richards, B. (2021). Predicting child outcomes in Bhutan: Contributions of parenting support and early childhood education programmes. *Children and Youth Services Review*, 126. <https://doi.org/10.1016/j.chilyouth.2021.106051>
- Damayanti, R., Setio, A., & Darmayanti, R. (2023). Pengembangan Asesmen Essay Untuk Mengukur Keterampilan Pemahaman Matematis Siswa SMA Pada Materi Dimensi Tiga. *Uninus Journal of Mathematics Education and Science*, 8(1). <https://doi.org/10.30999/ujmes.v8i1.2402>
- D'Amico, M. M., Algozzine, B., Algozzine, K. M., Correa, V. I., & Muharib, R. (2019). Content-driven Faculty Development in Community College Early Childhood Education Programs. *Community College Journal of Research and Practice*, 43(1). <https://doi.org/10.1080/10668926.2017.1357510>
- Dani, J. A., & Mediantara, Y. (2020). Covid-19 Dan Perubahan Komunikasi Sosial. *Persepsi*, 3(1), 94–102. <https://doi.org/10.30596/persepsi.v3i1.4510>
- Darmayanti, R., Baiduri, B., & Inganah, S. (2022). Moodle-Based Learning Media Development of Flex Model In Improving Mathematical Hard Skills of High School Students. *Aksioma: Jurnal Program Studi Pendidikan Matematika*, 11(4).
- Franchett, E. E., Yousafzai, A. K., Rasheed, M. A., Siyal, S., Reyes, C. R., & Ponguta, L. A. (2019). Experiences of Community Youth Leaders in a Youth-Led Early Childhood Education Program in Rural Pakistan. *Zeitschrift Fur Psychologie / Journal of Psychology*, 227(2). <https://doi.org/10.1027/2151-2604/a000362>
- Han, S., Blank, J., & Berson, I. R. (2020). Revisiting reflective practice in an era of teacher education reform: A self-study of an early childhood teacher education program. In *Journal of Early Childhood Teacher Education* (Vol. 41, Issue 2). <https://doi.org/10.1080/10901027.2019.1632993>
- Hasanah, N., In'am, A., Darmayanti, R., Nurmalitasari, D., Choirudin, & Usmiyatun. (2022). Development Of Al-Qur'an Context Math E-Module On Inverse Function



- Materials Using Book Creator Application. *Aksioma: Jurnal Program Studi Pendidikan Matematika*, 11(4), 3502–3513.
<https://doi.org/10.24127/ajpm.v11i4.5647>
- Hasanah, N., Syaifuddin, M., & Darmayanti, R. (2022). Analysis of the Need for Mathematics Teaching Materials “Digital Comic Based on Islamic Values” for Class X SMA Students in Era 5.0. *Numerical: Jurnal Matematika Dan Pendidikan Matematika*, 6(2). <http://ejournal.radenintan.ac.id/index.php/al-jabar/index>
- Hawkinson, L. E., Faria, A.-M., Bouacha, N., Lee, D. H., & Metzger, I. (2017). Quality Improvement Efforts among Early Childhood Education Programs Participating in Iowa’s Quality Rating System. REL 2017-244. *Regional Educational Laboratory Midwest, March*.
- Humaidi, N., Darmayanti, R., & Sugianto, R. (2022). Challenges of Muhammadiyah’s Contribution in Handling Covid-19 in The MCCC Program in Indonesia. *Khazanah Sosial*, 4(1), 176–186. <https://doi.org/10.15575/ks.v4i1.17201>
- Inganah, S., Darmayanti, R., & Rizki, N. (2023). Problems, Solutions, and Expectations: 6C Integration of 21 st Century Education into Learning Mathematics. *Jurnal Edukasi Matematika Dan Sains*, 11(1), 220–238.
<https://doi.org/10.25273/jems.v11i1.14646>
- Kalleny, N. (2020). Advantages of Kahoot! Game-based formative assessments along with methods of its use and application during the COVID-19 Pandemic in various live learning sessions. *Journal of Microscopy and Ultrastructure*, 8(4). https://doi.org/10.4103/JMAU.JMAU_61_20
- Keith, R. S. (2017). The Cost of Inequality: The Importance of Investing in High Quality Early Childhood Education Programs. *ProQuest LLC*.
- Khoiriyah, B., Darmayanti, R., & Astuti, D. (2022). Design for Development of Canva Application-Based Audio-Visual Teaching Materials on the Thematic Subject “Myself (Me and My New Friends)” Elementary School Students. *Jurnal Pendidikan Dan Konseling (JPDK)*, 4(6), 6287–6295.
- Kim, J. (2020). Learning and Teaching Online During Covid-19: Experiences of Student Teachers in an Early Childhood Education Practicum. *International Journal of Early Childhood*, 52(2). <https://doi.org/10.1007/s13158-020-00272-6>
- Lutfi, J. S., & Khusna, H. (2021). Analisis Kemampuan Representasi Matematis Siswa berdasarkan Tingkat Motivasi Belajar pada Pandemi Covid-19. *Jurnal Cendekia : Jurnal Pendidikan Matematika*, 5(3), 2185–2197.
<https://doi.org/10.31004/cendekia.v5i3.728>
- Ndeot, F., Sum, T. A., Jaya, P. R. P., Bali, E. N., & Ori, M. M. (2022). Pendampingan Penyusunan Dokumen KTSP Paud. *AJAD: Jurnal Pengabdian Kepada Masyarakat*, 2(1). <https://doi.org/10.35870/ajad.v2i1.39>
- Nurhadianti, & Pratolo, B. W. (2020). Students’ perception toward the application of Kahoot! As an assessment tool in EFL class. *Universal Journal of Educational Research*, 8(5). <https://doi.org/10.13189/ujer.2020.080554>
- Ou, S. R., Arteaga, I., & Reynolds, A. J. (2019). Dosage effects in the child-parent center PreK-to-3rd grade program: A Re-analysis in the Chicago longitudinal study. *Children and Youth Services Review*, 101.
<https://doi.org/10.1016/j.chilyouth.2019.04.005>



- Qomariyah, S., & Darmayanti, R. (2023). Development of High School Students' Mathematical Reasoning Ability Instruments on Three Dimension Material. *Jurnal Edukasi Matematika Dan Sains*, 11(1), 249–260. <https://doi.org/10.25273/jems.v11i1.14705>
- Regassa, T., Tefera, B., Negassa, D., & Jebessa, F. (2022). Teachers' Beliefs and Practices in Reaching Children's Varied Needs in Early Childhood Education Programs. *East African Journal of Education Studies*, 5(1). <https://doi.org/10.37284/eajes.5.1.543>
- Sah, R., Darmayanti, R., & BPA, M. (2022). Updating Curriculum Through 21st- Century Learning Design. *Seminar Nasional Teknologi Pembelajaran*, 2, 1.
- Sah RWA, Darmayanti, R., & Maryanto BPA. (2022). Updating Curriculum Through 21st-Century Learning Design. *Seminar Nasional Teknologi Pembelajaran*, 2(1). <http://snastep.um.ac.id/pub/index.php/proceeding/indexKeahlianPerformaPakar dalamTeknologiPendidikanuntuk>
- Santika, D. A., Mulyana, E. H., & Nur, L. (2020). Pengembangan Media Pembelajaran Model STEM pada Konsep Terapung Melayang Tenggelam untuk Memfasilitasi Keterampilan Saintifik Anak Usia Dini. *JURNAL PAUD AGAPEDIA*, 4(1). <https://doi.org/10.17509/jpa.v4i1.27207>
- Siswanto, Y., Sutarto, J., & Mulyono, S. E. (2018). E-training based on Determination of Education and Training Models of Early Childhood Teachers Education Programs. *Journal of Nonformal Education*, 4(2). <https://doi.org/10.15294/jne.v4i2.15517>
- Sugian, E., Fahrudin, F., & Witono, A. H. (2021). Implementasi Program Pengembangan PAUD “Holistik Integratif” di PAUD LSM Ampenan Kota Mataram. *Jurnal Ilmiah Mandala Education*, 7(3). <https://doi.org/10.36312/jime.v7i3.2342>
- Sugianto, R., Cholily, Y. M., Darmayanti, R., Rahmah, K., & Hasanah, N. (2022). Development of Rainbow Mathematics Card in TGT Learning Model for Increasing Mathematics Communication Ability. *Kreano: Jurnal Matematika Kreatif-Inovatif*, 13(2), 221–234. <http://journal.unnes.ac.id/nju/index.php/kreano>
- Syaifuddin, M., Darmayanti, R., & Rizki, N. (2022). Development of a Two-Tier Multiple-Choice (TTMC) Diagnostic Test for Geometry Materials to Identify Misconceptions Of Middle School Students. *Jurnal Silogisme: Kajian Ilmu Matematika Dan Pembelajarannya*, 7(2), 66–76. <http://journal.umpo.ac.id/index.php/silogisme>
- Usmiyatun, & Sah, R. A. (2021). Design Development of Audiovisual Teaching Materials for Canva Application-based Reading Skills in Early Childhood. *Jurnal Caksana: Pendidikan Anak Usia Dini*, 4(1). <https://doi.org/https://doi.org/10.31326/jcpaud.v4i1.1555>
- Vidyastuti, A. N., Mahfud Effendi, M., & Darmayanti, R. (2022). Aplikasi Tik-Tok: Pengembangan Media Pembelajaran Matematika Materi Barisan dan Deret Untuk Meningkatkan Minat Belajar Siswa SMA. *JMEN: Jurnal Math Educator Nusantara*, 8(2). <http://ojs.unpkediri.ac.id/index.php/matematika>
- Weiland, C., & Morris, P. (2022). The risks and opportunities of the COVID-19 crisis for building longitudinal evidence on today's early childhood education programs. *Child Development Perspectives*, 16(2). <https://doi.org/10.1111/cdep.12445>



- Widiastuti, Y. K. W., Rasmani, U. E. E., & Wahyuningsih, S. (2021). Early Childhood Education Teachers Consistency of E-Learning Programs. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 5(2). <https://doi.org/10.31004/obsesi.v5i2.1010>
- Zamhari, A., & Rahmayanti, I. (2021). The The Response and Negotiation of Pesantren in Maintaining the Values of Pesantren During the Covid-19 Pandemic: A Case Study of Pondok Pesantren Darussunnah Hadith. *Jurnal Iqra': Kajian Ilmu Pendidikan*, 6(1).
- Zweig, J., Irwin, C. W., Kook, J. F., & Cox, J. (2015). Data collection and use in early childhood education programs: Evidence from the Northeast Region. REL 2015-084. *Regional Educational Laboratory Northeast & Islands*, April.