



## Learning facilities and infrastructure based on the characteristics of Children with Special Needs in inclusive education

Indah Maysela Azzahra<sup>1✉</sup>, Raden Rachmy Diana<sup>2</sup>, Evi Selva Nirwana<sup>3</sup>,  
Rz. Ricky Satria Wiranata<sup>4</sup>, Kiki Melita Andriani<sup>5</sup>

<sup>1,2,5</sup> Universitas Islam Negeri Sunan Kalijaga Yogyakarta, Indonesia

<sup>3</sup> Universitas Islam Negeri Fatmawati Sukarno Bengkulu, Indonesia

<sup>4</sup> Sekolah Tinggi Agama Islam Terpadu Yogyakarta, Indonesia

✉ [20204032006@student.uin-suka.ac.id](mailto:20204032006@student.uin-suka.ac.id)

### Article Information

Submitted November 19, 2022

Revised December 17, 2022

Accepted December 29, 2022

### Keywords

Infrastructure;  
Children with Special  
Needs;  
Inclusive Education.

### Abstract

The need for learning facilities and infrastructure in inclusive PAUD (Early Childhood Education) is still limited. This study aims to contribute to every manager of inclusive and regular PAUD institutions in providing learning infrastructure needs for all students based on applicable standards or provisions. The research method uses a qualitative method of literature study. Miles and Huberman's interactive analysis carried out the data analysis technique, which consisted of data collection, reduction, presentation, and conclusion. Data was collected from reading references such as articles, books, and inclusive PAUD POS issued by the Indonesian Ministry of Education and Culture. The study's results found that each characteristic of children with special needs has different needs for facilities and infrastructure. In addition, it was found that several infrastructure facilities could be designated for other different types of children with special needs characteristics, such as rooms, equipment, media, and student learning resources. The conclusion is that inclusive PAUD institutions need to provide modified infrastructure based on each characteristic of children with special needs so that they can be used inclusively.

## INTRODUCTION

Children with special needs require special services and treatment from the surrounding environment to help children overcome obstacles in their daily activities and achieve optimal development (Dara Gebrina Rezieka et al., 2021; Widayakusuma, 2021; Nuryati, 2022). Special services such as teaching and recognition are needed by CHILDREN WITH SPECIAL NEEDS both in the family environment, school environment, and the surrounding community (Abubakar & Badril, 2021; Putra et al., 2021; Astuti, 2022). Children need to be given the best stimulation, equipment, and educational services, starting from preschool to higher education, along with regular children (Reni, 2021; Subakti et al., 2022; Nofianti, 2021).

Children with special needs and non-special needs study in the same school (Bahri, 2022; R. Tanjung et al., 2022; Widiyanto & Putra, 2021). The government stated in Permendiknas no 70 of 2009 that it requires all regular schools, both PAUD (Early Childhood Education), SD (Primary School), SMP (Junior High School), SMA (Senior High School), and tertiary institutions to accept students with physical, mental, cognitive, emotional and behavioral (children with special needs) limitations. The government stated in Permendiknas no 70 of 2009 requires that all regular schools, both PAUD, SD, SMP, SMA, and tertiary

institutions accept students with physical, mental, cognitive, emotional, and behavioral (children with special needs) limitations (Alfikri et al., 2022; Nurfadillah et al., 2022; Qomarudin & Safrudin, 2021). PAUD schools intended for regular and special students are called inclusive PAUD schools (Erlina, 2021, p. 6; Setiawan et al., 2022; Khoiruman & Satriyo, 2022). Currently, the government has issued a new regulation, namely PP No. 13 of 2020, which explains that inclusive education needs to be formed into service units in both formal early childhood education, basic education, secondary education, and higher education through strengthening institutional functions (PPRI, 2020; HADIAN APANDI, 2022; Noer & Kartika, 2022)

Inclusive PAUD not only accepts children with special needs to go to school but also provides all the learning needs of children with special needs at school. The problem that often occurs in inclusive PAUD environments is claiming to carry out inclusive education, but it is not inclusive (Sakti, 2020, p. 247; Tugiah & Trisoni, 2022; Setiawan et al., 2022). Besides, parents and the community often reject children with special needs (Gumilang & Irnawati, 2022; Syaputri & Afriza, 2022; Mansir, 2021). Facilities and infrastructure are crucial factors in the success of inclusive PAUD (Kemendikbud, 2018, p. 1; Ariani et al., 2022; Masitah, 2012). The obligation to provide facilities and infrastructure to formal and non-formal school institutions is written in RI Law no. 20 of 2003 regarding the national education system (Yuwono & Mirnawati, 2021; Lazar, 2020; S Liani et al., 2021). Furthermore, the law also explains that the provision of facilities and infrastructure must cover the needs of all children with all their growth, development, and abilities (Susanto, 2020; Basit & Puspitarini, 2020; Febriyanti & Pramono, 2022).

The availability of facilities and infrastructure must exist in educational units based on PP RI No. 19 of 2005 regarding National Education Standards Chapter VII article 42 paragraph 1-2 (Wali et al., 2021; Gunawan et al., 2020; Azizah et al., 2020). The obligation to provide facilities includes furniture, educational equipment, learning resources such as books, consumable equipment, and other facilities needed to support the learning process so that it is regular and continuous (Kato et al., 2022; Masitah, 2012; Ashari, 2022). While the availability of infrastructure that must exist, such as building land, classrooms, management rooms, teacher rooms, rooms for worship, libraries, laboratories, canteens, physical training fields/rooms, playing fields/rooms, and other spaces/places needed to support learning (Fajartriani & Karsiwan, 2021; S Liani et al., 2021; Nirma et al., 2021). Apart from that, articles 12 and 13 in PPRI 2020 state that educational institutions need to provide a space to release tension or a space for relaxation. (PPRI, 2020; Hafilda & Martana, 2021; Inarta & Aziz, 2020).

Managed facilities and infrastructure must meet the standards for infrastructure provision as set out in PP RI No. 57 of 2021 Part Seven article 25 (PPRI, 2021; Dermawan, 2018; Ghita et al., 2017). Facilities and infrastructure function as a support for the implementation of learning outcomes of inclusive institutions (Jannah et al., 2021; Widyakusuma, 2021; Ramdhiani, 2021). Inclusive PAUD institutions must provide availability and manage accessible infrastructure for all AUD, especially those with special needs (Salasa, 2021; Amka, 2020; SAFIRA, 2020). Infrastructure must meet the standards according to the requirements of each child with special needs characteristics (Sakti, 2020; Simorangkir & Lumbantoruan, 2021; Adhelacahya et al., 2020). In addition, children who experience learning

difficulties need the role of those around them (the school environment) to make the best possible use of the facilities available in inclusive PAUD so that children can use them effectively and efficiently (Gunawan et al., 2020; Amka, 2020; Handayani & Kartiko, 2021). According to UNESCO, the principle of universal design of facilities and infrastructure is that infrastructure and arrangements act as facilitation for children with disabilities in inclusive PAUD so that it supports the participation of children from various backgrounds and shapes their learning experience. (Muhibbin & Hendriani, 2021; Rohiyatun & Najwa, 2021; Utami & Putra, 2020). Universal facilities and infrastructure must be accessible to children with and without disabilities (Purba et al., 2021; Jauhari & Idhartono, 2022; Muslimin & Muqowim, 2021). In addition, the Lien Foundation revealed that this universal principle is applied to other fields, such as curriculum, environment, and learning (UNESCO, 2021; S A Sakti, 2020; Susanto, 2020).

The same previous researcher conducted a literature review conducted by, explaining in the results of his research discussion that the provision of facilities and infrastructure in implementing inclusive education must be considered and adapted to the characteristics and accessibility of children with special needs (Martha & Suryana, n.d.; Sardista et al., 2020; Dirna, 2022). The facilities and infrastructure used at Saymara Kartasura inclusive PAUD include special classrooms, therapy rooms, special tables, therapy tools, and APE, which support and facilitate children with special needs learning inside and outside the classroom (Martha & Suryana, n.d.; Sardista et al., 2020; Dirna, 2022). The difference between Shofa's research and this research is that Shofa's research is limited to describing the existing facilities and infrastructure used in the Saymara Kartasura PAUD school (Martha & Suryana, n.d.; Sardista et al., 2020; Dirna, 2022). Meanwhile, this study describes the provision of facilities and infrastructure based on national eligibility standards for infrastructure. This research can help researchers observe the application of standards based on Indonesian government regulations in regular and inclusive PAUD locations.

Astawa conducted other previous research. In discussing his research, he stated that facilities and infrastructure should be adapted to the curriculum (teaching materials) that have been developed. (Astawa, 2021, p. 70; Baroroh & Muyasaroh, 2020; Prasetyo & Supena, 2021). Sarana dan prasarana dalam pendidikan inklusif misalnya seperangkat peralatan, bahan, dan perabotan yang digunakan dalam proses pembelajaran (Astawa, 2021, p. 70; Baroroh & Muyasaroh, 2020; Prasetyo & Supena, 2021). The difference between Astawa's research and this research lies in the variables used, namely the facilities and infrastructure and the curriculum that affect it.

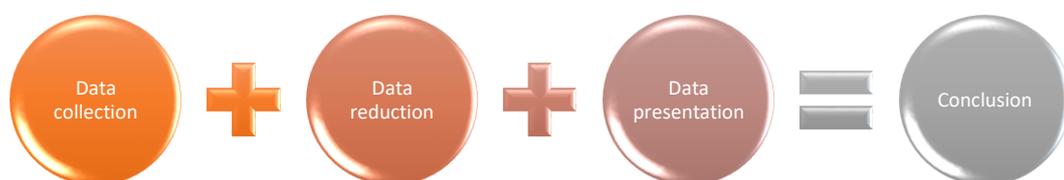
Based on the theory from previous studies, deeper theory development can be carried out regarding what facilities and infrastructure are needed, such as what the equipment is like, what the room and building are like, and what media and games are supposed to be used. At a minimum, the facilities and infrastructure used must comply with applicable inclusive early childhood education standards. The goal to be achieved is to describe learning facilities and infrastructure based on the characteristics of children with special needs in inclusive PAUD. It is hoped that teachers and schools implementing inclusive PAUD can take action to provide the services and facilities needed based on the characteristics of each child with special needs in the inclusive schools they establish. Therefore, researchers are interested in collecting and

reviewing various literature related to children with special needs facilities and infrastructure in inclusive education, especially in inclusive PAUD institutions.

## METHODS

This study aims to analyze and describe the facilities and infrastructure needed by children with special needs based on their characteristics in inclusive education. The research method uses qualitative research methods with a literature study approach. The reason for choosing a literature study approach is because there is still a lack of comprehensive references regarding children with special needs learning facilities and infrastructure based on each characteristic for teachers and inclusive PAUD schools. The reading references collected came from expert opinions, articles, books, and inclusive PAUD POS issued by the Indonesian Ministry of Education and Culture (PPRI, 2021). This research was conducted in November 2022. The data analysis technique was carried out using interactive analysis by Miles and Huberman (Miles & Huberman, 1992). The stages of data analysis consist of collecting data, reducing data, presenting data, and concluding.

After data has been collected from various literature related to the facilities and infrastructure used to study children with special needs in inclusive PAUD, it is reduced or selected, and it discards the main data or data that is unimportant. Next, the data will be presented in a systematic grouping based on the relationships between sentences to make it easier for the reader to understand the research concept. The final stage is clearly and concisely concluding the research results in answering the research problem. The following is a flowchart of the research conducted which can be seen in Figure 1:



**Figure 1.** Flowchart of the research

## RESULTS AND DISCUSSION

### A. Result

According to Ashari (2022), the basic concept of inclusive education is a quality improvement strategy using a variety of learning methods where learning activities can touch all children and respect all differences. So inclusive education provides equal educational and learning opportunities to all children regardless of the child's physical, intellectual and social aspects, both from an academic and non-academic perspective. So, inclusive PAUD can be interpreted as a PAUD school for regular children and children with special needs. Inclusive PAUD not only accepts children with special needs to go to school but also provides all the learning needs of children with special needs in an inclusive manner at school. The meaning of this opinion is that inclusive PAUD is a place of education for children with special needs regardless of their level of privilege with other children.

The purpose of inclusive education based on Permendiknas number 70 of 2009 is to provide the widest opportunity for all students with physical, emotional, mental, and social disabilities, intellectual potential, or special abilities, to obtain quality education according to their needs and abilities. In addition to realizing the implementation of education that respects diversity and does not discriminate against all students (Ajizah et al., 2021). Based on the goals of inclusive education, every student has the right to be educated and develop various aspects of his development according to his specialties and to provide the deepest meaning for various layers of society that this special child also needs full support, especially in the field of education.

Children with special needs are also referred to as children who experience abnormalities, obstacles, impairments, disabled individuals, mental disorders, disabled individuals, or other subtle terms called special needs or something special (Zahroh & Umam, 2019). The definition of children with special needs, according to Mulyono, is children who are classified as disabled or have disabilities, as well as potential and gifted children (Puspita, 2021). So, children with special needs have physical, mental, intellectual, social, emotional, and potential or gifted children. Children with special needs are not always labeled as children with physical abnormalities. Still, there are children with special needs with an IQ that is so extraordinary that they need special attention to develop aspects of their development (Rezioka et al., 2021).

Based on the standard operating procedures manual for inclusive early childhood education (Kemendikbud, 2018) which discusses children with special needs are categorized into five obstacles that occur in children with special needs, namely: 1) children with visual impairments, 2) children with hearing impairments, 3) children with intellectual disabilities, 4) children with physical and motor disabilities, 5) children with emotional and behavioral barriers. Republic of Indonesia Minister of National Education Regulation No. 70 of 2009 Article 3 paragraph 2, states that children with disabilities or children with special needs consist of: blind, deaf, speech impaired, mentally retarded, quadriplegic, disabled, learning difficulties, slow learning, autism, motor disorders, victims of abuse (drugs, drugs, and other substances) other addictive), multiple disabilities, and other disorders (Sukriadi & Arif, 2021; Zaenuri & Maemonah, 2021).

Policies in implementing education for children with special needs are grouped into three agencies. Children with special needs, which include mental retardation, quadriplegic, disabled, learning disabilities, slow learners, and autistic disorders, must be provided with services by regular schools or inclusive schools (Anisa, 2021). Children with special needs, which include the blind, deaf, and mute, are facilitated by special education units or special schools (SLB) (Nuryati, 2022). Meanwhile, the crew members of the drug victims were organized by the Provincial Narcotics Agency (Dasmiah, 2021). Based on this policy, it can be concluded that inclusive education held in inclusive PAUD is obliged to accept early childhood who experience developmental disorders such as children with special needs, mental retardation, quadriplegics, intellectual disabilities, slow learners, and autism. Children with special needs who receive inclusive education services in inclusive PAUD institutions consist of mentally retarded, disabled, disabled, slow learners, and autistic. The

following explains the five characteristics of inclusive PAUD accommodating children with special needs.

Mental retardation is a disorder or mental retardation characterized by intellectual functioning significantly below the average for individuals of their age (Yuwono & Mirnawati, 2021). Kustawan and Meimulyani revealed that mental retardation is also called a weak mind (feeble-minded), idiots, oligophrenia, mental deficits, and intellectually disabled far below average. Children with mental retardation experience academic, communication, and social difficulties. Classification of IQ levels in mentally retarded, namely: mild mental retardation IQ 51-70, moderate mental retardation IQ 36-51, severe mental retardation IQ 20-35, very severe mental retardation IQ below 20 (Pudjiastuti, 2018).

Physical disability, according to expert T. Sutjihati Somantri is a state of being disturbed or partially damaged due to deformation or obstruction of the muscles, joints, and bones in their normal function (Sovitriana et al., 2021). Physically disabled can be identified and identified from an early age. Physical disabilities in children are characterized by imperfect limbs (body defects, physical disabilities, orthopedic defects, lack of certain limbs, and disorders of the nerves). This situation makes the child unable to use his body functionally and carry out daily activities like other normal children (Minsih, 2020). According to the Ministry of Education and Culture, the characteristics of children with disabilities are: experiencing learning difficulties, experiencing movement and mobility disorders, abnormal body posture and shape, experiencing impaired coordination, and experiencing psychological and sensory disorders (Kemendikbud, 2018). Tunalaras are often referred to as emotional and behavioral disorders (Nurfadhillah, 2022). Tunalaras is an emotional condition that can harm himself and others around him for his satisfaction (Latifah & Supena, 2021).

Slow learning or children with slow learning have intelligence below normal children but are not yet included as mentally retarded. Sometimes children experience barriers to thinking, responding to stimuli, and being socially adaptive, but they are still better than mentally retarded children. In academics, children take a long time to complete their assignments, so children's learning achievement is relatively low (Calista, 2019).

Autism is a child who experiences obstacles caused by a disturbance in the central nervous system, which results in impaired social interaction, communication, and behavior. Autism can be suffered by a person for life when viewed from their behavior Autistic children often injure themselves, lack confidence, become aggressive, respond excessively or do not respond to stimulation, and move their limbs unnaturally (Calista, 2019).

**Table 1.** Characteristics of Inclusive PAUD for Children with Special Needs

No.	Category of Children with Special Needs	Characteristics of Children with Special Needs
1.	Physical and Motor Barriers	Blind, Deaf, Blind, Double-Blind, Deaf
2.	Intellectual Barriers	Mental retardation, slow learning, specific learning difficulties (dyslexia, dysgraphia, and

---

		dyscalculia), ADHD (hyperactivity, difficulty concentrating)
3.	Behavioral, Emotional, and Social Barriers	Tunalaras, Autism
4.	Talented	Genius, Gifted, Talented,

---

According to Dermawan and Wathoni, Inclusive PAUD must provide services, learning systems, special teachers, facilities, and game media that children with special needs can use according to their needs (Widiastuti, 2020). This research study focuses on the availability of learning facilities and infrastructure for children with special needs in inclusive PAUD institutions. Thus, the next material will comprehensively discuss what facilities and infrastructure are needed by each category and the characteristics of children with special needs in inclusive early childhood education.

Based on the explanation above, every child with special needs depends on his needs or specialties. For example, children with privileges in their space for movement, children with intellectual privileges, to children with hearing privileges. For this reason, inclusive education is needed to support these children's development to continue running well. Several studies related to the implementation of inclusive education provide some very good implications, including teachers being more responsive to children with special needs (Loka & Putro, 2022).

Facilities and infrastructure support education in inclusive PAUD (Parid & Alif, 2020). PAUD, which organizes inclusive education, must provide and manage accessibility and infrastructure for all children, especially those with special needs (Loka & Putro, 2022). Children with special needs need special facilities and infrastructure according to their needs. Not only do normal children need these facilities and infrastructure to support educational success, but special needs children also need the best facilities to support their education. Therefore, PAUD managers and teachers need to understand how to provide and manage special facilities and infrastructure tailored to children with special needs (Kemendikbud, 2018).

Several experts and theories, both obtained from SOP guidebooks, articles, books, and other references, including providing definitions related to facilities and infrastructure. First, according to the Ministry of Education and Culture's 2018 SOP book, means can be used as a means to an end. These facilities include moving educational objects or equipment such as chairs, tables, computers, machines, and learning tools. Learning or educational equipment used directly for learning, for example, blackboards, markers, globes, and others. At the same time, infrastructure is the main support for implementing a process. The infrastructure is immovable objects such as land, roads, buildings, yards, parks, fields, and so on (Kemendikbud, 2018).

According to (Agustriani et al., 2022), Educational facilities refer to facilities in the form of equipment, materials, and furniture that are directly used in the learning process at school. Educational infrastructure is everything that indirectly supports the educational process.

Facilities are all facilities needed in the teaching and learning process, both movable and fixed, so educational goals can be carried out smoothly, regularly, effectively, and efficiently. Infrastructure is a facility that indirectly supports the educational process, such as courtyards, gardens or parks, roads leading to schools, school regulations, and others (F. M. Tanjung & Syafira, 2022).

Based on some of the expert opinions above, it can be concluded that the notion of facilities is all facilities, equipment, materials, and furniture, both movable and immovable, which are used directly based on the needs or needs of educators, students and the teaching and learning process in schools so that the educational process runs smoothly, quickly, regularly, effectively, and efficiently and can achieve the expected educational goals. While the notion of infrastructure is all immovable objects, directly or indirectly, being the main support for the course or implementation of an educational process in schools.

The purpose of the learning tools teachers and children use is to facilitate the delivery and receipt of learning materials. Learning infrastructure is to facilitate the implementation of education, namely various equipment, tools, and objects used by teachers and children to facilitate the implementation of education. The function of facilities and infrastructure depends on the use and field (Agustriani et al., 2022).

The purpose of facilities and infrastructure, in general, has four main functions, namely: 1) facilitating work processes or activities so that shared education goals can be achieved, 2) accelerating work processes or activities in an organization or institution, 3) increasing productivity in each activity, 4) making higher quality work or activities (Agustriani et al., 2022).

Learning in inclusive PAUD cannot be separated from learning facilities and infrastructure (Mais, 2016). This is because the purpose of the existence of these facilities and infrastructure is to facilitate the learning process that will take place. Not only that, these facilities and infrastructure will be good media or learning resources for this special needs child (Sari et al., 2020). Good facilities are hoped to achieve proper education (Abi Hamid et al., 2020).

Facilities and infrastructure are an important part of the implementation of education. In the implementation of inclusive education, the infrastructure needed will be more diverse because students with special needs also need some special infrastructure to support the learning process adapted to the types of students with special needs. Inclusive schools must provide facilities and infrastructure for students with special needs (Sukadari, 2019).

Inclusive early childhood education institutions in Japan are strongly supported by the government, especially the improvement of school facilities or facilities and infrastructure. The assistance included building schools, expanding school buildings, and providing elevators, slopes, and toilets for persons with disabilities. Provide maintenance subsidies for equipment such as 3D copying facilities, FM hearing aids, VOCA (voice output communication aids), portable crime prevention bells, and school buses (UNESCO, 2022).

The function of facilities and infrastructure is as a vehicle to support the continuity of the process and the achievement of inclusive education goals (Kemendikbud, 2018). The

facilities and infrastructure needed in inclusive schools are no different from those needed in ordinary schools. They are as follows: 1) classrooms and their equipment (furniture and equipment), 2) practice room (laboratory) and its equipment (furniture and equipment), 3) library room and equipment (furniture/equipment), 4) function room and accessories (furniture and equipment), 5) counseling room and its equipment (furniture and equipment), 6) UKS room and its equipment (furniture and equipment), 7) principal, teacher and administration room, along with its furniture (furniture and equipment), 8) sports field, along with its equipment (furniture and equipment), 9) prayer room, along with its equipment (furniture and equipment), 10) toilet, canteen room, and so on, 11) resource room (place for children with special needs learning aids).

More specifically, the facilities in inclusive PAUD Example: Braille textbooks for blind children, audiobooks, and special equipment based on the conditions and needs of children with special needs (Sukadari, 2019). The conditions of public facilities and infrastructure that need to be considered in the implementation of inclusive PAUD based on the SOP book published by the Ministry of Education and Culture include: 1) Wheel chair lanes in various locations that are passed or where children play, 2) Ramps (even sloping stairs) side by side with public stairs, 3) Elevator as a means of mobility if it has more than one floor in a school building, 4) Accessible doors have two doors with a flat floor so that wheelchairs can pass through, besides that the door opens to the outside so it can be broken in from the inside if in an emergency, 5) Arrangement of all rooms that are accessible (spacious, functional, safe, comfortable, and educational), 6) safe facilities, infrastructure and equipment (material, shape, and substance), 7) Principal's room, teacher's room and administration room along with its furniture (furniture and equipment), 8) Sports field and its equipment (furniture and equipment), 9) Mushola and its equipment (equipment parks and equipment), 10) Toilets, canteens, etc., 11) Resource room (where children with special needs learning aids are placed) (Kemendikbud, 2018).

The following are the facilities and infrastructure children with special needs need according to their special obstacles or characteristics. Facilities and Infrastructure for Children with Physical and Motor Barriers children with physical and motor disabilities need to organize their physical environment and facilities to be easily accessible (Kemendikbud, 2018). The facilities and infrastructure for children with physical and motor disabilities include 1) Space for self-development, its function is to practice daily self-development skills. The required equipment is toiletries, special cutlery (for example, a spoon with a large handle), drinking utensils (a cup with a large handle), chairs, and a table around the body. 2) Space for movement development is to train balance and mobility movements. The equipment needed includes: a table and chair that is strong, stable, and safe balance board, a semicircular balance board for balance exercises in sitting and prone positions, a wheelchair, a walker, crutches (support in pockets and armpits) to help with walking, bags sand functions as ballast and balance stabilizer, big ball (physioball), bolster swing (Kemendikbud, 2018).

Facilities and Infrastructure for Children with Physical Impairments (Blind, Deaf, Speech Impaired) children with visual impairments (blind) need facilities and infrastructure that can be accessed through touch and hearing (Kemendikbud, 2018). The equipment

needed includes: 1) Vision assessment tools, such as eye minus test kits, color blind test kits, and visual impairment symptom test kits 2) Orientation and mobility tools, such as guiding blocks, blind sticks, embossed school maps/plans, 3) Learning/academic aids, such as typewriters braille, book braille, riglet and stylus (braille), special computer programs, such as screen reader programs, reading boards, embossed learning tools (globes, maps, writing) 4) Visual aids (for low vision children with special needs), such as magnifying lenses, telescopes 5) Auditive aids, such as radio, tape recorder, mp3, walkman, DTB (digital talking book/ talking book), talking computer, and CCTV/closed circuit television, voice recorder, sound playback device 6) Physical training tools, such as blind chess, bridge, football with the sounding ball, balance board, power ride, static bicycle (Sulistyorini & Munifah, 2019).

Children with hearing impairments (Deaf) need facilities and infrastructure that can be accessed through touch and sight. Providing visually accessible facilities for deaf children, such as writing, pictures, video media, and video playback devices (Yufiarti et al., 2022). Other required facilities and infrastructure include 1) Speech practice room. The equipment that needs to be provided is a) chairs, tables, and mirrors to train children to read the speech and as visual feedback, b) tape recorders, c) ping pong balls with split PCV pipes, cotton, feathers, candles, thin paper to train breathing by blowing on the media, d) various soft, liquid and hard foods as tongue stimulants to train children's speech organs, for example, honey, candy, e) ice cream spoons are used to hold the tongue when pronouncing certain phonemes, f) musical instruments percussion, whose function is to identify sounds and train sound perception and rhythm. g) word cards to help identify phonemes that children learn, h) various puzzles and building blocks (e.g., towers, animals, boxes) whose function is to recognize objects, 2) Space to practice sound and rhythm perception communication development. This facility is in the form of a vibrating stage. Its function is to train the perception of sound and rhythm (Kemendikbud, 2018). In addition, deaf children are also facilitated by utilizing assessment tools such as scan tests, sound, tuning forks, audiometers, audiogram blanks, cellular soundproofing, sound level meters, and hearing aids. Deaf children also need hearing aids, learning/academic aids, physical training tools, sign language dictionaries, alphabet sign posters, and instruction cards (pictures, words, sentences) (Sulistyorini & Munifah, 2019).

Children with speech impediments (deaf-speech) need facilities and infrastructure that can be accessed through touch, sight, and hearing. The facilities and infrastructure needed by mute children are not much different from the needs of deaf children. The infrastructure needed includes a speech aid room and a hearing aid room because it could also be that a child has a speech disorder due to hearing impairment.

**Table 2.** Facilities and Infrastructure for Children with Physical Barriers

No.	Characteristics of Children with Special Needs	Suggestions and Infrastructure
-----	--	--------------------------------

1.	Blind	Vision assessment tools, orientation, and mobility tools, study/academic aids, visual aids, hearing aids, and physical training aids.
2.	Deaf	A speech practice room with all the equipment, a room for practicing sound perception and rhythm communication with all the equipment, deaf assessment tools, hearing aids, study/academic aids, and physical training tools.
3.	Speech impaired	Speech aid room, and hearing aid room.

Some schools that implement inclusive education should pay attention to some of the things described above concerning what facilities are needed when one of their students has privileges such as hearing, sight, and so on. Some research results state that the need for these facilities and infrastructure to support the development of students becomes even better. Like the existence of smart books for children with special needs (Nirma et al., 2021). Not only that, the provision of these facilities and infrastructure is also a form of special attention of the school for children with *special needs*.

Facilities and Infrastructure for Children with Motor Impediments (Disabled), As for the facilities and infrastructure needed by disabled children in inclusive education settings by providing various facilities and equipment that can improve children's gross and fine motor skills. The equipment needed by children with motor disabilities includes: 1) assessment tools (finger goniometer, flexiometer, plastic goniometer, reflex hammer, posture evaluation set, TPD aesthesiometer, ground rhytem fibre instrument, cabinet geometric insert, color sorting box, tactile board sets), physical training tool (pulley weight, kanavel table, squeez ball, restorator hand, restorator leg, treadmill jogger, safety walking strap, straight, sandbag, exercise mat, inclinemat, neuro development rolls, height adjustablecrowler, floor sitter, kursi CP, individual stand-in table, walking parallel, walker khusus CP, vestibular board, balance beam set, dynamic body dan balance, kolam bola-bola, vibrator, infra-red lamp, dual speed massager, speed training devices, rubber ball, double blocks, footbridge), 2) self-building tools (swivel utensil, dressingframe set, lacing shoes, deluxe mobile commade), orthotik and prothectick devices (cock-up resting splint, denish browns splint, x splint, osplint, long leg, brace set, ankle or short leg brace, original thomascollar, simple cervical brace, corset, crutch, clubfoot walker shoes, thomas heel shoes, wheel chair, prosthetic legs up to the knees, prosthetic legs up to the thighs), and 3) learning/academic aids (alphabet cards, word/sentence cards, full body torso, geometri sharpe, bracelet tower, triangular tower, quadrilateral tower, flavor glass, fragrance bottle, abacus dan washer, peg board, number box) (Dewi, 2015).

Children with physical disabilities need special spaces to facilitate themselves when they are in inclusive schools, including providing space for self-development such as eating, drinking, body hygiene (brushing teeth, bathing), dressing, opening and wearing shoes, and others requiring equipment such as toiletries, eating (spoon handle enlarged), drinking (cup handle enlarged), chairs and tables around the body. In addition to self-development space, space for movement development also needs to be provided to train balance and mobility

equipment needed, including tables, chairs (strong, stable, and safe), balance boards, wheelchairs, walkers, crutches, sandbags, large balls (physioball), dan bolster swing (Kemendikbud, 2018).

One of the characteristics of a disabled child is called cerebral palsy (brain paralysis), requiring facilities such as ramps, wheelchairs, modified chairs, and modified blackboards (Sulistiyorini & Munifah, 2019). In addition, disabled children also need general learning tools and teaching materials. Provide supporting facilities and infrastructure such as special toilets, tables, or modified equipment; classrooms are positioned in such a way as to facilitate access/mobility of students with disabilities (Yufiarti et al., 2022).

**Table 3.** Facilities and Infrastructure for Students with Motor Barriers

No.	Characteristics of Children with Special Needs	Suggestions and Infrastructure
1.	quadriplegic	Assessment tools, self-development tools, teaching/academic aids, self-development rooms with all the equipment, and movement development rooms with all the equipment.

Physically disabled children are children with motoric barriers in their development. So it takes a variety of facilities that can help these children to develop properly. Some of the research related to disabled people requires tools that require them to develop, such as using three wheels in their daily lives, to other tools. (Gangga, 2022). Not only that, but children in this category also need good social support from their surroundings so that they feel loved and loved (zilvana Zetta & Rachim, 2021).

Facilities and Infrastructure for Children with Intellectual Barriers (Difficulty, Specific Learning Difficulties, Slow Learning, ADHD). Facilities and infrastructure needed by children with intellectual disabilities include 1) Space for self-development, which is to train daily skills. Facilities needed include a dining table, chairs, bathroom, and equipment (bathing, eating, drinking, clothes, sandals, shoes, etc.). Picture word cards on ways to care for and take care of yourself. 2) Sports room's function is to train children's gross motor skills and balance. The equipment needed includes balance boards, balls of various sizes, ladders, mats, and holla hops. 3) Study room that functions to train fine motor coordination, concentration, and classify objects. The equipment needed includes a variety of puzzles (shapes, objects, letters, etc.), beads, plasticine, various tongs, tangrams, and unit blocks (Kemendikbud, 2018).

Equipment needed by mentally retarded children includes academic assessment and self-regulation tools, self-development training tools, number and symbol concept development tools, creativity, thinking and concentration development tools, language teaching tools, and motor perception exercises. Previous experts have found a learning application that is suitable for use by children with mental retardation, namely the application *Augmented Reality*. Using this learning application will be able to improve the

memory of those with mental retardation who have difficulty memorizing subject matter (Widiastuti, 2019).

The equipment needed by children with learning difficulties includes learning ability assessment tools (instrument revealing history of abnormalities and WISC intelligence tests) and learning/academic assistance (difficulty learning to read, difficulty learning language, difficulty learning to write, difficulty learning mathematics). Children with specific learning difficulties, *slow learning*, and ADHD do not need special equipment or media (Yufiarti et al., 2022). The media used is the same as the media used by early childhood in general. General media, e.g., puzzles, 3D geometric shapes, hint cards (pictures, words, sentences), and tactical counters (Sulistiyorini & Munifah, 2019).

Several studies related to these special intellectual needs, such as mentally retarded children who need the support of parents, the surrounding environment, and so on, and proper parenting for these children (Rudita et al., 2021). In addition, various learning models and methods that are attractive to children can also be applied to improve the child's development (Sukriadi & Arif, 2021).

**Table 4.** Facilities and Infrastructure for Students with Intellectual Barriers

No.	Characteristics of Children with Special Needs	Suggestions and Infrastructure
1.	Mentally disabled	Room for self-development (with all self-development equipment), sports room (exercise equipment), study room (game media / APE), tools for assessing academic abilities and self-adjustment, self-development training tools, tools for developing the concept of numbers and symbols, tools for developing creativity, thinking and concentration, language teaching tools, and perceptual motor exercises.
2.	Slow Learning	There are no special facilities or infrastructure.
3.	Specific learning difficulties (Dyslexia, Dysgraphia, Dyscalculia)	Learning ability assessment tools, learning/academic aids (pencil grip).
4	ADHD	There are no special facilities or infrastructure.

Facilities and Infrastructure for Children with Emotional and Social Behavior Barriers (those with hearing impairment and autism). The means of equipment needed for the characteristics of children with special needs with disabilities include behavioral disorder assessment tools (adaptive Behavior Inventory for children and the Adaptive Behavior

scale), behavior therapy tools, and game therapy tools (pretend game, hide way, put me a tune, copycats, jig-saw puzzle, puppet house, hunt the thimble, gloves, hoopla, sand pits, animal matching games, organ, drum with stick and tripod, tambourine, flute, torso, puzzle). In addition, it is also necessary to provide physical therapy tools and the required equipment, namely mattresses, a straight-type staircase, a soccer ball, ball, net volley, power ride, stick letter, trecketsando (5 flat), and rope and ladder (Dewi, 2015).

Space and equipment that need to be provided for children with emotional and behavioral barriers (autism) in inclusive schools include a calming room and space for developing communication and social interaction. The calming room functions to calm children who are experiencing tantrums. Facilities that need to be provided include tables, chairs, game tools, and musical instruments. Meanwhile, developing communication and social interaction space needs to provide pictorial communication cards (PECS= Picture Exchange Communication System) (Kemendikbud, 2018).

**Table 5.** Facilities and Infrastructure for Students with Barriers to Emotional and Social Behavior

No.	Characteristics of Children with Special Needs	Suggestions and Infrastructure
1.	Tunalaras	Behavioral disorder assessment tools, behavioral therapy tools, game therapy tools, physical therapy tools, calming rooms, and communication and social interaction development rooms.
2.	Autism	Spaces and self-development tools, calming rooms, study rooms, and spaces for developing social interactions, and no special media or APE exist for autism.

Facilities and Infrastructure for Gifted Children (genius, intelligent, gifted, special gifted, potential, creative). The equipment needed includes assessment tools and learning/academic aids, including a science laboratory, language, and computer (Sukadari, 2019). Assessment tools for gifted children consist of the WISC-R intelligence test, the Stanford Binet intelligence test, the cognitive ability test, differential aptitude test. Other teacher teaching/academic tools include reference books, reading books, equipment books, textbooks, internet, magazines, newspapers, radio, cassette, tape recorder, tv, OHP, wireless, slide projector, LD/VCD/DVD, and chart computer. In addition, inclusive schools must provide opportunities to become peer tutors, encyclopedia books, special computer programs, and other infrastructure depending on their talents and interests (Sulistiyorini & Munifah, 2019).

**Table 6.** Facilities and Infrastructure for Talented Students

No.	Characteristics of Children with Special Needs	Suggestions and Infrastructure
-----	--	--------------------------------

1.	Talented students (genius, smart, gifted, special gifted, potential, creative)	Gifted assessment tools and learning/academic aids (facilities, media, equipment) depend on the talents and interests of the child.
----	--	---

Management of Special Facilities and Infrastructure. Facilities and infrastructure are needed to support the achievement of the potential development of students/children with special needs. The management of special facilities and infrastructure in inclusive schools is carried out in an integrated manner by Special Guidance Teachers (GPK), class teachers, and teams from various related professions, including ophthalmologists, psychologists, special education experts, special children's sports experts, *social worker*, counselors, ENT specialists, speech therapists, neurologists, pediatricians, orthopedists, prosthetic orthotics, physiotherapists, occupational therapists, linguists (remedial language/writing specialists) according to the type and level of children with special needs (Titania, 2022; Putri, 2022; Liani et al., 2021).

The use of facilities and infrastructure is flexible. It is not specific to each child and each teaching area but can be used by other children in different fields of study and classes. So, in this case, the manager's creativity is needed in determining the tool type and the purpose of using the facilities and infrastructure. The use of facilities must be integrated into every aspect of development, meaning that once carrying out an activity, its use can teach the emotions of children with special needs. For example, the use of sensory-motor training tools, in addition to training the sharpness of the senses, can also train the ability to speak, socialize or balance. It can be seen that the use of tools is very dependent on the depth of understanding of managers of existing facilities and the needs of crew members.

The manager can create facilities and infrastructure by considering the needs of children with special needs, environmental conditions, development, and learning objectives. Equally important is the need to improve communication with parents regarding the existing facilities and infrastructure to create continued use of these tools in the family environment so that parents can help improve their child's learning at home (Sukadari, 2019).

## B. Discussion

Based on the results of a literature study obtained from several reading sources, including standard operating procedure books for inclusive early childhood education issued by the 2018 Ministry of Education and Culture, reference books, scientific journal articles, and other reading materials. Analysis of the literature study that researchers have conducted found that PAUD institutions do not only accept students with certain disorders or obstacles but implementing inclusive PAUD requires standards of facilities and infrastructure that are inclusive. Inclusive PAUD institutions need to provide and classify the facilities and infrastructure needed by each characteristic of children with special needs. The central government and several local governments have developed guidelines for implementing inclusive education in early childhood. If the implementation is done properly, the inclusive system that has been implemented since early childhood will be able to contribute maximally to institutions and their students (Syahria Anggita Sakti, 2020).

Each characteristic of children with special needs has different needs for facilities and infrastructure to support academic and non-academic students. Several different characteristics of children with special needs can use many facilities and infrastructures. Game tools and learning media, in general, can be used by all children with special needs; it's just that modifications need to be made so that they can be used inclusively. Inclusive PAUD institutions need to manage and manage the availability, grouping, and use of infrastructure based on the learning needs of each characteristic of children with special needs in inclusive PAUD institutions.

According to ([Lestarinigrum, 2017](#)), Inclusive education requires different handling from regular institutions. In addition to accepting children with special needs, inclusive PAUD institutions accept children with special needs. Institutions also need to provide infrastructure, competent teaching staff, and support from parents in understanding and appreciating the diversity of students in schools.

The implementation of inclusive education will be successful if the school implements it according to regulations. The obstacles to implementing inclusive PAUD include the unavailability of adequate facilities and infrastructure in inclusive PAUD schools and the lack of support from the government to provide learning facilities and infrastructure for children with special needs. The government only hinted at PAUD to organize inclusive education without providing the necessary facilities and infrastructure ([Ajizah et al., 2021](#)).

The implications of this research are very positive and good for inclusive PAUD providers, children with special needs who will attend inclusive PAUD, and parents and other communities who have concerns for the education of children with special needs. The results of a literature study regarding learning facilities and infrastructure based on the characteristics of children with special needs in inclusive education settings also have a good impact on the development of educational knowledge.

The limitations of this research are the lack of references regarding inclusive PAUD facilities and infrastructure. In addition, the references obtained have not been updated; both were issued by the Ministry of Education and Culture and other reading sources. Therefore, the researcher suggests that future researchers re-examine and find newer and more comprehensive references. The importance of conducting further research on learning facilities and infrastructure in inclusive PAUD greatly influences and can improve the system of implementing inclusive education in Indonesia, especially inclusive PAUD.

## **CONCLUSIONS**

Inclusive education means education intended for regular children and children with special needs. Therefore all matters relating to the development of the potential of learners need to accommodate all children without any discrimination, likewise with the needs of learning facilities and infrastructure for each child. Each characteristic of children with special needs requires special facilities and infrastructure according to their learning needs. PAUD institutions must provide adequate facilities and infrastructure to implement inclusive PAUD. These facilities and infrastructure must be based on the government's standards to maximize the inclusive learning process and fulfill the right to education for children with special needs.

## ACKNOWLEDGEMENT

The author would like to thank various parties who have contributed to this research, especially the supervising lecturer at the Sunan Kalijaga State Islamic University Yogyakarta and the supervisor lecturer at UIN Fatmawati Sukarno Bengkulu. The author also thanks the editors and reviewers who have allowed them to publish this article.

## REFERENCES

- Abi Hamid, M., Ramadhani, R., Masrul, M., Juliana, J., Safitri, M., Munsarif, M., Jamaludin, J., & Simarmata, J. (2020). *Media Pembelajaran*. Yayasan Kita Menulis.
- Abubakar, A., & Badril, S. (2021). Pelayanan Pendidikan Agama Pada Anak Berkebutuhan Khusus Di Kota Parepare. *Educandum*, 7(2), 254–272. <https://doi.org/10.31969/Educandum.V8i2>
- Adhelacahya, K., Said, A. A. N., & ... (2020). ... Pembelajaran Berbasis Science, Technology, Engineering And Mathematics (Stem) Pada Anak Berkebutuhan Khusus Di Era Revolusi. *Jurnal Ilmiah*, 4(1), 147. <http://jurnal.ukmpenelitianunyu.org/index.php/jippm/article/view/182>
- Ajizah, A., Rachman, A., & Mirnawati. (2021). Pengaruh Mata Kuliah Pendidikan Inklusif Terhadap Pemahaman Mahasiswa Pgsd Fkip Di Universitas Lambung Mangkurat Terhadap Anak Berkebutuhan Khusus. *Special And Inclusive Education Journal (Special)*, 2(1), 68-76. <https://doi.org/10.36456/Special.Vol2.No1.A3887>
- Alfikri, F., Khodijah, N., & Suryana, E. (2022). Analisis Kebijakan Pendidikan Inklusi. *Syntax Literate; Jurnal Ilmiah Indonesia*, 7(6), 7954–7966. <http://dx.doi.org/10.36418/Syntax-Literate.V7i6.7545>
- Amka, A. (2020). *Efektivitas Media Pembelajaran Jarak Jauh Pada Masa Pandemi Covid-19 Bagi Anak Berkebutuhan Khusus Di Sekolah I*. Repo-Dosen.Ulm.Ac.Id. [https://repo-dosen.ulm.ac.id/bitstream/handle/123456789/22271/Laporan Penelitian Efektivitas Media Pembelajaran Jarak Jauh Pada Masa Pandemi Covid-19 Children With Special Needs Di Kalsel.Pdf?Sequence=1](https://repo-dosen.ulm.ac.id/bitstream/handle/123456789/22271/Laporan%20Penelitian%20Efektivitas%20Media%20Pembelajaran%20Jarak%20Jauh%20Pada%20Masa%20Pandemi%20Covid-19%20Children%20With%20Special%20Needs%20Di%20Kalsel.Pdf?Sequence=1)
- Anisa, R. S. (2021). Pola Komunikasi Antara Guru Dengan Anak Autis Dalam Proses Belajar Mengajar Di Slb-C Syauqi Day Care Serdang Bedagai. *Jurnal Ilmiah Mahasiswa Ilmu Sosial Dan Politik [Jimsipol]*, 1(3), 1-10. Jurnal Homepage: <http://jurnalmahasiswa.umsu.ac.id/index.php/jimsipol>
- Ariani, B., Saputra, P. D., Rahmayanti, H. D., Untailawan, F., Purwanti, N., Leviastuti, A., Kautsari, N., Mulyono, S., Achmad, F., & Endit, N. P. I. (2022). *Gagasan Inovasi Pendidikan Volume 1*. Paragon Inspiring Lecturer.
- Ashari, D. (2022). Panduan Mengidentifikasi Anak Berkebutuhan Khusus Di Sekolah Inklusi. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 6(2), 1096. <https://doi.org/10.31004/Obsesi.V6i2.1677>
- Astawa, I. N. T. (2021). Pendidikan Inklusi Dalam Memajukan Pendidikan Nasional. *Guna Widya: Jurnal Pendidikan Hindu*, 8(1), 65-76. <https://doi.org/10.25078/Gw.V8i1.465>
- Astuti, I. (2022). *Kepemimpinan Pembelajaran Sekolah Inklusi*. Media Nusa Creative (Mnc Publishing).
- Azizah, A. N., Adriany, V., & Romadona, N. F. (2020). Penyelenggaraan Pendidikan Inklusif Di Lembaga Paud. *Edukid*, 16(2), 109–120. <https://doi.org/10.17509/Edukid.V16i2.19830>
- Bahri, S. (2022). Manajemen Pendidikan Inklusi Di Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, 4(1), 94–100. <https://edukatif.org/index.php/edukatif/index>
- Baroroh, H. R., & Muyasaroh, M. (2020). Implementasi Kurikulum 2013 Pada Pembelajaran

- Pai Bagi Anak Berkebutuhan Khusus Di Slb Muhammadiyah Sidayu Gresik. *Tamaddun: Jurnal Pendidikan Dan Pendidikan Keagamaan*. 21(1), 91-102. [Http://Dx.Doi.Org/10.30587/Tamaddun.V21i1.1380](http://dx.doi.org/10.30587/Tamaddun.V21i1.1380)
- Basit, A., & Puspitarini, R. C. (2020). The Development Of Ecological Character On Inclusive School. *Jurnal Inspirasi Pendidikan*. 10(2), 96–104. [Https://Doi.Org/10.21067/Jip.V10i2.4534](https://doi.org/10.21067/Jip.V10i2.4534)
- Calista, W. (2019). *Pola Interaksi Asosiatif Dan Disosiatif Siswa Reguler Dan Siswa Berkebutuhan Khusus Di Sekolah Inklusi Sd Taman Muda Ibu Pawiyatan Yogyakarta*. Uin Sunan Kalijaga Yogyakarta.
- Dara Gebrina Rezieka, Putro, K. Z., & Fitri, M. (2021). Faktor Penyebab Anak Berkebutuhan Khusus Dan Klasifikasi Children With Special Needs. *Bunayya : Jurnal Pendidikan Anak*, 7(2). [Https://Doi.Org/10.22373/Bunayya.V7i2.10424](https://doi.org/10.22373/Bunayya.V7i2.10424)
- Dasmiah. (2021). *Model Manajemen Pelayanan Pendidikan Anak Berkebutuhan Khusus (Children With Special Needs)*. Deepublish.
- Dewi, R. R. (2015). *Berbagi Pengetahuan: Sarana Dan Prasarana Pendidikan Inklusif*. Blogspot.Com.
- Erlina, E. (2021). *Strategi Pemasaran Sekolah Inklusif Di Mi Ma'arif Keji Ungaran Semarang*. Universitas Islam Negeri Walisongo Semarang.
- Febriyanti, N. R., & Pramono, H. (2022). Proses Pembelajaran Pendidikan Jasmani Adaptif Anak Berkebutuhan Khusus Anak Tunagrahita Di Slb Negeri Cendono Kabupaten Kudus. *Indonesian Journal For Physical Education And Sport*. 3(1), :333-339. [10.15294/Inapes.V3i1.48150](https://doi.org/10.15294/Inapes.V3i1.48150)
- Gangga, W. T. (2022). *Uji Performa Electric Bicycle Brushless Dc Roda 3 Untuk Penyandang Disabilitas Tuna Daksa*.
- Gumilang, R. M., & Irnawati, I. (2022). Dimensi Budaya Penerimaan Orang Tua Terhadap Anak Berkebutuhan Khusus (Children With Special Needs). *Pusaka, Jurnal Khazanah Keagamaan* 10(1), 110–124. [Https://Doi.Org/10.31969/Pusaka.V10i1.668](https://doi.org/10.31969/Pusaka.V10i1.668)
- Gunawan, M. R., Sundari, N., Rahmawati, S., & Firda, T. R. (2020). *Manajemen Sarana Dan Prasarana Pembelajaran Untuk Anak Berkebutuhan Khusus Di Sdn Inklusi Semangat Dalam 2 Kabupaten Batola*. Pendidikan Khusus Ulm, Osf Preprints.
- Hadian Apandi, N. P. M. (2022). *Perumusan Rencana Strategis Sekolah Untuk Meningkatkan Mutu Di Sdit Al-Fath Di Kabupaten Bandung Barat (Studi Kasus Sdit Al-Fath Batujajar)*. Perpustakaan Pascasarjana.
- Hafilda, H., & Martana, S. P. (2021). Kriteria Ruang Sekolah Khusus Penyandang Autisme. *Waca Cipta Ruang. Jurnal Ilmiah Desain Interior*. 7(1) 18-26. [10.34010/Wcr.V7i1.4749](https://doi.org/10.34010/Wcr.V7i1.4749)
- Handayani, D. T., & Kartiko, D. C. (2021). Evaluasi Pengembangan Media Painting Stone Pada Siswa Disabilitas Netra. *Jurnal Pendidikan Olahraga Dan Kesehatan*. 9(1), 273-278.
- Inarta, G. U., & Aziz, I. (2020). Pelaksanaan Pembelajaran Pendidikan Jasmani Pada Anak Berkebutuhan Khusus Di Slb Ypplb Kota Padang. In *Jurnal Patriot*. 3(1), 336-344.
- Jannah, U. R., Putra, F. P. E., Hafsi, A. R., & Basri, H. (2021). Pengembangan Sekolah Inklusi Dengan Pemanfaatan Media Visual Scratch Dan Alat Peraga Manipulatif. *Wikrama Parahita: Jurnal Pengabdian Masyarakat*, 5(1), 89–96. [Https://Doi.Org/10.30656/Jpmwp.V5i1.2653](https://doi.org/10.30656/Jpmwp.V5i1.2653)
- Jauhari, M. N., & Idhartono, A. R. (2022). Pengoptimalan Aksesibilitas Fisik Bagi Siswa Berkebutuhan Khusus Disekolah Inklusi. *Kanigara*. 2(1), 264-269. [Https://Doi.Org/10.36456/Kanigara.V2i1.5171](https://doi.org/10.36456/Kanigara.V2i1.5171)
- Kato, I., Subakti, H., Siallagan, T., Hasan, M., Brata, D. P. N., Al Haddar, G., Panjaitan, M. M. J., Purba, B., Haruna, N. H., & Haruna, H. (2022). *Manajemen Pusat Sumber Belajar*. Yayasan Kita Menulis.
- Kemendikbud. (2018). *Prosedur Operasi Standar Pendidikan Anak Usia Dini Inklusif*

- Pembelajaran*. Kementerian Pendidikan Dan Kebudayaan, Direktorat Jendral Pendidikan Anak Usia Dini Dan Pendidikan Masyarakat, Direktorat Pembinaan Pendidikan Anak Usia Dini.
- Khoiri, K. A. (2021). Pendidikan Inklusi Bagi Anak Berkebutuhan Khusus Di Sekolah Dasar. *Jipd (Jurnal Inovasi Pendidikan Dasar)*, 5(1), 1-5. <https://doi.org/10.36928/jipd.v5i1.651>
- Latifah, N., & Supena, A. (2021). Pelaksanaan Pembelajaran Anak Tunalaras Pada Masa Pandemi Covid-19 Di Sekolah Dasar. *Jurnal Basicedu*, 5(1), 1-9. <https://doi.org/10.31004/basicedu.v5i1.556>
- Lazar, F. L. (2020). Pentingnya Pendidikan Inklusif Bagi Anak Berkebutuhan Khusus. *Jkpm: Jurnal Pendidikan Dan Kebudayaan Missio*, 12(2), 99–115. <https://doi.org/10.36928/jpkm.v12i2.512>
- Lestarinigrum, A. (2017). Implementasi Pendidikan Inklusif Untuk Anak Usia Dini Di Kota Kediri (Studi Pada Paud Inklusif YBPK Semampir, Kecamatan Kota, Kediri). *Jurnal Care (Children Advisory Research And Education)*, 4(2).
- Liani, S, Barsihanor, B., & Hafiz, A. (2021). Peran Guru Pendamping Khusus Pada Program Layanan Pendidikan Inklusi Di Tk Idaman Banjarbaru. ... : *Jurnal Dunia Anak Usia Dini*. 3(1), 8-15. <http://dx.doi.org/10.35473/ijec.v4i2>
- Mais, A. (2016). *Media Pembelajaran Anak Berkebutuhan Khusus (Children With Special Needs): Buku Referensi Untuk Guru, Mahasiswa Dan Umum*. Pustaka Abadi.
- Mansir, F. (2021). Paradigma Pendidikan Inklusi Dalam Perspektif Pendidikan Islam : Dinamika Pada Sekolah Islam. *Tadrib*, 7(1), 1–17. [https://doi.org/https://doi.org/10.19109/tadrib.v7i1.66047\(1\)](https://doi.org/https://doi.org/10.19109/tadrib.v7i1.66047(1)), 1–17.
- Martha, D., & Suryana, D. (N.D.). Manajemen Sarana dan Prasarana Pendidikan Inklusif Anak Usia Dini. In *Academia.Edu*. [https://www.academia.edu/download/67971685/Manajemen\\_Sarana\\_Dan\\_Prasarana\\_Pendidikan\\_Inklusif\\_Anak\\_Usia\\_Dini.Pdf](https://www.academia.edu/download/67971685/Manajemen_Sarana_Dan_Prasarana_Pendidikan_Inklusif_Anak_Usia_Dini.Pdf)
- Miles, M. B., & Huberman, A. M. (1992). *Analisis Data Kualitatif*. Jakarta: UI Press.
- Minsih. (2020). *Pendidikan Inklusif Sekolah Dasar: Merangkul Perbedaan Dalam Kebersamaan*. Muhammadiyah University Press.
- Muhibbin, M. A., & Hendriani, W. (2021). Tantangan Dan Strategi Pendidikan Inklusi di Perguruan Tinggi Di Indonesia: Literature Review. *Jpi (Jurnal Pendidikan Inklusi)*. 4(2), 92-102. <https://doi.org/10.26740/inklusi.v4n2.p92-102>
- Muslimin, L., & Muqowim, M. (2021). Peran Kepala Sekolah Terhadap Kebijakan Pendidikan Inklusi Di Tingkat Sekolah Dasar. *Jurnal Kependidikan: Jurnal Peran Kepala Sekolah Terhadap Kebijakan Pendidikan Inklusi Di Tingkat Sekolah Dasar*. 7(3), 708-718. <http://e-journal.undikma.ac.id/index.php/jurnalkependidikan/article/view/3468>
- Nirma, N., Pratama, R. A., & Permatasari, B. I. (2021). Media Pembelajaran Buku Pintar (Bupi) Matematika Bagi Anak Berkebutuhan Khusus (Children With Special Needs). *Jurnal Cendekia: Jurnal Pendidikan Matematika*, 5(2), 1359–1374. <https://doi.org/10.31004/cendekia.v5i2.615>
- Noer, K. U., & Kartika, T. (2022). *Membongkar Kekerasan Seksual di Pendidikan Tinggi: Pemikiran Awal*. Yayasan Pustaka Obor Indonesia.
- Nurfadillah, S., Saadah, L., Cahyani, A. P., Haya, A. F., Rachma, S. N., Umayyah, N., & Huzaemah, H. (2022). Landasan Penyelenggaraan Pendidikan Inklusi Di Sekolah Alam Tangerang. *Masaliq*, 2(6), 669–677. [10.58578/masaliq.v2i6.625](https://doi.org/10.58578/masaliq.v2i6.625)
- Nuryati, N. (2022). *Pendidikan Bagi Anak Berkebutuhan Khusus*. Unisa Press.
- Parid, M., & Alif, A. L. S. (2020). Pengelolaan Sarana Dan Prasarana Pendidikan. *Tafhim Al-Ilmi*, 11(2), 266–275. <https://doi.org/10.37459/tafhim.v11i2.3755>
- Ppri, P. P. R. I. (2020). *Akomodasi Yang Layak Untuk Peserta Didik Penyandang Disabilitas*.

- Ppri, P. P. R. I. (2021). *Standar Nasional Pendidikan* (P. Nomor 57).
- Prasetyo, T., & Supena, A. (2021). Pelaksanaan Pembelajaran Peserta Didik Berkebutuhan Khusus Di Sekolah Inklusif Selama Pandemi Covid-19 Learning Implementation For Students With .... In *Musamus Journal Of Primary Education*. Researchgate.Net. [https://www.researchgate.net/profile/Teguh-Prasetyo-2/publication/351140918\\_Learning\\_Implementation\\_For\\_Students\\_With\\_Special\\_Needs\\_In\\_Inclusive\\_Schools\\_During\\_The\\_Covid-19\\_Pandemic/links/608a5b59a6fdccaebdf507b3/Learning-Implementation-For-Students-With-](https://www.researchgate.net/profile/Teguh-Prasetyo-2/publication/351140918_Learning_Implementation_For_Students_With_Special_Needs_In_Inclusive_Schools_During_The_Covid-19_Pandemic/links/608a5b59a6fdccaebdf507b3/Learning-Implementation-For-Students-With-)
- Pudjiastuti, A. (2018). *Manajemen Pembelajaran Anak Usia Dini Berkebutuhan Khusus (Studi Komparatif Pada Paud Inklusi Pelangiku Jombang Dan Tk Islam Terpadu Darul Falah Pembina Kecamatan Sukorejo Ponorgo*. Uin Sunan Kalijaga Yogyakarta.
- Purba, S., Revida, E., Tamrin, A. F., Bachtiar, E., Purba, B., Ramadhani, Y. R., Purba, P. B., Chamidah, D., Simarmata, J., & Yuniwati, I. (2021). *Analisis Kebijakan Pendidikan*. Yayasan Kita Menulis.
- Puspita, Y. (2021). *Proses Pembelajaran Inklusi Untuk Anak Berkebutuhan Khusus (Children With Special Needs) Di Sdit Al Auifa Kota Bengkulu*. Repository.iainbengkulu.ac.id.
- Putra, P. H., Herningrum, I., & Alfian, M. (2021). Pendidikan Islam Untuk Anak Berkebutuhan Khusus (Kajian Tentang Konsep, Tanggung Jawab Dan Strategi Implementasinya). *Fitrah: Journal Of Islamic Education*, 2(1), 80–95. <https://doi.org/10.53802/fitrah.v2i1.55>
- Putri, N. L. (2022). *Pendidikan Inklusif Anak Usia Dini Berkebutuhan Khusus*. Media Nusa Creative (Mnc Publishing).
- Qomarudin, A., & Safrudin, S. (2021). Pendidikan Inklusif Di Sd Fastabiqul Khairat Kota Samarinda. *Nusantara*, 3(2), 121–138. 10.36088/Nusantara.V3i2.1223
- Ramdhiani, R. (2021). Analisis Pengelolaan Sarana Dan Prasarana Pembelajaran. *Jurnal Riset Pendidikan Guru Paud*. <https://journals.unisba.ac.id/index.php/jrpgp/article/view/389>
- Reni, T. W. (2021). *Peran Civitas Lembaga Paud Dalam Meningkatkan Minat Belajar Anak Usia Dini Di Sdn Wedoro Waru Sidoarjo*. Uin Sunan Ampel Surabaya.
- Rezieka, D. G., Putro, K. Z., & Fitri, M. (2021). Faktor Penyebab Anak Berkebutuhan Khusus Dan Klasifikasi Children With Special Needs. *Bunayya: Jurnal Pendidikan Anak*, 8(2), 40–53. <http://dx.doi.org/10.22373/bunayya.v7i2.10424>
- Rohiyatun, B., & Najwa, L. (2021). Pengelolaan Sarana Dan Prasarana Di Paud. *Jurnal Visionary: Penelitian Dan Pengembangan Dibidang Administrasi Pendidikan*. 6(1), 1-5. <https://doi.org/10.33394/vis.v6i1.4082>
- Rudita, R. M., Huda, A., & Pradipta, R. F. (2021). Hubungan Pola Asuh Orang Tua Dengan Kesadaran Bina Diri Anak Tunagrahita. *Jurnal Ortopedagogia*, 7(1), 8–12. <http://dx.doi.org/10.17977/um031v7i12021p8-12>
- Safira, A. (2020). Sekolah Inklusi (Tk-Sma) Darma Acitya Di Kota Semarang. *Jurnal Poster Pirata Syandana*. <https://ejournal2.undip.ac.id/index.php/jpps/article/download/8293/4332>
- Sakti, Syahria Anggita. (2020). Implementasi Pendidikan Inklusif Pada Lembaga Pendidikan Anak Usia Dini Di Indonesia. *Jurnal Golden Age*, 4(2), 238-249. <https://doi.org/10.29408/goldenage.v4i02.2019>
- Salasa, J. A. (2021). *Analisis Pembelajaran Pendidikan Jasmani Olahraga Dan Kesehatan Bagi Siswa Berkebutuhan Khusus Di Slb Rajawali Makassar*. Eprints.unm.ac.id. <http://eprints.unm.ac.id/20084/>
- Sardista, F., Mahluddin, M., & Siregar, N. (2020). *Pembelajaran Tematik Pada Anak Berkebutuhan Khusus Di Sekolah Luar Biasa Negeri Prof. Dr Sri Soedewi Masjchun Sofwan Sh ....* Repository.uinjambi.ac.id. <http://repository.uinjambi.ac.id/3246/>

- Sari, L., Pratama, R. A., & Permatasari, B. I. (2020). Media Pembelajaran Puzzle Angka Dan Corong Angka (Pancoran) Bagi Anak Berkebutuhan Khusus (Children With Special Needs). *Kreano, Jurnal Matematika Kreatif-Inovatif*, 11(1), 88–100. <https://doi.org/10.15294/kreano.v11i1.23618>
- Setiawan, I., Angela, E. N., Kristiani, S., Rannu, D., Th, S., & Wiyanti, N. T. (2022). *Bunga Rampai Pendidikan Inklusi Anak Usia Dini*. Cv Jejak (Jejak Publisher).
- Simorangkir, M. R. R., & Lumbantoruan, J. H. (2021). Aksesibilitas Anak Berkebutuhan Khusus Di Era Pendidikan 4.0. *Jurnal Dinamika Pendidikan*, 14(1), 204–213. <https://doi.org/10.51212/jdp.v14i1.2901>
- Sovitriana, R., Rosdiana, R., & Shofiyah, S. (2021). Terapi Realitas Teknik Wedp Untuk Meningkatkan Kepercayaan Diri Warga Binaan Sosial Penyandang Tuna Daksa Jakarta. *Psikologi Kreatif Inovatif*, 1(1). <https://doi.org/10.37817/psikologikreatifinovatif.v1i1.1428>
- Subakti, H., Soesana, A., Suesilowati, S., Saputro, A. N. C., Sari, M., Ariza, H., Amaliyah, S., Mahatmaharti, R. A. K., & Sipayung, R. (2022). *Pendidikan Anak Usia Dini*. Yayasan Kita Menulis.
- Sukadari. (2019). *Model Pendidikan Inklusif Dalam Pembelajaran Anak Berkebutuhan Khusus*. Kanwa Publisher.
- Sukriadi, S., & Arif, M. (2021). Model Pembelajaran Pendidikan Jasmani Adaptif Berbasis Permainan Untuk Anak Tunagrahita Ringan. *Jurnal Ilmiah Sport Coaching And Education*, 5(1), 12–24. <https://doi.org/10.21009/jsce.05102>
- Sulistiyorini, S., & Munifah, Z. (2019). Implementasi Layanan Inklusi Children With Special Needs Pada Satuan Pendidikan Pada Anak Usia Dini. *Annual Conference On Islamic Early Childhood Education (Aciece)*, 4, 54-66. <https://conference.uin-suka.ac.id/index.php/aciece/article/view/118>
- Susanto, D. J. (2020). *Pendampingan Belajar Pai Anak Berkebutuhan Khusus Di Sdit Sahabat Alam Palangka Raya*. Digilib.iain-palangkaraya.ac.id. <http://digilib.iain-palangkaraya.ac.id/id/eprint/2950>
- Syaputri, E., & Afriza, R. (2022). Peran Orang Tua Dalam Tumbuh Kembang Anak Berkebutuhan Khusus (Autisme). *Educativo: Jurnal Pendidikan*, 1(2), 559–564. <https://doi.org/10.56248/educativo.v1i2.78>
- Tanjung, F. M., & Syafira, H. (2022). *Administrasi Sarana Dan Prasarana Pendidikan*. <https://doi.org/10.31219/osf.io/wqjne>
- Titania, R. F. (2022). *Peran Relawan Dalam Memenuhi Kebutuhan Anak Berkebutuhan Khusus Di Komunitas Inklusif Center Kecamatan Karangnom (Ickk)*.
- Tugiah, T., & Trisoni, R. (2022). Kurangnya Perhatian Orang Tua Terhadap Pendidikan Anak-Anak Inklusif Di Kamang Baru. *Jurnal Sosial Teknologi*, 2(12), 1387–1397. <https://doi.org/10.36418/journalsostech.v2i12>
- Unesco. (2021). *Inclusion In Early Childhood Care And Education In High-Income Countries*. 8.
- Unesco. (2022). *Japan Inclusion Education Profiles*.
- Utami, M. N., & Putra, W. B. (2020). Fasilitas Ruang Khusus Pada Sekolah Inklusi Binar Indonesia (Bindo) Di Bandung. *Jurnal Arsitektur Terracotta*. 2(1), 34-43. <https://doi.org/10.26760/terracotta.v2i1.4289>
- Wali, F., Rosyidi, I., & Hakim, A. A. (2021). Implementasi Politik Hukum Dalam Undang-Undang Nomor 20 Tahun 2003 Tentang Sistem Pendidikan Nasional Di Kabupaten Halimahera Selatan. *Khairun Law Review*, 1(1), 51-59.
- Widiastuti, N. L. G. K. (2019). Model Layanan Pendidikan Bagi Anak Berkebutuhan Khusus Yang Mengalami Kecacatan Fisik. *Jurnal Ilmiah Ilmu Sosial*, 5(1), 46–54. <https://doi.org/10.23887/jiis.v5i1.18779>

- Widiastuti, N. L. G. K. (2020). Layanan Pendidikan Anak Berkebutuhan Khusus Dengan Gangguan Emosi Dan Perilaku. *Indonesian Journal Of Educational Research And Review*, 3(2). <https://doi.org/10.23887/ijerr.V3i2.25067>
- Widiyanto, W. E., & Putra, E. G. P. (2021). Pendidikan Jasmani Adaptif di Sekolah Inklusif Bagi Anak Berkebutuhan Khusus. *Sport Science And Education Journal*, 2(2).
- Widyakusuma, R. P. (2021). Sisi Istimewa Anak Berkebutuhan Khusus. *Tarfomedia*, 2(1), 42–44.
- Yufiarti, Yetti, E., Juriana, & Jafar, F. S. (2022). Paud Inklusif Sebagai Implementasi Dari Pendidikan Multikultural. *Jurnal Pendidikan Anak Usia Dini Taman Indonesia*, 1(1).
- Yuwono, I., & Mirnawati. (2021a). *Aksesibilitas Bagi Penyandang Tunanetra I Lingkungan Lahan Basah*. Deepublish.
- Yuwono, I., & Mirnawati, M. (2021b). Strategi Pembelajaran Kreatif Dalam Pendidikan Inklusi Di Jenjang Sekolah Dasar. *Jurnal Basicedu*, 5(4), 2015–2020. <https://doi.org/10.31004/basicedu.V5i4.1108>
- Zaenuri, Z., & Maemonah, M. (2021). Strategi Mnemonic Sebagai Solusi Untuk Pengayaan Kosakata Pada Anak Tunarungu di Sekolah Dasar. *Jurnal Basicedu*, 5(4), 1825–1833. <https://doi.org/10.31004/basicedu.V5i4.1038>
- Zahroh, S., & Umam, S. (2019). Pengembangan Sekolah Inklusi Dan Pengaruhnya Terhadap Strategi Asesmen Anak Difabel. *Al-Athfaal (Jurnal Ilmiah Pendidikan Anak Usia Dini)*, 2(2), 83–99.
- Zilvana Zetta, Z., & Rachim, H. A. (2021). Peran Dukungan Sosial Terhadap Kemampuan Interaksi Sosial Anak Tuna Daksa. *Jurnal Penelitian Dan Pengabdian Kepada Masyarakat (Jppm)*, 2(2), 166–172.