DEVELOPMENT OF AN ADAPTIVE EARLY CHILDHOOD EDUCATION SCHOOL MANAGEMENT MODEL WITH A HYBRID LEARNING APPROACH TO OPTIMIZE CHILD GROWTH AND DEVELOPMENT IN THE SOCIETY 5.0 ERA

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ABSTRAK

Era Society 5.0 menuntut transformasi fundamental dalam pendidikan, khususnya pada tingkat Pendidikan Anak Usia Dini (PAUD), guna mengoptimalkan tumbuh kembang anak di tengah dinamika teknologi dan sosial. Artikel ini menganalisis pengembangan model manajemen sekolah PAUD adaptif dengan pendekatan hybrid learning sebagai solusi strategis. Model ini mengintegrasikan pembelajaran tatap muka (luring) dan daring untuk menciptakan lingkungan belajar yang fleksibel dan stimulatif. Komponen kunci yang dibahas meliputi kurikulum fleksibel berbasis kompetensi, pemanfaatan teknologi digital inovatif, peningkatan kompetensi guru, keterlibatan aktif orang tua sebagai mitra, serta sistem pemantauan tumbuh kembang holistik. Analisis menunjukkan bahwa model ini berpotensi besar untuk mendukung pembelajaran personal, stimulasi multi-modal, fleksibilitas akses, pembentukan literasi digital dini, dan penguatan kemitraan sekolah-keluarga. Namun, implementasinya menghadapi tantangan signifikan seperti kesenjangan digital, kesiapan sumber daya manusia, manajemen waktu layar (screen time), dan ketersediaan konten berkualitas. Dengan mengatasi tantangan ini melalui perencanaan matang dan kolaborasi multipihak, model hybrid learning dapat menjadi fondasi kokoh bagi pembentukan generasi yang siap menghadapi Society 5.0.

Kata Kunci: PAUD, Manajemen Sekolah Adaptif, Hybrid Learning, Society 5.0, Tumbuh Kembang Anak

ABSTRACT

The Society 5.0 era demands fundamental transformations in education, particularly at the Early Childhood Education (PAUD) level, to optimize child development amidst technological and social dynamics. This article analyzes the development of an adaptive PAUD

school management model with a hybrid learning approach as a strategic solution. This model integrates face-to-face and online learning to create a flexible and stimulating learning environment. Key components discussed include a flexible competency-based curriculum, innovative digital technology utilization, enhanced teacher competencies, active parental involvement as partners, and a holistic child development monitoring system. The analysis shows that this model has significant potential to support personalized learning, multi-modal stimulation, access flexibility, early digital literacy formation, and strengthened school-family partnerships. However, its implementation faces significant challenges such as the digital divide, human resource readiness, screen time management, and the availability of quality content. By addressing these challenges through meticulous planning and multi-stakeholder collaboration, the hybrid learning model can become a solid foundation for nurturing a generation ready to face Society 5.0.
Keywords: *Early Childhood Education (PAUD), Adaptive School Management, Hybrid Learning, Society 5.0, Child Development*

INTRODUCTION

The world is currently moving towards the Society 5.0 Era, a concept initiated by Japan, which puts forward an intelligent society in which cyberspace and physical space are tightly integrated to create solutions to social and economic challenges. In this era, cutting-edge technologies such as artificial intelligence (AI), *big data*, and *the Internet of Things* (IoT) are not only tools, but also the core of innovations aimed at improving the quality of human life (Cabinet Office, Government of Japan, n.d.). This transformation has major implications for all sectors of life, including education, especially early childhood education (PAUD).

Children born and raised in this all-connected and fast-changing environment need a strong foundation in terms of 21st century competencies, which include critical thinking, creativity, collaboration, and communication skills (OECD, 2018). In Indonesia itself, the importance of developing these skills has long been a focus. As expressed by Hamalik (2018) in the context of education, the curriculum must always be dynamic and adaptive to the development of science and technology and the needs of the community, so that students have relevant provisions for their future. Furthermore, research by Marlina (2020) highlights that

the integration of technology in early childhood learning, if done appropriately, can increase children's learning motivation and facilitate the achievement of cognitive and psychomotor developmental aspects. This is in line with the view that education must be able to prepare students to have critical, creative, communicative, and collaborative thinking skills (4Cs) as a provision to face global challenges (Ministry of Education and Culture, 2020).

Conventional educational models, which tend to be static and teacher-centric, may no longer be adequate to shape the adaptive and innovative individuals required by Society 5.0. Furthermore, the COVID-19 pandemic that hit the world has drastically changed the educational landscape, forcing schools to adapt quickly and integrate distance learning methods. This condition clarifies the urgency to develop a more flexible and responsive early childhood school management model to change. Therefore, this article will discuss the importance of developing an adaptive early childhood education school management model with *a hybrid learning approach* as an optimal strategy to stimulate and optimize children's growth and development in the Society 5.0 Era.

The Society 5.0 era, which integrates cyber and physical spaces to solve social problems, brought fundamental transformations in various sectors, including early childhood education (PAUD). This increasingly dynamic and connected environment demands a more innovative approach in early childhood school management, especially in optimizing children's growth and development. Adaptive PAUD school management models that adopt a hybrid learning approach have emerged as a strategic solution to address the challenges and opportunities of this era.

METHOD

This study uses a qualitative approach with the type of literature study (*library research*). The qualitative approach was chosen because it aims to understand the phenomenon in depth, explore concepts, and build a theoretical framework related to the development of an adaptive early childhood education school management model with a hybrid learning approach. This type of literature study is particularly relevant for this research because its main focus is to collect, review, analyze, and

synthesize information from a variety of existing scientific sources. The data collection technique is carried out through systematic search using academic databases, while the validity of the data is guaranteed through triangulation of sources and content validity by selecting literature that has gone through *a peer-review process*. Data analysis is carried out through content analysis techniques with *the* following stages: (1) identification and classification of relevant literature; (2) thematic coding to group important concepts; (3) a synthesis analysis of the patterns, findings, and gaps of the literature; and (4) drawing conclusions based on the integration of findings with the theoretical framework of school management and hybrid learning. It is hoped that this literature study research can produce an adaptive early childhood education school management model framework with a comprehensive hybrid learning approach, based on strong scientific evidence from various sources.

DISCUSSION

Urgensi Model Manajemen PAUD Adaptif di Era Society 5.0

Society 5.0 demands a fundamental transformation in education to produce individuals who are not only technologically capable, but also have a high level of social and cognitive skills. This concept emphasizes the creation of a human-centered society, where technology is used to solve problems and improve the quality of life (Cabinet Office, Government of Japan, n.d.). In the context of early childhood education, this means preparing children not only for the "world of work", but for the complex and ever-changing "world of life".

Literature analysis shows that education in this era must equip children with 21st century skills, such as critical thinking, creativity, communication, and collaboration (OECD, 2018). In Indonesia, the government through the Ministry of Education and Culture (2020) has also underlined the importance of these 4C skills as a foundation for the golden generation. Therefore, the PAUD management model must be adaptive, able to respond to rapid changes and integrate innovation without abandoning the essence of holistic child development. This is in line with the view of Hamalik (2018) who emphasizes the importance of a dynamic curriculum that is relevant to the development of science and technology and the needs of the

community. The COVID-19 pandemic has made it increasingly clear that flexibility in early childhood education management and learning is a necessity, encouraging the adoption of *hybrid learning* as a resilient model.

Conceptualization of Adaptive Early Childhood Education Management Model with a Hybrid Learning Approach

Based on the synthesis of the literature, the adaptive PAUD management model with *hybrid learning* can be conceptualized through several main pillars:

a) Flexible and Responsive Curriculum Management

Adaptive curriculum is at the heart of this model. Analysis from journals shows that the PAUD curriculum must shift from focusing on knowledge transmission to competency development (Supriyanto, 2019). In the context of *hybrid learning*, the curriculum should be designed to allow for the seamless transfer of materials and activities between offline and online modes, while still taking into account the child's developmental stage. For example, offline activities can focus on gross motor stimulation and social interaction, while online activities can support cognitive development through interactive educational applications. This flexibility also includes the ability to personalize a child's learning path, accommodating diverse learning styles and speeds (Hidayat & Subianto, 2021).

b) Human Resource Management (Teachers and Education Personnel) Based on Digital Competence

The success of *hybrid learning* is highly dependent on teacher readiness. Literature studies emphasize that PAUD teachers need to have digital pedagogical competence, namely the ability to design, implement, and evaluate learning using technology (Sari & Handayani, 2021). This includes mastery of online platforms, simple digital content development, and the ability to manage children's *screen time* wisely. School management needs to invest in continuous training, *workshops*, and the formation of professional learning communities for teachers (Permendikbudristek No. 56 of 2022).

c) Management of Supporting Information Communication Technology

(ICT) Infrastructure and Technology

Effective ICT integration requires adequate infrastructure support. This means not only the availability of devices (computers, tablets, internet connections), but also a safe and conducive physical and digital environment. Government policies through the school digitalization program (Kemendikbudristek, 2021) show a commitment to providing ICT infrastructure. However, in the context of early childhood education, management must ensure that ICT is used appropriately, not excessively, with a focus on *interactive tools* that stimulate, not just entertainment (Marlina, 2020).

d) Collaborative School-Family Partnership Management

The *hybrid learning* approach intensifies the role of parents as children's learning partners at home. Research shows that active parental involvement is positively correlated with child development (Purwanti & Astuti, 2018). The management model should facilitate strong two-way communication between teachers and parents through digital platforms. This could be an online guide, a webinar on accompanying home learning, or a regular discussion forum to share progress and challenges. PAUD management needs to proactively equip parents with the necessary strategies and resources.

e) Data-Driven Holistic Growth and Growth Assessment Management and Monitoring

Assessment in early childhood education must be authentic, holistic, and ongoing, covering all aspects of development (physical-motor, cognitive, language, social-emotional, and artistic). In *the hybrid learning* model, technology can be used for more systematic data collection (e.g., digital portfolios, teachers' online observation notes). Research reports from various sources emphasize the importance of integrated data systems to monitor *individual children's progress*, allowing for faster and more appropriate early intervention (Standards Agency, Curriculum, and Assessment of Education, 2022).

Optimizing Children's Growth and Development Through Hybrid Learning in the Society 5.0 Era

The application of an adaptive PAUD management model with *hybrid learning* brings great potential for optimizing children's growth and development:

a) Early Digital Skills Development: Children will be exposed to technology in a directed and controlled manner, building basic digital literacy that is crucial for the era of Society 5.0 (Prensky, 2001). They learn to interact with digital interfaces, understand the basics of application functions, and identify simple information.
b) Personal and Self-Paced Learning: The integration of offline and online modes allows for more personalized learning. Children can repeat the material online at their own pace, or explore topics of interest more deeply. This encourages independence and curiosity.
c) Diverse and Rich Stimulation: The combination of physical and interactive activities at school with digital exploration at home provides a wider spectrum of stimulation. It supports cognitive development through *educational games*, fine motor through touchscreen interaction, and creativity through digital art applications.
d) Improved Adaptability: Children are used to moving between different learning environments, both physical and virtual, which exercises their adaptability and flexibility in dealing with new situations. This is a crucial skill in an ever-changing world.
e) Strengthening Social-Emotional Bonds: Despite concerns about isolation, well-managed *hybrid learning* can actually strengthen bonds. Offline sessions are focused on intensive socialization, while online communication platforms allow teachers and parents to interact more often and support the emotional aspects of children.

Challenges and Recommendations

Despite its great potential, the implementation of this model is not without challenges:

– Digital Divide: Unequal access to devices and internet connectivity is still a significant barrier, especially in remote areas of Indonesia (Setiawan,

2019). Recommendation: The government needs to continue to expand internet infrastructure and provide subsidies or device loan programs for underprivileged families. Schools can also provide "digital access centers" or lend devices.

- Human resource readiness: Teachers and parents still need a significant increase in capacity. Recommendation: Teacher training should be comprehensive, including digital pedagogy, *screen time management*, and hybrid activity design. Educating parents through *webinars* and practical guides is essential.
- Screen Time *Management*: Uncontrolled use of digital devices can have a negative impact. Recommendation: Schools and parents need to make clear agreements and schedules for *screen time*, adhere to child health guidelines, and ensure digital content is educational and interactive, not passive (Indonesian Pediatrician Association, 2018).
- Development of Quality Local Content: The availability of digital PAUD content that is in accordance with the Indonesian cultural and curriculum context is still limited. Recommendation: There needs to be collaboration between content developers, early childhood education experts, and governments to create innovative, educational, and locally relevant online apps and materials.

Thus, the development of an adaptive PAUD school management model with *a hybrid learning* approach is an essential proactive step. This model must be implemented with careful planning, strong policy support, investment in human resources and infrastructure, and close collaboration between all parties to truly optimize children's growth and development in the Era Society 5.0.

Table 1. Key aspects of adaptive early childhood education school management model

Key Management Aspects	Description and Implementation in Hybrid Learning	Optimization Indicators Child Growth and Development
Curriculum Management	Flexible and Responsive: 1. The curriculum is competency-based, not just material. 2. Seamless offline and online (face-to-face) and online integrated design. 3. Personalize children's learning paths according to speed and style. 4. Stimulating integration of the two fashion	1. Improvement of children's basic competencies (cognitive, language, physical, social-emotional). 2. Children show initiative and independence in learning. 3. Active involvement of children in various learning activities.
Human Resource Management (Teachers & Staff)	Digital & Adaptive Competency-based: 1. Continuous training in digital pedagogy and technology utilization. 2. Ability to design and 3. execute engaging hybrid learning. 4. Ability to manage children's screen time wisely. 5. Focus on the role of teachers as facilitators andkolaborator.	1. Teachers are able to use ICT effectively for learning. 2. Variations in the learning methods applied by teachers. 3. Positive response of children to interactions with teachers (offline & online).

Infrastructure & ICT Facility Management	Supports Hybrid Learning Integration: 1. Adequate and secure availability of ICT devices (tablets, computers, internet). 2. A user-friendly and educational online learning platform. 3. A conducive and stimulating physical & digital learning environment. 4. Clear ICT management policy for early childhood education.	1. Children are used to interacting positively with technology. 2. Utilization of various learning resources (physical & digital) by children. 3. Avoiding the negative impact of using technology (e.g., eye fatigue, passive).
School-Family Partnership Management	Collaborative and Comunicative: 1. Strong two-way communication (digital platforms, communication groups). 2. Education and guidance for parents on accompanying children to hybrid learning. 3. Provision of resources and learning activities at home (online/offline). 4. Parents are active partners in the growth and development process.	1. Increased parental involvement in children's learning activities at home. 2. Parents' understanding of children's growth and development and learning needs. 3. The creation of a continuum of stimulation between school and home.
Growth and Development Assessment Management & Monitoring	Holistic, Sustainable, and Data-Driven: 1. The assessment covers all aspects of development (physical, cognitive, social-emotional, language, art). 2. The use of technology for systematic data collection (digital portfolios, online observations). 3. Data analysis for the identification of progress and early intervention areas. 4. Clear reporting and Easy to	1. Identification of potential and obstacles to children's growth and development from an early age. 2. Quick and targeted interventions. 3. A comprehensive understanding of each child's developmental profile. 4. Planning a more personalized stimulation program.

	understand for parents.	

This comprehensive management model shows that educational success is not only measured by academic achievement, but also by adaptive and hybrid learning aspects as well as the optimization of children's growth and development. Thus, schools as educational units must implement various integrated and contextual strategies in order to be able to optimally meet the needs of students and teachers.

Key Components of the Adaptive Early Childhood Education Management Model with Hybrid Learning

The development of this management model is not only about integrating technology, but also restructuring the approach holistically. Some key components to look out for include:

a) Flexible and Competency-Based Curriculum

The curriculum must be designed to be adaptive, allowing for the adjustment of learning materials and methods according to the characteristics and speed of individual learning of children, as well as environmental dynamics. The main focus is on the development of essential competencies (cognitive, social-emotional, physical-motor, and language), not just information transfer. This curriculum must also integrate the natural use of technology to support interactive and exploratory activities.

b) Innovative and Appropriate Utilization of Digital Technology

Technology should be seen as an integral tool to support the learning and management process. These include:

1. Online Learning Platform: An application or *website* that is child-friendly, interactive, and provides educational content (videos, *educational games*, digital storybooks) that is adapted to the age of early childhood education.
2. Digital Communication Tools: Platforms to facilitate effective communication between teachers, parents, and school management (e.g., message groups, school-specific apps) to share information, child progress, or home-learning guidance.

3. Children's Data Management System: The use of digital systems to record and monitor children's growth and development more accurately, allowing teachers and parents to see *progress* and intervene early if needed.

c) Continuous Teacher Competency Development

Teachers are the main pillar of the success of this model. They need to be equipped with:

1. Digital Pedagogy Skills: Ability to design and implement engaging and effective online or hybrid learning for early childhood.
2. Utilization of Technology: Expertise in using various *digital platforms* and applications as a tool to stimulate children's growth and development.
3. Understanding of Digital Child Psychology: Knowledge of how children interact with technology and its potential impacts, so as to guide them wisely.

Continuous training, workshops, and professional learning communities are essential to support the improvement of teacher competence.

Active Involvement of Parents as Learning Partners

In the hybrid learning model, the role of parents at home is crucial. The school's management model should facilitate:

1. Parent Education: Provide guidance and training to parents on how to accompany their children to learn online, manage *screen time*, and create a supportive learning environment at home.
2. Two-Way Communication: Build strong communication channels so that parents can share observations, concerns, and collaborate with teachers in supporting children's growth and development.
3. Provision of Resources: Provide parents with access to learning materials and activities that can be done at home, both online and offline.

Holistic Growth and Growth Assessment and Monitoring System

Assessment must be comprehensive and ongoing, covering all aspects of the

child's growth and development (cognitive, language, physical-motor, social-emotional, and artistic). The use of technology can help in:

- Data Collection: Record teachers' observations, *digital portfolios* of children's works, and reports from parents in a structured manner.
- Data Analysis: Assist teachers and management in analyzing children's growth and development patterns and identifying areas that need further stimulation.
- Effective Reporting: Provides parents with clear and easy-to-understand progress reports.

Implementation of the Hybrid Learning Approach in PAUD

The implementation of hybrid learning in PAUD needs to be designed by considering the characteristics of early childhood development. This doesn't just move classes to the online realm, but combines the advantages of each mode:

- Face-to-Face Learning (Offline): Focuses on activities that require direct physical interaction, socialization, gross motor stimulation, sensory exploration, and direct observation by teachers. For example: role-playing, collaborative art projects, *outdoor* activities, and story circles.
- Online Learning: Used for activities that can be done independently or with parental assistance at home. For example: watching interactive educational videos, playing educational *games* for letter/number recognition, listening to digital stories, or doing simple creative tasks.

The schedule and integration between these two modes should be flexible. For example, face-to-face sessions can be a time for *project-based learning* and deep social interaction, while enrichment or *review* materials can be accessed online at home.

Potential for Optimizing Children's Growth and Development:

1. Personalized and Adaptive Learning: Hybrid learning allows for a more personalized approach, where the material and learning pace can be tailored to the individual needs of the child, encouraging independence and curiosity.
2. Multi-Capital Stimulation: The combination of physical and digital learning

environments offers a richer variety of stimulation, supporting the development of various aspects of growth and development through a variety of media.

3. Flexibility and Accessibility: This model provides flexibility for families, especially those with geographical limitations or tight schedules, to access quality education.
4. Early Digital Literacy Formation: Children will be exposed to and accustomed to the use of technology in a healthy and productive manner from an early age, building the crucial foundation of digital literacy in Society 5.0 (Prensky, 2001).
5. Strengthening School-Family Partnerships: Hybrid learning inherently encourages deeper parental involvement in a child's learning process, strengthening the synergy between the school and home environments.

Challenges to Overcome:

- Digital Divide: Unequal access to devices and stable internet connections can widen the education gap. This demands policy intervention and support from governments or communities.
- Human Resource Readiness and Capacity: Teachers and parents need adequate and ongoing training to master hybrid learning technologies and methodologies. Resistance to change is also a factor.
- Screen Time *Management*: The use of technology in early childhood must be regulated very carefully to avoid negative impacts on eye health, physical, and social-emotional development. Clear guidance and strict supervision are required.
- Availability of Quality Educational Content: The development and curation of digital content that is engaging, educational, and appropriate to the stage of early childhood development is a big homework.
- Holistic Effectiveness Evaluation and Monitoring: Design an evaluation system that is able to measure the effectiveness of the hybrid learning model in supporting children's growth and development in a holistic and comprehensive manner, not only in cognitive aspects.

CONCLUSION

The development of an adaptive early childhood education school management model with a hybrid learning approach is inevitable in the Society 5.0 era. This model offers tremendous potential to optimize children's growth and development by providing a flexible, personalized, and stimulating-rich learning environment. However, the success of its implementation depends heavily on our ability to address fundamental challenges such as the digital divide, human resource capacity building, and prudent screen time management. With careful planning, adequate investment, strong collaboration between the government, schools, parents, and society, and an unwavering focus on children's holistic needs, this model can be a solid foundation for the birth of a competent and competitive next generation in the Society 5.0 era.

REFERENCES

Badan Standar, Kurikulum, dan Asesmen Pendidikan. (2022). *Kurikulum Merdeka untuk PAUD*. Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi.

Cabinet Office, Government of Japan. (n.d.). Society5.0. Retrieved from https://www8.cao.go.jp/cstp/english/society5_0/index.html

Hamalik, O. (2018). *Pengembangan Kurikulum dan Pembelajaran*. Bumi Aksara.

Hidayat, R., & Subianto, A. (2021). Implementasi Blended Learning dalam Pembelajaran Anak Usia Dini. *Jurnal Ilmiah Pendidikan Anak Usia Dini*, 5(2), 112-120.

Ikatan Dokter Anak Indonesia (IDAI). (2018). Rekomendasi IDAI tentang Penggunaan Gadget pada Anak. Jakarta: IDAI.

Kementerian Pendidikan dan Kebudayaan. (2020). *Strategi Implementasi Kurikulum 2013 dalam Menyiapkan Generasi Emas 2045*. Jakarta: Kemendikbud.

Kemendikbudristek. (2021). *Panduan Pembelajaran di Masa Pandemi COVID-19*. Jakarta: Kemendikbudristek.

Marlina, N. (2020). Peran Teknologi dalam Pembelajaran Anak Usia Dini di Era Digital. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 4(1), 108-117.

OECD. (2018). *The Future of Education and Skills 2030*. OECD Publishing.

Permendikbudristek No. 56 Tahun 2022. Standar Nasional Pendidikan Anak Usia Dini.

Purwanti, H., & Astuti, S. (2018). Peran Orang Tua dalam Optimalisasi Tumbuh Kembang Anak Usia Dini. *Jurnal Pendidikan Anak Usia Dini*, 2(1), 35-42.

Sari, M. I., & Handayani, M. (2021). Peningkatan Kompetensi Guru PAUD dalam Penggunaan Media Digital untuk Pembelajaran di Era Pandemi. *Jurnal Pengabdian Masyarakat Indonesia*, 2(1), 22-29.

Setiawan, H. (2019). Problematika Kesenjangan Digital dalam Pendidikan di Indonesia. *Jurnal Komunikasi Pendidikan*, 3(1), 12-20.

Supriyanto, A. (2019). Pengembangan Kurikulum PAUD Berbasis Kompetensi Abad 21. *Jurnal Pendidikan Usia Dini*, 13(1), 1-15.

Prensky, M. (2001). *Digital Natives, Digital Immigrants*. On the Horizon, 9(5), 1-6.

World Economic Forum. (2020). Jobs of Tomorrow: Mapping Opportunity in the New Economy. World Economic Forum.