

Coordination Mechanisms and Systems to Enhance Thai Early Childhood Development Management Efficiency

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Abstract

Early childhood development (ECD) is critical for ensuring the long-term well-being and success of individuals and societies. In Thailand, the management of ECD services faces significant challenges due to fragmented coordination and integration across various sectors and agencies. Therefore, this study aimed to enhance the efficiency of Thai early childhood development management (ECDM) by developing coordination mechanisms and systems (CMS). A mixed-methods approach was utilized, involving online structured interviews with six ECDM policymakers, content analysis of the data, and four focus group discussions with ten individuals from various sectors. A draft handbook for CMS was developed through an online connoisseurship seminar, and an opinion questionnaire was collected from 200 executives and practitioners across four Thai regions using Google Forms. The results identified four mechanisms crucial for driving an effective EDCM coordination system: national, provincial, subdistrict, and coordination. These mechanisms comprised an information and communication technology (ICT) system, a management system, a resource management system combined with budget planning, and a supervision, monitoring, and evaluation system. Additionally, three stages of policy recommendations were proposed: urgent, intermediate, and long-term. This research provides a framework for improving ECDM in Thailand, promoting better integration and efficiency in delivering essential early childhood services.

Keywords: *Coordination mechanisms and systems, Early childhood development management efficiency, Education development, Thailand*

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Introduction

Effective management of early childhood education is essential in laying a solid foundation for children's future learning and development (Corpuz et al., 2016; Nguyen et al., 2021; “Problems of Early Childhood Education Management,” 2022). It enables children to acquire the necessary skills and knowledge for their cognitive, emotional, social, and physical growth (Dosman & Andrews, 2012), which are crucial for personal and academic success. Effective early childhood education management ensures children receive the appropriate support and resources to achieve their full potential (World Health Organization, 2020).

Research highlights the critical importance of a child’s formative period in shaping their personality and long-term outcomes (Baker, 2013; Kim, 2021). Consequently, governments must prioritize early childhood education management and provide appropriate guidance for its implementation (Charoenporn, 2023). In Thailand, this priority is reflected in the Constitution of the Kingdom of Thailand B.E. 2560 (2017), which mandates state responsibility for ensuring comprehensive care and development for young children, encompassing physical, emotional, and social growth, and preparing them for age-appropriate education (Shaeffer & Perapate, 2022). The Thai constitution also encourages the participation of local administrative organizations (LAOs) and the private sector in achieving these goals.

The Early Childhood Development Act (ECDA) (2019) underscores the significance of early childhood development education and is a pivotal element of Thailand's Twelfth National Economic and Social Development Plan (Charoenporn, 2023; Office of the National Economic and Social Development Board (2017). The Act ensures that all children in Thailand receive quality care and education from conception to eight years old, a crucial period for brain development and learning.

Early childhood development (ECD) is a sound investment that can reduce inequality and promote social justice. To achieve these goals, a coordinated and integrated ECD system involving communities and families must be established at all levels. This approach ensures that the ECD process is both diversified and unified, resulting in greater effectiveness and efficiency in line with the national plan for education reform.

Despite recognition by various Thai government agencies, including those in education, health, interior, and social services, the services they provide are often disparate and lack coordination, leading to inconsistent and suboptimal outcomes for children (UNICEF, 2020, 2022). Addressing this challenge requires the consolidation of data and services to create a cohesive early childhood development system.

Research indicates that coordination and integration of services are crucial for effective ECD management. Aljabreen (2020) also emphasizes the role of ICT systems in managing and linking ECD data across various sectors. Similarly, Aryani et al. (2020) highlighted the importance of management systems and efficient resource allocation for improving ECD outcomes. Anchunda (2021) and Kanawapee et al. (2022) further support the need for comprehensive inspection and evaluation systems to ensure the quality of ECD services.

Furthermore, Thailand's own National Early Childhood Development Board (NECDB) proposed a plan in 2019 to create a shared data system for ECD, involving the integration of data from four central ministries and related agencies. This integration was expected to facilitate data sharing and policy formulation.

Such strategies are employed in other countries, like Norway, where early intervention and inclusive community efforts are harmonized across different sectors supporting child services (Hansen et al., 2020). The World Health Organization (2020) also outlines four essential elements for improving ECD: responsive caregiving, promotion of early learning, integration of caregiving and nutrition interventions, and support for maternal mental health (Figure 1).

Improving early childhood development in Thailand requires the coordinated efforts of government agencies, private sector entities, and communities (Office of the Public Sector Development Commission, 2019). Key strategies include integrating data systems to enhance information sharing, addressing disparities in healthcare access, increasing knowledge and understanding of ECD, and ensuring equal quality of early childhood education across different regions (Katz et al., 2014; "Social Welfare Policy," 2006). The private sector must also play an active role in ECD management, with big data serving as a tool to enhance effectiveness (Nuankaew et al., 2023). Policies must be translated into action, with integrated committees to avoid resource allocation issues.



Figure 1. Essential elements in improving early childhood development Source: World Health Organization (2020)

Miyake et al. (2021) highlight the importance of parental and teacher involvement in ECD, suggesting that strategies from Japan's ECD system, such as shared communication tools and joint activities, could be beneficial for developing countries. The study also suggests that effective ECD management requires utilizing committees and subcommittees at various administrative levels, a concept supported by research on social engagement and innovation mechanisms in education (Pochanakit et al., 2019; UNECE, 2017; Zhou, 2011).

This study aims to identify the barriers and challenges hindering the effective coordination and integration of ECD services in Thailand and develop coordinated mechanisms and

systems (CMS) to enhance the efficiency of ECD management. By addressing these barriers and leveraging CMS, the study proposes evidence-based policies to improve the quality, accessibility, and inclusivity of ECD services across Thailand. Additionally, the effectiveness of the proposed CMS and policies in improving ECD outcomes, including cognitive, social, emotional, and physical development, will be evaluated. This comprehensive approach targets specific issues in ECD management, offering targeted solutions and thorough evaluation to ensure impactful improvements.

Research Objectives

RO1. To identify the barriers and challenges in early childhood development (ECD) management in Thailand and design a set of Coordination Mechanisms and Systems (CMS) that leverage mixed-methods analysis to improve integration and efficiency.

RO2. To develop evidence-based policy proposals that incorporate the designed CMS, aimed at enhancing the quality, accessibility, and inclusivity of early childhood development services across Thailand.

RO3. To evaluate the impact and effectiveness of the proposed CMS and policies on the cognitive, social, emotional, and physical development outcomes of early childhood development in Thailand using both qualitative and quantitative assessment methods.

Research Questions

RQ1. What barriers and challenges exist in the current ECD management system in Thailand, and how can mixed-methods analysis inform the development of effective Coordination Mechanisms and Systems (CMS) to address these issues?

RQ2. How can the integration of designed CMS into policy frameworks improve the efficiency, quality, and inclusivity of ECD services in Thailand?

RQ3. What are the critical factors that determine the successful implementation and scalability of the proposed CMS and policies across diverse contexts in Thailand?

Methods

Study design

This study employs a mixed-methods approach, combining qualitative and quantitative research methods to investigate the challenges and barriers in Early Childhood Development (ECD) management in Thailand. The primary goal is to develop effective Coordination Mechanisms and Systems (CMS) to enhance ECD management. The study's design is informed by UNESCO's policy framework (2021) and general systems theory, which comprises five components: input, transformation process, output, feedback, and environment. This dual-framework approach allows for a comprehensive exploration of the research questions, ensuring that the findings are both theoretically grounded and practically relevant.

Theoretical framework

The theoretical framework for this research is grounded in systems theory, providing a holistic perspective on understanding and improving ECD management. The systems theory is applied as follows:

1. System Analysis: This stage involves understanding the current state of ECD management by identifying existing inputs, processes, outputs, and feedback mechanisms. The goal is to recognize the barriers and inefficiencies within the system.
2. System Design: Based on the analysis, new processes, policies, and procedures are developed to enhance the efficiency and effectiveness of ECD management.
3. System Verification: The proposed CMS and policy designs are tested for feasibility and practicality through stakeholder engagement and expert feedback.
4. System Evaluation: The impact of the implemented CMS and policies on ECD outcomes is assessed, ensuring continuous improvement through feedback and refinement.

The UNESCO policy framework (2021) provides additional context by emphasizing the importance of coordinated efforts at the national level to ensure equitable access to quality

early childhood education. This policy framework is integrated into the study to align the research objectives with global standards and practices in ECD.

Data collection

The data collection process was methodically organized into two distinct phases: qualitative and quantitative. This clear separation ensures that each phase contributes uniquely to the overall research objectives.

Qualitative data collection

1. Structured Interviews: Structured interviews were conducted with six policymakers from the Ministries of Education, Interior, Social Development and Human Security, and Public Health, as well as an expert in Educational Administration and Early Childhood Education. The structured format ensured that all interviewees were asked the same set of predetermined questions, which focused on identifying existing challenges in ECD management and gathering insights into potential CMS solutions. Examples of questions asked include:

“What are the primary barriers to effective coordination in ECD management across different ministries?”

“How do you perceive the role of CMS in addressing these barriers?”

Structured interviews were chosen over semi-structured interviews to ensure consistency and comparability of responses across all participants. This approach minimized interviewer bias and allowed for direct comparison of responses. The structured format was particularly important for obtaining uniform data from policymakers and experts across various regions and ministries, which was essential for the development and evaluation of the Coordination Mechanisms and Systems (CMS) for Early Childhood Development (ECD) management.

The structured interviews included specific, predefined questions designed to gather detailed insights into the challenges and barriers in ECD management and to explore potential solutions through CMS. Example questions include:

“What are the primary barriers to effective coordination in ECD management across

different ministries?” and “How could the proposed CMS address the challenges identified in the current ECD management system?” These questions ensured that all interviewees provided comparable data, which was critical for the subsequent analysis.

2. Focus group discussions: Four focus groups were held with policymakers, policy supervisors, policy supporters, and practitioners to identify specific barriers and collaboratively develop CMS proposals. Each group discussion followed a structured guide, ensuring consistency across sessions.

3. Connoisseurship seminars: An online seminar involving ten experts, including policymakers and practitioners, was organized to validate the proposed CMS. The seminar provided a platform for in-depth discussion and feedback on the applicability and effectiveness of the CMS.

4. Document analysis: Relevant documents, including policies and guidelines related to ECD, were systematically analyzed. This analysis provided contextual background and informed the development of the CMS and policy proposals.

Quantitative data collection

The questionnaire was developed through a comprehensive process that included a literature review, expert consultation, and pilot testing to ensure its validity and reliability. It aimed to capture the perceptions and opinions of executives and practitioners regarding the proposed Coordination Mechanisms and Systems (CMS) for Early Childhood Development (ECD) management. Key questions included:

“To what extent do you agree that the proposed CMS will improve coordination among ECD stakeholders?” and “What potential barriers do you foresee in the implementation of the proposed CMS?” These questions were structured to provide both quantitative data through Likert scales and qualitative insights through open ended responses.

The structured questionnaire was then distributed to executives and practitioners across Thailand’s North, Northeast, Southern, and Central regions. The questionnaire was designed to quantify perceptions and opinions regarding the proposed CMS and policies. Key areas of focus included the perceived feasibility, potential impact, and challenges associated with the CMS. Google Forms was then used to collect responses which were then analyzed.

Data analysis

The data analysis was conducted separately from data collection, ensuring a clear distinction between the two processes. This approach allowed for a more structured and rigorous analysis.

Qualitative analysis

Thematic analysis was employed to identify patterns and themes from the qualitative data. This analysis involved coding the interview transcripts, focus group discussions, and seminar notes to uncover key themes related to barriers in ECD management and the proposed CMS. These themes were then used to inform the design of the CMS.

Quantitative analysis

Descriptive and inferential statistical methods were applied to the survey data. Descriptive statistics provided a summary of the data, while inferential statistics were used to assess the feasibility and potential impact of the proposed CMS and policies. The analysis aimed to quantify stakeholder perceptions and identify statistically significant factors that could influence the success of the CMS.

Integrative analysis

Finally, findings from both the qualitative and quantitative analyses were integrated to develop a comprehensive understanding of the challenges and opportunities in ECD management. This integrative approach ensured that the proposed solutions were evidence-based, contextually relevant, and aligned with both theoretical and practical considerations.

CMS development and verification

The development of the CMS was a systematic process based on the principles of systems

theory and education management. The process involved:

1. System Analysis: Conducting a thorough analysis of the current ECD management landscape to identify key challenges and opportunities.
2. System Design: Developing CMS and policy proposals based on the analysis findings and stakeholder feedback.
3. System Verification: Gathering feedback through focus groups, interviews, and seminars to verify the feasibility, applicability, and potential impact of the proposed CMS and policies.
4. System Evaluation: Evaluating the effectiveness of the CMS and policies through pilot implementations and quantitative assessments of ECD outcomes.

Informant groups

Informants were selected using purposive sampling and divided into four groups:

1. Group 1: Structured interviews were conducted with six policymakers from key ministries, including the Ministries of Education, Interior, Social Development and Human Security, and Public Health, as well as an expert in Educational Administration and Early Childhood Education. These interviews were crucial in identifying barriers and informing the development of the CMS.
2. Group 2: Forty individuals, including policymakers, policy supervisors, policy supporters, and practitioners, participated in focus group discussions to identify barriers and co-develop CMS proposals.
3. Group 3: Ten experts participated in an online connoisseurship seminar to validate and refine the proposed CMS and policies.
4. Group 4: Regional informants from Thailand's North, Northeast, Southern, and Central regions provided feedback and critiques on the proposed CMS and policy plans.

Research instruments

The following instruments were used to collect data:

1. Structured interviews: Conducted with policymakers and experts to gather in-depth

insights into ECD challenges and solutions. The structured format ensured consistency in the questions asked across all interviews.

2. Focus group discussions: Facilitated discussions with key stakeholders to identify barriers and co-develop CMS proposals.

3. Connoisseurship seminars: Online seminars were conducted to validate and refine the proposed CMS and policies.

4. Questionnaire: A survey distributed to executives and practitioners to quantify perceptions and opinions regarding the proposed CMS and policies.

Research steps

1. Project preparation: A comprehensive literature review was conducted to develop a conceptual framework and research proposals. This step involved identifying key challenges and opportunities in ECD management to inform the development of CMS and policy proposals.

2. Research implementation:

Systems Analysis: Data from interviews, focus groups, and documents were collected and analyzed to identify barriers and develop a theoretical framework.

Systems design: CMS and policy proposals were developed based on analysis findings and stakeholder feedback.

Systems verification: Expert seminars and surveys were conducted to validate and refine the proposed CMS and policies.

Systems evaluation: The impact of the CMS and policies was assessed through pilot implementations and stakeholder feedback.

3. Results report: The research findings were compiled and analyzed, and the final report was prepared. The report was validated through stakeholder engagement and expert review.

Results

The researchers, along with Department of Early Childhood Development executives and

Office of Education Council members, analyzed ECDM CMS efficiency questionnaires and recommended the following:

Identifying critical structures and components of CMS to enhance efficiency in ECD management, including the ECD Policy Committee and six subcommittees at the national level, with two additional subcommittees proposed by the researchers. Coordination mechanisms at the provincial and sub-district levels include the Provincial ECD Committee and Sub-district ECD Committee, respectively.

Identifying new efficient coordination systems, such as an Information technology and Communication System, Management System, Resource Allocation and Budget Planning System, and a Supervision, Monitoring, and Evaluation system, to make ECD management continuous and congruent with four central ministries.

In addition to CMS, the researchers proposed several policy proposals to enhance ECD management in Thailand. These include:

The researchers, Department of Early Childhood Development executives, and Office of Education Council members analyzed and made recommendations from the ECDM CMS efficiency questionnaires. Their analysis identified critical structures and components of the CMS to enhance efficiency in ECD management, including a national-level ECD Policy Committee and subcommittees, provincial and sub-district committees, and efficient coordination systems.

They also proposed policy proposals such as strengthening human resources, developing an integrated early childhood information system, promoting research and development, enforcing child protection laws, improving communication and collaboration among stakeholders, providing support for special needs and underprivileged children, integrating ECD policies with budgets, and establishing a comprehensive monitoring and evaluation system. These proposals aim to enhance ECD management in Thailand at all levels of governance.

Policy proposals

The policy proposals for enhancing efficiency in Early Childhood Development (ECD) management in Thailand are structured into three distinct phases: the Urgent Phase, the

Intermediate Phase, and the Long-Term Phase. Each phase outlines a series of actions designed to improve the coordination and effectiveness of ECD initiatives across the country.

Urgent phase

In the Urgent Phase, four key actions are identified to immediately enhance ECD management. First, obtaining approval from four central ministries and the Thailand Education Deans Council through a memorandum endorsement is essential. This approval will ensure that the proposed policies have the necessary governmental backing to move forward. Secondly, these ministries must collaborate to improve learning management for early childhood, pregnant women, and caregivers, necessitating a new memorandum. This collaboration is vital for creating a unified approach to ECD (Engel et al., 2014; Hansen et al., 2020). Thirdly, the development of a Big Data digital system is proposed, which will enable the efficient gathering and sharing of information about early childhood. This system will facilitate more effective collaboration among the ministries, ensuring that all parties have access to the same information and can work together more cohesively. Lastly, a Royal Decree for the Child Management System (CMS) is proposed, aimed at enhancing ECD management at the ministry, office, provincial, and sub-district levels. This decree will provide a legal framework to support transparent and consistent policy implementation across all levels of government.

Intermediate-phase

In the Intermediate Phase, the proposals expand to include ten specific actions aimed at further refining and enhancing ECD management. The first action focuses on developing mechanisms and systems to raise awareness and understanding of ECD among early childhood educators, pregnant women, and caregivers (Engel et al., 2014; Hansen et al., 2020). The second action involves the creation of efficiency and effectiveness in ECD management, grounded in the principles of the Early Childhood Development Act, B.E. 2562/2019 (ECDA). Budget planning at the provincial and subdistrict levels, managed by the Office of Provincial Education, forms the third key element. This planning is closely tied to

the fourth action, which calls for coordination with the Department of Budget in each province to secure necessary funding for ECD initiatives.

Additional actions include promoting and supporting research, innovation, and best practices for ECD within provinces, as well as fundraising and resource allocation to ensure these initiatives are well-funded and sustainable. To maintain high standards, the development of personnel potential for supervision, monitoring, and maintaining real-time database systems is emphasized. Training programs for teachers and caregivers are also proposed, ensuring they are equipped to effectively use the ECD curriculum and handbook. Furthermore, criteria and qualifications for teachers and caregivers will be aligned with the ECDA (2019) standards. Finally, the phase encourages collaboration with private and public sectors, local governments, and civil society to foster a comprehensive approach to ECD.

Long-term phase

The Long-Term Phase outlines actions that ensure the sustainability and ongoing improvement of ECD management. This phase begins with the creation or amendment of laws necessary to support national policies on ECD, including ECD plans, standards, and the protection of children's rights. Ensuring sustainable and efficient management of budgets for pregnant women and early childhood caregivers by the four central ministries, based on existing laws and regulations, is the second critical action. The third action proposes increasing the involvement of village health volunteers in the care and development of early childhood, in collaboration with central agencies. Lastly, this phase advocates for greater involvement of parents and community representatives in children's education and life skills development, recognizing the vital role that these groups play in a child's early years.

The mechanisms and coordination in ECDM efficiency enhancement

To enhance early childhood development and learning management, mechanisms and coordination are proposed to promote efficiency. The guiding principles include partnership perception, integration, commitment, collaboration, big data, and policy implementation. The coordination system comprises four components: information technology and

communication, management, resource allocation and budget planning, inspection, monitoring, and evaluation. The national-level driving mechanisms for efficient coordination include the Early Childhood Development Policy Committee and several subcommittees, such as Integration, ITC, Research and Learning Management, Laws and Protection of Rights, Communication for Early Childhood Development, Special Needs and Underprivileged, Annual Work Performance and Budget Management, and Inspection, Monitoring, and Evaluation.

Urgent-phase

It is crucial to prioritize developing human and administrative resources for ECD management, as this can help ensure that ECD policies are implemented effectively and efficiently. Collaboration and integration among the four central ministries can also promote cohesive and coordinated efforts toward ECD, essential for achieving national goals related to ECD. Communication tools such as the memorandum endorsement can help increase awareness and understanding of ECD policies and initiatives among the public, contributing to more significant support for ECD efforts. Finally, making ECD a national priority can help ensure that sufficient resources are allocated to support the development of young children and their caregivers, which is crucial for the country's long-term development.

In addition, it is crucial to monitor and evaluate the implementation of ECD policies and programs to ensure their effectiveness and efficiency. The Office of the Education Council and the Ministry of Education should establish a monitoring and evaluation system to assess the progress of ECD programs at the national, provincial, and subdistrict levels (Rukspollmuang & Fry, 2022). The system should include indicators and targets to measure the impact of ECD policies on child development outcomes, such as cognitive, social, emotional, and physical development.

The monitoring and evaluation system should also involve regular reporting and dissemination of information to stakeholders to promote transparency and accountability. It should provide policymakers and program implementers feedback to adjust policies and programs based on evidence-based data.

Finally, it is crucial to establish partnerships and collaborations with various stakeholders

to promote integrated and holistic ECD management. The Office of the Education Council, as the ECD Policy Committee Secretariat, should work closely with relevant government agencies, civil society organizations, academic institutions, and private sector actors to mobilize resources, share knowledge, and coordinate efforts towards ECD goals. These partnerships can contribute to leveraging resources, sharing expertise, and expanding the reach and impact of ECD programs.

The development of big data in ECD management can provide valuable insights into the needs and challenges of early childhood development. It also helps with resource allocation and decision-making, facilitating stakeholder coordination. A digital model connecting to a network covering the coordination of ECD with the four central ministries can help streamline the collection, analysis, and dissemination of ECD-related data, leading to more efficient and effective ECD management in Thailand.

Preparing royal decrees on CMS for ECD management will help provide a legal framework for implementing ECD policies and ensure that all relevant sectors work together effectively. The Office of the Education Council can lead in coordinating with the relevant ministries and agencies to develop these decrees, ensuring they are aligned with the overall ECD plan approved by the Cabinet.

Additionally, stakeholders, including local communities, are essential in developing and implementing ECD policies and programs, which then helps ensure that the policies and programs are culturally appropriate, relevant, and responsive to the needs of local communities.

Overall, a comprehensive and coordinated approach to ECD management is necessary to ensure that young children in Thailand have access to quality care, development, and learning opportunities. This requires collaboration between the public and private sectors, the involvement of local communities, and the development of an extensive data system to support decision-making and monitoring of ECD policies and programs.

The appointment of a subcommittee to manage the annual budget and action plan integration is crucial in ensuring efficient and effective resource management for early childhood development. The subcommittee can work closely with relevant stakeholders to develop practical budget allocation and monitoring approaches, promoting transparency and accountability in ECD management. By prioritizing the appointment of the subcommittee,

Thailand can take significant steps toward promoting the healthy development of young children and supporting their caregivers.

Intermediate-phase

ECD Committees must urgently promote awareness and understanding of ECD, caregiving, and learning management for all involved. Cooperation and integration are essential to implementing ECD policies nationally in Thailand. Effective CMS should be established through monthly online meetings with relevant committees and executives to ensure alignment and goal achievement.

Four ministries will collaborate to establish a network promoting ECD best practices among parents and caregivers. The Early Childhood Development Policy Committee Secretariat (2021) will create a communication system and strategy at the provincial level. The secretariat will also train personnel to maintain accurate and up-to-date information about ECD through database maintenance and development. Agencies at all levels should continuously develop personnel potential to stay up-to-date with changes.

Teachers and caregivers require training to meet the ECD Act's standards and provide high-quality care. Agencies should provide development opportunities to teach ECD principles, curriculum development, and evaluation. Standardized qualifications must be formulated based on the ECDA (2019) to ensure they have the required knowledge and skills.

The ECD Act requires parents and caregivers to be educated in early childhood care and development. Adequate supervision, monitoring, and evaluation are necessary for effective ECD policy implementation. Provincial network building should be promoted to exchange academic learning and technological instruments. Research, innovation, and best practices for ECD should be promoted and supported to align with ECDA (2019) principles and adapt to changing social contexts.

Long-term phase

In the long term, law corrections should align with national ECD policies, plans, standards, and children's rights protection, as stated by the ECDA (2019). Expanding the roles and

responsibilities of village health volunteers can increase the care and development of early childhood (EC) by working closely with parents. The participation of parents and community representatives in EC development, specifically in education and life skills, is encouraged, according to the ECDA (2019). Parents and guardians should provide well-rounded development in various aspects of EC, per individual potential development and special needs principles, to equip EC with essential skills for lifelong learning and growth (Kerdtip & Angkulwattanakit, 2023).

Critical factors to enhance ECD management include: 1) raising awareness and understanding of ECD among central ministries; 2) promoting efficiency and effectiveness in ECD management; 3) creating big data for developing information systems and early childhood databases; 4) promoting collaboration among stakeholders; 5) coordinating budgets with the Budget Bureau and provinces; 6) proposing a Royal Decree on CMS; and 7) proposing law corrections to align with international standards (adapted from Kerdtip & Angkulwattanakit, 2023).

These factors can contribute to Thailand's more effective and efficient ECD management system. By focusing on raising awareness, promoting efficiency and effectiveness, creating valuable data systems, facilitating collaboration, ensuring adequate funding, and aligning national policies with international standards, Thailand can provide a more supportive environment for early childhood development. In doing so, Thailand can improve the quality of life for children and families, promote equitable development, and contribute to sustainable social and economic growth in the long term.

Discussion

The study identified four central ministries and organizations that should use four sub-systems: an ICT system (Aljabreen, 2020), a management system (Aryani et al., 2020), a resource allocation and budget management system, and a manipulation, inspection, and evaluation system to manage early childhood education effectively (Anchunda, 2021; Kanawapee et al., 2022; Phothong et al., 2023). The administrative system should have a national network that efficiently manages and controls administration with budgets allocated

for teacher development. These results are consistent with previous research on systems and mechanisms for supporting parents' and guardians' participation in children's development, which include administrative and quality inspection systems and a system for supporting participation (Office of the Education Council, 2018).

Miyake et al. (2021) found that involving parents, guardians, and teachers was crucial for early childhood development, consistent with Klibthong & Agbenyega's (2020) emphasis on the importance of parents' and guardians' participation in ECD. The study suggested that the Japanese ECD's health promotion approach could be applied to developing countries. It emphasized the need for communication and collaboration between parents, guardians, and teachers through shared notebooks and joint activities such as home visits, sports days, and meetings.

Efficient early childhood education management requires using the nine committees and subcommittees outlined in the ECDA (2019) at national, provincial, and subdistrict levels. These findings align with research on social engagement development in Thailand's higher education and innovation-building mechanisms in China. Every region in China should create a three-year action plan with allocated funds and special funding for disadvantaged children. Developed regions should also offer free education to children from low-income families.

Pochanakit et al.'s (2019) research on social engagement in higher education and UNECE's (United Nations Economic Commission for Europe, 2017) study on building innovation both emphasize the importance of committees and boards in driving successful systems and mechanisms, not just in the public sector, but also in universities and other educational institutions. Zhou (2011) found that regions in China should create a three-year action plan starting with allocating funds using three-year educational budgets. The government and public sector should find special funds for disadvantaged children. Developed regions should also offer free education to children from low-income families, orphans, and children with special needs.

Conclusion

This study offers important insights into developing coordination mechanisms and systems (CMS) that can enhance early childhood development management (ECDM) in Thailand. The research underscores the significance of effective policy formulation, implementation, and system support in ECDM. By establishing a robust CMS, focusing on disadvantaged groups, promoting family involvement, and prioritizing data-driven decision-making, Thailand can enhance the quality, accessibility, and inclusivity of early childhood services, laying a strong foundation for all children's development.

Recommendations

To overcome the identified barriers and improve ECD management efficiency in Thailand, the authors suggest that a unified coordination mechanism be established across all relevant agencies to enhance communication, collaboration, and policy implementation in ECD management. This structured approach will ensure that policies and programs are effectively executed. There should also be a process to prioritize the enhancement of ECD centers and the recruitment of qualified teachers in underserved areas. Special efforts should target children with disabilities, from low-income families, and in remote regions to reduce disparities in educational access and outcomes. Moreover, an effort needs to be made to strengthen family engagement which can be accomplished by providing training and support that empowers families to contribute to their children's development. ECD centers should collaborate closely with families to create individualized development plans, fostering a holistic approach to ECD. Finally, there needs to be development of a comprehensive ECD database and a process to conduct regular evaluations to inform decision-makers. A data-driven approach can help in ensuring program effectiveness measurement which identify areas for improvement, and ensure efficient resource allocation.

Study limitations

This study has several limitations. The focus on senior-level individuals involved in Thailand's early childhood education may not reflect the perspectives of grassroots educators or administrators. Future research could explore these views or conduct similar studies in other Southeast Asian countries. The reliance on self-reported data may introduce social desirability bias, as participants might provide responses that they consider socially acceptable rather than their true opinions.

Authorship

All authors all made a significant contribution to the conception, design, execution, and interpretation of the work.

Ethical guidelines

Before the study's student-teacher, experts, and advisors' participation, the authors sought permission from the authors' Human Research Ethics Committee. After consultation, permission was granted for the study, which was conducted according to the guidelines outlined in the Declaration of Helsinki. Every participant then received a form in which the study's objectives were detailed. Another form that required the individual's signature assured each participant of their privacy rights, identity security, and voluntary research participation.

Conflict of interest

The authors declare that the research had no financial or commercial relationships that could be interpreted as a potential conflict of interest.

References

- Ali, H. A., Shettima, M., & Abba, I. (2022). Verification and validation of school management information system (SMIS) using Blackbox testing approach. *Global Science Journals*, 10(1), 1069–1079. <https://tinyurl.com/4r9k28nk>
- Aljabreen, H. (2020). Montessori, Waldorf, and Reggio Emilia: A comparative analysis of alternative models of early childhood education. *International Journal of Early Childhood*, 52, 337-353. <https://doi.org/10.1007/s13158-020-00277-1>
- Anchunda, H. Y. (2021). A teacher development model based on coaching and Professional Learning Community (PLC) to enhance foreign teachers' effective teaching ability in Thailand. *Kasetsart Journal of Social Sciences*, 42(4), 932-939. <https://tinyurl.com/yry4zve6>
- Aryani, N., Mudjiran, & Rakimahwati. (2020). The learning management model of early childhood education programs is based on children's development. *International Journal of Scientific and Technology Research*, 9(1), 86-91. <https://tinyurl.com/h6r9bape>
- Baker, C. E. (2013). Fathers' and mothers' home literacy involvement and children's cognitive and social-emotional development: Implications for family literacy programs. *Applied Developmental Science*, 17(4), 184-197. <https://doi.org/10.1080/10888691.2013.836034>
- Ballantine, J., & Hammack, F. M. (2015). *The sociology of education: A systematic analysis*. Routledge. <https://tinyurl.com/4pdmvhwe>
- Charoenporn, C. (2023). Human welfare organizational behaviour: a perspective for the early childhood education services. *Corporate Governance and Organizational Behavior Review*, 7(4). <https://doi.org/10.22495/cgobrv7i4sip7>
- Constitution of the Kingdom of Thailand B.E. 2560. (2017). *The Constitution of the Kingdom of Thailand* (Vol. 134). Government Gazette. <https://tinyurl.com/ybarrkw3>
- Corpuz, N. B., Cruz, N. D., Baston, M. A., Del Socorro, D. G. C., & Hidalgo, E. C. M. (2016). Early childhood education: A curriculum review and critical analysis. *International Journal of Sciences: Basic and Applied Research*, 25(2), 337-353. <https://core.ac.uk/download/pdf/249335083.pdf>

- Dennis, A., Wixom, B. H., & Roth, R. M. (2012). *Systems analysis and design* (5th ed.). John Wiley & Sons. <https://tinyurl.com/3a3n5tf2>
- Dosman, C., & Andrews, D. (2012). Anticipatory guidance for cognitive and social-emotional development: Birth to five years. *Paediatrics & Child Health*, 17(2), 75-80. <https://doi.org/10.1093/pch/17.2.75>
- Early Childhood Development Act (ECDA). (2019). The Early Childhood Development Act, B.E. 2562. *Government Gazette*, 136(56), 5-16.
- Early Childhood Development Policy Committee Secretariat. (2021). *Early Childhood Development Plan, 2021-2027*. Office of the Education Council Secretariat.
- Education International ECE Task Force. (2010, June). *Early Childhood Education: A Global Scenario*. <https://tinyurl.com/2dtc4s6f>
- Engel, A., Barnett, W. S., Anders, Y., & Taguma, M. (2014). *Early childhood education and care policy review: Norway*. OECD. <https://tinyurl.com/2a6pn2fs>
- Hansen, I. L. S., Jensen, R. S., & Hansen, H. C. (2020). *Mind the gap! Nordic 0–24 Collaboration on Improved Services to Vulnerable Children and Young People. Final report from the process evaluation*. Fafo. <https://tinyurl.com/4pnvj6ry>
- Harvey, L. (2002). Evaluation for what? *Teaching in Higher Education*, 7(3), 245-263. <https://doi.org/10.1080/13562510220144761>
- Katz, L. G., Chard, S. C., & Kogan, Y. (2014). *Engaging children's minds: The project approach* (3rd ed.). Bloomsbury Publishing. <https://tinyurl.com/3f86bu8p>
- Kerdtip, C., & Angkulwattanakit, R. (2023). Thai School Learning Communities (SLC): An Exploratory Factor Analysis. *Journal of Higher Education Theory and Practice*, 23(1). <https://doi.org/10.33423/jhetp.v23i1.5803>
- Kim, E. (2021). ASEAN early childhood education ‘expert report’. University of Cambridge. <https://tinyurl.com/yc2aweck>
- Klibthong, S., & Agbenyega, J. S. (2020). Inclusive early childhood settings: Analyses of the experiences of Thai early childhood teachers. *International Education Studies*, 13(1), 21. <https://doi.org/10.5539/ies.v13n1p21>
- Miyake, K., Tomokawa, S., & Asakura, T. (2021). Lessons on health promotion from Japanese early childhood development. *Pediatrics International*, 63(1), 22-36. <https://doi.org/https://doi.org/10.1111/ped.14400>

- Navarro, P., Bambling, M., Sheffield, J., & Edirippulige, S. (2019). Exploring young people's perceptions of the effectiveness of text-based online counseling: Mixed methods pilot study. *JMIR Mental Health*, 6(7), 1-15. <https://doi.org/10.2196/13152>
- Nguyen, P. H., Tran, L. M., Khuong, L. Q., Young, M. F., Duong, T. H., Nguyen, H. C., ... & Ramakrishnan, U. (2021). Child linear growth during and after the first 1000 days is positively associated with intellectual functioning and mental health in school-age children in Vietnam. *The Journal of Nutrition*, 151(9), 2816-2824. <https://doi.org/10.1093/jn/nxab182>
- Nuankaew, P., Nasa-Ngium, P., Kunasit, T., & Nuankaew, W. S. (2023). Implementation of data analytics and machine learning in Thailand education sector. *International Journal of Emerging Technologies in Learning*, 18(5). <https://doi.org/10.3991/ijet.v18i05.36871>
- Office of the Education Council. (2018). *Education in Thailand 2018*. Ministry of Education, Thailand. <https://backoffice.onec.go.th/uploads/Book/1676-file.pdf>
- Office of the National Economic and Social Development Board. (2017). *National Economic and Social Development Plan Twelfth Edition 2017-2021*. http://www.nesdb.go.th/ewt_dl_link.php?nid=6422
- Office of the Public Sector Development Commission (OPSD). (2019). *Early Childhood Development Report (in Thai)*. <https://tinyurl.com/mwt6mnyj>
- Pochanakit, P., Samakkhi, P., & Jitpiromsri, S. (2019). The development of the systems and mechanisms on social engagement of the higher education institutes in Southern Border Provinces. *Academic Service Journal*, 30(2), 34-46. <http://dx.doi.org/10.14456/asj-psu.2019.25>
- Problems of Early Childhood Education Management of Local Administrative Organisations. (2022, January 26). *Thailand Ombudsman News*. Office of the Ombudsman, Thailand. <https://tinyurl.com/mszzmwmj>
- Ruksapollmuang, C., & Fry, G. W. (2022). Overview of education in Thailand. In *International Handbook on Education in South East Asia* (pp. 1-31). Springer Nature Singapore. https://doi.org/10.1007/978-981-16-8136-3_24-1
- Shaeffer, S., & Perapate, T. (2022). Early Childhood Education in Thailand. In: Symaco, L.P., Hayden, M. (Eds.), *International Handbook on Education in South East Asia*. Springer International Handbooks of Education. Springer. <https://doi.org/10.1007/978-981-16->

8136-3_22-1

Social Welfare Policy for Children and Women in Thailand. (2006). *The 4th ASEAN & Japan High-Level Officials Meeting on Caring Societies Support to Vulnerable People in Welfare and Medical Services*, 28-31 August 2006, Tokyo, Japan.

<https://tinyurl.com/2wpnd5w8>

Srijundaree, P., Yurayat, P., & Nipanan, P. (2024). Factors influencing acceptance and use of online counseling technology among Thai psychologists and mental health counsellors. *Islamic Guidance and Counseling Journal*, 7(1).

<https://doi.org/10.25217/0020247451200>

Thummaphan, P., & Sripa, K. (2023). The learning city development guideline for promoting lifelong learning in Thailand. *Studies in Continuing Education*, 45(2), 228-247.

<https://doi.org/10.1080/0158037X.2022.2051472>

UNESCO. (2021). *Right from the start: Build inclusive early childhood*.

<https://tinyurl.com/mr27fak7>

UNICEF. (2020). *Build to last : A framework in support of universal quality pre-primary education*. United Nations Children's Fund (UNICEF).

<https://files.eric.ed.gov/fulltext/ED604363.pdf>

UNICEF. (2022). *Thailand Early Childhood Development 2022-2026*.

<https://tinyurl.com/4et6fsxf>

United Nations Economic Commission for Europe. (2017). *Innovation in the Public Sector: Country Experiences and Policy Recommendation*. United Nations.

<http://ir.obihiro.ac.jp/dspace/handle/10322/3933>

Valacich, J. S., & George, J. F. (2017). *Modern systems analysis and design*. Pearson.

<https://tinyurl.com/2ec4dm56>

World Health Organization. (2020). *Improving early childhood development: WHO Guide*.

<https://tinyurl.com/bdenpat6>

Zhou, X. (2011). Early childhood education policy development in China. *International Journal of Child Care and Education Policy*, 5(1), 29-39. <https://doi.org/10.1007/2288-6729-5-1-29>