

Enhancing the Child-Friendly Madrasah Program: Evaluating Implementation and Leveraging Intelligent Systems for Effective Educational Environments

Langgeng Sutopo^{1*}, A. Gani², Muhammad Akmansyah³, Junaidah⁴

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ABSTRACT

The Child-Friendly Madrasah Program aims to establish a safe, clean, healthy, and environmentally conscious learning environment while protecting children from violence, discrimination, and mistreatment. Evaluating program implementation is crucial for ensuring effectiveness. This study explores the implementation of the Child-Friendly Madrasah Program in Elementary Islamic Schools (MIN) across Lampung Province, Indonesia, focusing on leveraging Intelligent Systems to enhance program efficiency and effectiveness. Research objectives include identifying contextual factors, analyzing resource allocation, evaluating methodologies, and assessing program impacts, particularly the role of Intelligent Systems in achieving objectives. Using a mixed-methods exploratory sequential design, this research validates instruments through content validity and correlation tests, ensuring data validity through triangulation techniques. Analysis methods, aligned with the CIPP model evaluation framework, involve qualitative and quantitative approaches. Findings show successful program implementation in Lampung Province, evidenced by evaluation results across CIPP stages. While the Context, Input, Process, and Product stages show satisfactory achievements, there's room for further enhancement. The program achieved a 73% success score, indicating effective implementation. Recommendations emphasize continued support and investment to maximize the program's effectiveness in creating a conducive learning environment and safeguarding children's rights.

Keywords: *Children's Rights, Child-Friendly Madrasah Program, Educational Environment, Implementation Evaluation, Intelligent Systems.*

1. Introduction

Education plays a pivotal role in the development of a nation. In the increasingly complex era of globalization, the challenges faced by the education system are diverse [1], [2]. Education goes beyond the development of intellectual capacities; it shapes character and opens opportunities for sustainable socio-economic growth. Amidst these dynamics, it is crucial for a country like Indonesia to ensure that its education system not only enlightens its children but also creates a safe and supportive environment for their development.

Previous studies indicate that quality education positively impacts various aspects of sustainable development. Increased education contributes positively to sustainable economic growth in Indonesia [3]. Similarly, education plays a crucial role in achieving Sustainable Development Goals (SDGs) in Indonesia, emphasizing that quality education not only imparts knowledge and skills but also fosters the development of moral values and ethics [4], [5].

In Indonesia, the aspiration to create a safe and supportive educational environment for its children is reflected in the government's commitment to build an education system covering the basic rights of every child. Article 29(1) of the Convention on the Rights of the Child and Article 28C of the 1945 Constitution affirm the right of every child to obtain basic needs, education, and the utilization of science and technology for the welfare of society [6], [7].

Despite legislative efforts, such as the enactment of Law No. 23 of 2002 concerning Child Protection, challenges persist, especially concerning violence and exploitation of children in the educational environment. Previous studies highlight the need to integrate legislative approaches comprehensively into the practices and culture of schools [6], [7].

In confronting these complex dynamics, the contribution of intelligent systems in education becomes increasingly important. Intelligent systems can provide innovative solutions to monitor, evaluate, and enhance the education system's effectiveness. Artificial intelligence approaches can be used to identify patterns of violence or potential threats in the educational environment, provide early warnings, and even support decision-making processes to prevent cases of violence.

Madrasah Ramah Anak (Child-Friendly Madrasah - CFM) emerges as a practical solution to address the challenges of violence, exploitation, and lack of access to education in Indonesia. CFM creates a safe and supportive learning environment for children while encouraging the involvement of parents and the community in monitoring and educating children together [8]–[10]. Evaluating the implementation of CFM becomes a strategic step in ensuring its alignment with the evolving dynamics of the increasingly sophisticated education system.

Indonesia hopes to produce an academically intelligent generation with high moral values, independence, and a strong sense of responsibility through inclusive and integrated education. Although challenges such as violence and child exploitation still exist, smart and inclusive approaches, along with readiness to adopt intelligent technologies, can help create a safer and more responsive educational environment for children [11]. Thus, the evaluation of the implementation of CFM and the utilization of intelligent systems in the education context are responses to existing problems and proactive steps in facing the increasingly complex challenges of the future. Overall, empowering education through the integration of values of justice, participation, and sustainability, supported by smart technology, forms a solid foundation for building an inclusive and sustainable future of education in Indonesia.

Despite efforts to improve and protect children from violence and exploitation in the educational environment, there is still a research gap that needs to be addressed. Some identifiable research gaps include a holistic evaluation of Child-Friendly Madrasah (CFM) implementation, particularly in the Lampung Province. Current evaluations often focus on specific aspects without providing a holistic understanding using established models. Therefore, a comprehensive evaluation is needed to gain a profound understanding of the effectiveness of CFM and its impact on students' development.

This research aims to fill this research gap by applying the CIPP (Context, Input, Process, Product) evaluation model to assess the implementation of CFM in the Lampung Province comprehensively. This study will assess the effectiveness of CFM implementation in shaping children's personalities and fostering a positive learning environment. Additionally, the research aims to identify key factors influencing the success of CFM implementation, including communication, school leadership, community involvement, and adherence to program guidelines. Intelligent systems could be integrated to analyze data and provide insights efficiently to enhance the evaluation process.

Intelligent systems, including artificial intelligence and machine learning, can play a crucial role in processing vast amounts of information related to CFM implementation. These systems can assist in identifying patterns, trends, and correlations within the data, offering valuable insights into the program's overall effectiveness. For example, they can analyze survey responses, academic performance records, and behavioral indicators to provide a more nuanced understanding of the impact of CFM on students.

Finally, the research will provide recommendations based on evaluation findings to enhance CFM implementation and improve education quality and child protection in madrasahs. Integrating intelligent systems in the evaluation process can contribute to more informed decision-making, allowing for adaptive strategies that address emerging challenges and foster continuous improvement in child-friendly educational initiatives. The combination of comprehensive evaluation models and intelligent systems reflects a proactive approach to addressing complex issues in the educational landscape.

2. Literature Review

2.1. Implementation of Child-Friendly Madrasah (CFM)

Child-Friendly Madrasah (CFM) initiatives in Indonesia have become increasingly significant in addressing the demand for secure and nurturing learning environments [11], [12]. These initiatives prioritize establishing spaces beyond academic development, aiming to cultivate the holistic growth of children [13]. The CFM framework is anchored in international conventions, particularly the Convention on the Rights of the Child, emphasizing the crucial importance of offering each child an educational experience that is academically enriching but also safe and supportive.

The Convention on the Rights of the Child (CRC), adopted by the United Nations General Assembly in 1989 [14], is a foundational document for CFM initiatives. The CRC outlines the fundamental rights of every child, including the right to education, protection from violence, and the right to participate in decisions that affect them. CFM aligns with the principles of the CRC by translating these rights into actionable measures within the context of madrasahs, Islamic educational institutions.

The overarching goal of CFM initiatives is to transform traditional madrasahs into inclusive, child-centered spaces that prioritize the well-being and development of each student [9], [15]. This involves not only providing quality academic education but also creating an environment that safeguards children from various forms of violence and exploitation. CFM recognizes that education extends beyond textbooks and classrooms; it

encompasses cultivating values, ethics, and a supportive community that fosters the child's overall growth. CFM initiatives typically incorporate multifaceted approaches to achieve their objectives. These approaches often include the active involvement of parents, the community, and madrasah stakeholders. By engaging various stakeholders, CFM aims to create a network of support that enhances the initiative's effectiveness. Additionally, CFM promotes the adoption of innovative teaching methods and integrating technology to enrich the learning experience further and ensure that education is aligned with the evolving needs of the students. The emphasis on child-friendly environments is a proactive response to the challenges faced by children within the traditional educational landscape. Reports of violence, exploitation, and inadequate support systems within educational settings necessitated a paradigm shift toward more inclusive and protective measures. With its focus on child rights, CFM aims to address the existing gaps in the educational system and create a model that can be replicated and adapted across diverse madrasah settings. In conclusion, CFM initiatives in Indonesia represent a concerted effort to restructure madrasahs into environments that prioritize children's rights, safety, and holistic development. By aligning with international conventions and emphasizing a comprehensive approach, CFM seeks to enhance academic learning and create nurturing spaces where children can thrive emotionally, socially, and ethically. The success of CFM initiatives is contingent on the collaboration of various stakeholders and the sustained commitment to fostering a truly child-friendly educational landscape.

2.2. Evaluating the Effectiveness of CFM

The initiatives surrounding Child-Friendly Madrasah (CFM) in Indonesia have garnered significant attention as a strategic response to the pressing need for secure and supportive learning environments. Rooted in international conventions such as the Convention on the Rights of the Child, CFM strongly emphasizes creating spaces that foster academic growth and contribute to children's holistic development [13], [16]. This framework underscores the importance of ensuring every child receives an education within a secure and enriching environment.

Evaluating the effectiveness of CFM implementations involves a nuanced examination of various dimensions [17]. Previous studies [8], [11] have played a pivotal role in unraveling the impact of CFM on students' well-being, academic performance, and social development.

Within such evaluations, a comprehensive approach is typically employed, combining quantitative and qualitative methods to gather diverse data on the multifaceted aspects of CFM effectiveness. The focus extends to several key areas, including the overall well-being of students, the impact on academic performance, and the influence on social development within the CFM framework [17].

The evaluation likely scrutinized the well-being of students by assessing emotional and psychological health, perceptions of safety, and overall satisfaction with the learning environment. Academic performance became a critical facet of evaluation, considering factors such as students' achievements, learning outcomes, and educational experiences within the CFM context. The assessment considered quantitative metrics, like exam scores, and qualitative insights from educators and students.

Moreover, CFM initiatives often aim to enhance social development by creating inclusive and supportive communities within madrasahs. The evaluation likely explored how CFM practices contribute to student's social skills, relationships, and peer collaborative abilities.

Community and stakeholder involvement emerged as integral components in the effectiveness of CFM. The evaluation considered the degree of engagement from parents, the local community, and madrasah stakeholders, recognizing their active participation as a critical factor in the success of CFM implementations. Identifying implementation challenges and success factors was another dimension explored in the evaluation. Understanding the obstacles faced during CFM implementation and recognizing the factors contributing to success provided valuable insights for refining future strategies and interventions.

Additionally, the evaluation addressed the long-term impact of CFM initiatives, assessing whether the observed positive outcomes are sustainable and contribute to the enduring development of students and the madrasah community.

2.3. Challenges and Opportunities in CFM Implementation

Child-Friendly Madrasah (CFM) initiatives aim to create positive learning environments but are not without challenges. These challenges include teacher training, community involvement, and alignment with cultural contexts [8], [18].

Teacher training emerges as a significant hurdle within CFM initiatives, requiring educators to be well-equipped to implement practices effectively. This involves imparting the necessary skills and instilling a deep understanding of the CFM framework. Challenges may arise in providing comprehensive training that addresses the specific needs of madrasah educators in their unique educational context.

Another critical factor influencing CFM implementation is community involvement. For CFM to thrive, active engagement from the community is essential. However, achieving meaningful collaboration can be challenging, requiring careful consideration of the nature of involvement, communication strategies, and addressing potential resistance or misconceptions.

Cultural alignment poses a nuanced challenge in CFM implementation, as its effectiveness is intricately linked to its resonance with the cultural context of the madrasah and the broader community. Striking a balance

between universal principles of child-friendly education and culturally specific needs requires thoughtful navigation.

Moreover, the identified challenges present opportunities for growth and improvement within the CFM framework. Addressing teacher training challenges, for instance, opens avenues for developing tailored professional development programs. This involves collaborative efforts with educational institutions, expert practitioners, and relevant authorities to design targeted training modules.

Community involvement challenges offer opportunities to innovate communication strategies and engagement approaches. Establishing effective communication channels, conducting awareness campaigns, and fostering partnerships with community leaders are potential strategies to enhance community participation in CFM initiatives.

The challenge of cultural alignment underscores the importance of developing culturally responsive CFM practices. This involves consulting local communities, integrating cultural elements into the CFM framework, and fostering a sense of ownership among community members.

In essence, understanding and proactively addressing these challenges is crucial for the sustainable success of CFM in Indonesia. It requires a multifaceted approach involving collaboration among educators, communities, policymakers, and other stakeholders to navigate these challenges effectively. By viewing challenges as opportunities for improvement, the CFM initiative can evolve and adapt to better meet the diverse needs of madrasahs and contribute positively to the educational landscape in Indonesia [19].

2.4. Intelligent Systems in Educational Settings

Integrating intelligent systems, encompassing Artificial Intelligence (AI) and Machine Learning (ML), marks a global transformative trend in educational settings [20]–[22]. These systems have increasingly become instrumental in revolutionizing traditional approaches to monitoring, evaluating, and enhancing the overall effectiveness of educational systems. The application of intelligent systems in education introduces innovative solutions that have the potential to reshape how learning environments operate.

In Indonesia, incorporating intelligent systems in education is an evolving frontier [23], [24]. While the global landscape has witnessed significant strides in leveraging AI and ML for educational purposes, the Indonesian educational sector is still navigating the early stages of adopting these technologies [25], [26]. The implications of integrating intelligent systems in the Indonesian educational context are profound, offering a promising avenue to address multifaceted challenges prevalent in the current system.

One of the primary applications of intelligent systems in education involves monitoring student performance and engagement. AI and ML algorithms can analyze vast datasets to identify patterns, trends, and individual learning preferences. This information can then be utilized to tailor instructional approaches, providing personalized learning experiences for students. By offering adaptive and responsive educational content, intelligent systems contribute to creating more effective and student-centric learning environments.

Evaluation and assessment processes are also areas where intelligent systems demonstrate their efficacy. Automated grading systems powered by AI algorithms can streamline the assessment of student work, providing timely and objective feedback. Additionally, intelligent systems can assist in identifying areas of improvement within the curriculum, helping educators refine their teaching methodologies based on data-driven insights.

Furthermore, the potential of intelligent systems extends to addressing challenges related to resource allocation and administrative efficiency. These systems can optimize the allocation of educational resources, assist in strategic planning, and enhance decision-making processes at both institutional and policy levels.

While integrating intelligent systems holds immense promise, it is crucial to navigate ethical considerations and data privacy concerns and ensure that these technologies align with the cultural and contextual nuances of the Indonesian educational landscape. Collaborative efforts among educators, technologists, policymakers, and stakeholders are essential to harness the full potential of intelligent systems in contributing to the advancement of education in Indonesia. As the implementation of these technologies progresses, ongoing evaluation and adaptation will be key to maximizing their benefits and mitigating potential challenges.

2.5. Synergies and Possibilities

The intersection of Child-Friendly Madrasah (CFM) initiatives with intelligent systems represents a compelling convergence that opens up promising synergies. This amalgamation can revolutionize educational practices within madrasahs, fostering enhanced efficiency, proactive issue identification, and data-driven decision-making to elevate the overall quality of education.

At its core, integrating CFM with intelligent systems offers a multifaceted approach to addressing challenges and optimizing the impact of educational initiatives. The synergy lies in leveraging the strengths of CFM, centered on creating safe and supportive learning environments, and the capabilities of intelligent systems, including Artificial Intelligence (AI) and Machine Learning (ML) [27]–[29].

One notable synergy is the potential for more efficient monitoring of CFM effectiveness. Intelligent systems can systematically collect and analyze data related to various CFM components, such as implementing safety measures, the inclusivity of learning materials, and students' overall well-being. By automating the monitoring process, educators and administrators can gain real-time insights into the strengths and areas needing

improvement within the CFM framework.

Early detection of challenges is another significant benefit arising from this integration. Intelligent systems can proactively identify patterns or issues related to the implementation of CFM, ranging from safety concerns to gaps in educational content. This early detection mechanism allows for timely intervention and corrective measures, preventing potential disruptions to the educational environment.

Moreover, the integration facilitates data-driven decision-making in madrasahs. By harnessing the power of intelligent systems, administrators can make informed decisions based on comprehensive data analyses. This extends beyond monitoring CFM effectiveness to broader aspects of educational management, resource allocation, and strategic planning. The result is a more adaptive and responsive educational system that aligns with the evolving needs of students and the institution.

The possibilities created by integrating CFM with intelligent systems extend beyond mere efficiency gains. This synergy can contribute to a holistic transformation of the madrasah's educational experience, emphasizing continuous improvement, inclusivity, and responsiveness to the dynamic nature of educational challenges.

As this integration unfolds, collaboration among educators, technologists, and policymakers becomes paramount. Establishing clear frameworks and ethical guidelines and ensuring alignment with cultural and contextual nuances will be crucial to successfully navigating the implementation of these synergies. Through collaborative efforts, the integration of CFM and intelligent systems holds the potential to set a new standard for educational practices, fostering environments that are not only child-friendly but also technologically advanced and responsive to the needs of the 21st-century learner.

3. Research Method

The research method intricately crafted for this study serves as a navigational tool through the complexities of evaluating and enhancing the Child-Friendly Madrasah Program, strategically intertwining the integration of Intelligent Systems. Aligned with the overarching objective of refining the program's implementation and amplifying its impact on educational environments, this methodology is a deliberate and systematic approach. The selection of research locations, namely MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro, was methodical, employing a purposive approach based on their active participation in the Child-Friendly Madrasah program. This intentional selection ensures that the research captures insights from institutions deeply immersed in the program.

A mixed-methods exploratory sequential design was deliberately chosen [30], seamlessly intertwining qualitative and quantitative approaches. This methodological choice facilitates a nuanced understanding of the program's intricacies, unfolding in stages that commence with qualitative exploration before progressing into detailed quantitative assessments [31].

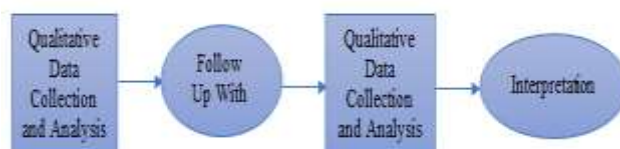


Figure 1. Iterative Process of Qualitative Data Collection, Analysis, and Interpretation

Source: [32]

The research instruments, including observation, interviews, documentation, and questionnaires, were meticulously crafted to align precisely with the study's sub-focus indicators. Collectively, these instruments serve as the lens through which the multifaceted aspects of the Child-Friendly Madrasah program are scrutinized, providing a comprehensive view.

Employing a dual approach to data analysis, qualitative data underwent a meticulous thematic analysis, unraveling patterns and nuances. In contrast, quantitative data underwent statistical scrutiny using descriptive statistics and the advanced SPSS 21 software. This comprehensive analysis ensures a robust and multifaceted interpretation of the collected data.

Expert validation was sought to validate the relevance of instruments. Triangulation techniques, spanning source, method, theory, and time triangulation, fortified the authenticity and reliability of the amassed data, adding layers of credibility to the research findings.

Grounded in the Context, Input, Process, and Product (CIPP) model evaluation framework [33], [34], the research facilitated a holistic assessment of the program's diverse dimensions. This framework provides a structured approach, ensuring a nuanced understanding of the effectiveness of the Child-Friendly Madrasah Program.

Stringent adherence to ethical guidelines was maintained throughout the research process, encompassing informed consent from participants and upholding confidentiality and anonymity in reporting. This ethical foundation is essential for the integrity and reliability of the research outcomes.

The study emphasized the strategic integration of Intelligent Systems in data analysis, program monitoring, and decision-making processes. This integration is poised to harness technology for real-time feedback,

predictive analysis, and continuous improvement of the Child-Friendly Madrasah Program, showcasing a forward-looking and innovative dimension.

Transparent acknowledgment of potential limitations, such as the study's regional focus and the evolving nature of Intelligent Systems, adds a layer of credibility to the research's scope. This transparency underscores the research's integrity and provides context for the interpretation of findings.

This research method is tailored to comprehensively evaluate the Child-Friendly Madrasah Program's implementation, seamlessly intertwining with the strategic integration of Intelligent Systems for a more effective and impactful educational environment.

4. Results and Discussion

Evaluating the Child-Friendly Madrasah (CFM) program at MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro provides insights into their progress and challenges in implementing CFM principles. MIN 6 Bandar Lampung has promoted a conducive learning environment, focusing on cleanliness, health, and safety through integrated CFM posters. Despite achievements, notable areas for improvement include the lack of a formal complaint mechanism and insufficient teacher training in Key Health Areas (KHA) and School Risk Assessment (SRA).

Table 1. Quantitative Context Data Analysis

Context	1	2	3	4	Score Obtained	Maximum Score	Percentage
MIN 6 Bandar Lampung	2	6	15	0	23	40	58%
MIN 1 Pesawaran	0	0	9	28	35	40	88%
MIN 2 Metro	2	8	9	4	23	40	58%

Using the CIPP model, MIN 6 Bandar Lampung scored 58% in the context stage, indicating progress and highlighting areas for targeted interventions. In contrast, MIN 1 Pesawaran excels in CFM implementation, achieving an 88% success score due to practices such as establishing Memorandums of Understanding (MOUs) and comprehensive staff training. However, MIN 2 Metro faces challenges, scoring 58%, indicating the need for focused interventions to enhance program effectiveness.

Despite variations in success scores, all schools have strengths and areas for improvement. The CIPP model offers a structured framework to identify specific focus areas and tailor interventions accordingly, facilitating progress toward creating child-friendly learning environments [34].

MIN 6 Bandar Lampung scored 73% in the program evaluation stage, indicating the need for optimization despite adequate facilities. Conversely, MIN 1 Pesawaran achieved an impressive 88% success score, reflecting its commitment to sustaining success through proactive measures. Meanwhile, MIN 2 Metro scored 58%, signaling the need to address identified shortcomings.

Recommendations for MIN 2 Metro include establishing a formal complaint mechanism, providing teacher training in KHA and SRA, and optimizing facilities to support CFM initiatives. The research method, guided by the CIPP model and integrating Intelligent Systems, ensures a comprehensive understanding and facilitates targeted interventions for continuous improvement in CFM initiatives.

The evaluation of the Child-Friendly Madrasah (CFM) program inputs at MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro provides insights into the commitment and efforts of each institution in creating a child-friendly environment. As documented in the annual report, MIN 6 Bandar Lampung's CFM program encompasses aspects such as cleanliness, health, safety, and a School Health Unit (UKS).

Table 2. Quantitative Input Data Analysis

Context	1	2	3	4	Score Obtained	Maximum Score	Percentage
MIN 6 Bandar Lampung	2	2	12	8	24	36	67%
MIN 1 Pesawaran	0	0	9	24	33	36	92%
MIN 2 Metro	1	4	6	20	31	36	86%

Despite lacking a specialized CFM team, the school adopts a collaborative approach and conducts continuous evaluations, resulting in a commendable score of 67%. This score reflects the school's dedication to fostering a conducive learning environment despite resource limitations.

In contrast, MIN 1 Pesawaran demonstrates a higher level of commitment by gradually implementing CFM with the support of a specialized team and innovative practices. The institution scores an impressive 92%, indicating a comprehensive approach to CFM implementation and a strong emphasis on creating a nurturing environment for students.

Similarly, MIN 2 Metro, despite lacking a dedicated CFM team, emphasizes collaboration and conducts annual CFM initiatives. The institution scores 86%, reflecting a significant effort in aligning with the principles of the CFM program and promoting a child-friendly atmosphere within the school.

Overall, the inputs evaluated across the three institutions demonstrate varying degrees of commitment to the CFM program and align with scholars' perspectives on creating child-friendly learning environments. While

each institution faces unique challenges, its efforts to prioritize cleanliness, health, safety, and collaboration underscore its dedication to supporting students' holistic development and well-being.

Evaluating the Child-Friendly Madrasah (CFM) program implementation at MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro sheds light on the challenges and successes encountered in executing CFM principles within each institution. MIN 6 Bandar Lampung faces obstacles to fully participating in CFM training, which may hinder the school's ability to fully grasp and implement CFM practices.

Table 3. Quantitative Process Data Analysis

Context	1	2	3	4	Score Obtained	Maximum Score	Percentage
MIN 6 Bandar Lampung	1	4	0	0	5	12	42%
MIN 1 Pesawaran	0	0	0	12	12	12	100%
MIN 2 Metro	0	2	0	8	10	12	67%

Despite these challenges, the institution demonstrates commendable efforts in executing cleanliness, health, and security programs, resulting in a score of 42% in the process evaluation. This score highlights MIN 6 Bandar Lampung's commitment to addressing key aspects of the CFM program despite limitations in training participation.

In contrast, MIN 1 Pesawaran emerges as a leader in CFM implementation by actively optimizing resources and engaging in comprehensive CFM training. The institution excels in cleanliness programs, achieving a perfect score of 100%. This remarkable achievement underscores MIN 1 Pesawaran's dedication to upholding CFM principles and ensuring a clean and safe learning environment for its students.

Similarly, MIN 2 Metro successfully implements CFM initiatives with a focus on promoting a violence-free environment within the school. The institution achieves a score of 67% in the process evaluation, reflecting its efforts to align with the principles of a Child-Friendly Madrasah and prioritize the well-being of its students.

The process evaluation serves as a guiding framework for assessing the implementation of CFM programs across the three institutions. It ensures that the execution of CFM practices aligns with the defined standards and objectives of creating a child-friendly learning environment.

Table 4. Product Analysis Results

Context	1	2	3	4	Score Obtained	Maximum Score	Percentage
MIN 6 Bandar Lampung	0	0	18	8	26	32	66%
MIN 1 Pesawaran	0	10	3	8	21	32	81%
MIN 2 Metro	2	8	6	0	16	32	50%

Despite facing challenges, MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro demonstrate varying degrees of success in implementing CFM principles, highlighting the importance of targeted interventions and ongoing support to enhance program effectiveness and sustainability.

The evaluation of the Child-Friendly Madrasah (CFM) program outcomes at MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro offers valuable insights into the effectiveness of these institutions in promoting CFM principles and their impact on student development. Despite facing resource constraints, MIN 6 Bandar Lampung's CFM program is deemed effective, achieving a score of 66%. This score reflects the school's success in promoting honesty, a healthy lifestyle, and cleanliness among its students, highlighting its commitment to instilling positive values despite limited resources.

In comparison, MIN 1 Pesawaran demonstrates commendable outcomes by successfully implementing the CFM program and actively rejecting discrimination and violence. The institution achieves a score of 81%, indicating its strong stance against harmful behaviors and its dedication to creating a safe and inclusive learning environment for all students.

Similarly, MIN 2 Metro, despite facing challenges related to limited facilities, demonstrates effective planning and execution of the CFM program. The institution achieves a score of 50%, reflecting its efforts to overcome obstacles and prioritize the well-being of its students despite resource limitations.

Based on the Context, Input, Process, and Product (CIPP) model, the product evaluations further validate the positive impacts of the CFM programs implemented across the three institutions. MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro receive scores of 73%, 106%, and 80%, respectively, indicating the alignment of their outcomes with CFM principles and their contributions to character development among students.

Overall, the outcomes of the CFM programs at MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro underscore the importance of promoting a child-friendly learning environment and the significant role these institutions play in shaping students' character and fostering their holistic development. Despite various challenges, the institutions demonstrate commendable efforts in implementing CFM principles and achieving positive outcomes, highlighting the potential for further enhancements and continuous improvement in promoting child well-being and holistic development within educational settings.

5. Conclusion

In conclusion, evaluating the Child-Friendly Madrasah (CFM) program across MIN 6 Bandar Lampung, MIN 1 Pesawaran, and MIN 2 Metro provides valuable insights into the strengths and areas for improvement in implementing CFM principles. Despite challenges such as the absence of trained teachers and formal complaint mechanisms, MIN 6 Bandar Lampung has displayed commendable dedication to the program, emphasizing the need for targeted interventions to address these issues. In contrast, MIN 1 Pesawaran stands out for successfully implementing CFM, which is attributed to strategic collaborations and comprehensive teacher training initiatives, highlighting the importance of proactive measures in program success. However, MIN 2 Metro, while showing promise, requires further enhancements to optimize program effectiveness, underscoring the significance of tailored interventions tailored to each institution's specific needs.

Integrating intelligent systems into the evaluation process can provide valuable insights and enhance decision-making. By leveraging data analytics and artificial intelligence, administrators can identify patterns, trends, and areas for improvement more effectively. For instance, intelligent systems can analyze student feedback and performance metrics to identify areas where CFM initiatives are most effective or need improvement. Additionally, these systems can streamline administrative processes, such as managing complaints and tracking program implementation progress, leading to more efficient and effective program management.

In light of the analysis, recommendations for program improvement include prioritizing teacher training programs to ensure educators are equipped with the necessary skills and knowledge to support CFM initiatives effectively. Establishing formal complaint mechanisms can provide students, parents, and staff with a structured platform to address concerns promptly, fostering a supportive and transparent learning environment. Furthermore, fostering a conducive learning environment through cleanliness programs and safety measures is essential for promoting student well-being and holistic development.

Moving forward, school administrators and stakeholders must prioritize these recommendations and integrate intelligent systems into the CFM program evaluation and implementation process. By doing so, they can ensure the successful implementation of CFM principles and the holistic development of students, ultimately contributing to creating child-friendly learning environments in madrasahs.

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Author contributions

Langgeng Sutopo: Conceptualization, Methodology, Software, Field study.

A. Gani: Data curation, Writing-Original draft preparation, Software, Validation, Field study.

Muhammad Akmansyah: Visualization, Investigation, Writing-Reviewing and Editing.

Junaidah: Data collection, Analysis, Writing-Reviewing and Editing.

Conflicts of interest

The authors declare no conflicts of interest.

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