

Evaluation of a Preschool Educational Program Using the CIPP Evaluation Model – A Case Study of the *Éveil et Créativité* Collection within the FMPS Network in Morocco

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Abstract

This study is conducted in the context of Morocco's national ambition to universalize equitable and high-quality preschool education. It provides a holistic evaluation of the *Éveil et Créativité* pedagogical collection, developed and implemented by the Moroccan Foundation for PreSchool (FMPS) for the final year of preschool in its public network. Grounded in the CIPP evaluation model, the study adopts a mixed-methods approach. It combines confirmatory factor analysis (CFA) to validate the evaluation framework and a directed thematic analysis of qualitative feedback from over 10,007 educators. The evaluation covers five key pedagogical dimensions: curriculum alignment, quality of educational resources, child engagement, temporal organization, and openness to innovation. The integrated FMPS model—combining program design, educator training, and operational management—creates a consistent context that strengthens the reliability of the data collected. The findings confirm strong educator support for the program, especially regarding children's engagement, curriculum alignment, and content richness. Participants also highlighted the clarity of the learning sequences and the user-friendliness of the tools provided. Suggestions for improvement focused on time management and the visual quality of printed materials, challenges that were especially evident in rural and multi-grade classrooms. Applied at a national scale, this approach shows how CFA can strengthen the methodological rigor of CIPP-based preschool program evaluations. Overall, the findings demonstrate the solidity of a scientifically grounded, integrated pedagogical system, supported by coherent governance and open to future enhancements.

Keywords: CIPP evaluation model, preschool education, child engagement, curriculum alignment, pedagogical collection, instructional materials

1. Introduction

In Morocco, preschool education is currently recognized as a national strategic priority. It is regarded as a key driver of equity, social justice, and human capital development. This recognition builds on the National Charter for Education and Training (1999), which first introduced the principles of an integrated and high-quality preschool system. The work of the Higher Council for Education, Training, and Scientific Research (CSEFRS), which was legally structured by Law No. 105-12 promulgated in 2014, has further contributed to shaping these directions. It produced opinions and evaluation reports, particularly on the expansion of preschool education and the quality of provision.

The National Preschool Curriculum Framework, published in 2018, formalized the pedagogical foundations of this critical stage. This framework is aligned with the strategic directions outlined in the CSEFRS's 2015–2030 Strategic Vision (2015). The Vision advocates for a preschool system that is universal, integrated, and tailored to the needs of Moroccan children. This momentum was further reinforced by Framework Law 51.17 (2019), considered the main reference for educational governance. It affirms these principles and sets the objective of generalizing access to quality preschool education across the entire national territory.

Since 2018, Morocco has undertaken the generalization of preschool through the National Program 2018–2028, with a rapid progression in enrolment: the rate of 4–5-year-old children increased from 45% in 2017 to 78.7% in

2023–2024 (World Bank, 2024; MENPS, 2024). In its Morocco-focused report, UNESCO (2024) highlights the importance of defining and disseminating educational contents consistent with the national curriculum framework, while the World Bank (2024) stresses the need for quality assurance mechanisms to accompany this expansion. These observations show that the success of this national effort depends not only on widening access but also on ensuring the pedagogical relevance and coherence of classroom resources.

Within this dynamic, the quality of educational programs and the relevance of teaching resources used in preschool classrooms have become essential levers for ensuring the effectiveness of educational practices (Patzak & Zhang, 2025). Well-designed and coherent teaching materials can serve as a key framework for educators. They help structure and organize classroom activities effectively, while also supporting the diverse needs of children based on their age, developmental pace, and socio-cultural context (Devjak et al., 2021). Such materials also support the professionalization of educators by offering a clear framework, concrete instructional guidelines, and a shared basis for curriculum implementation. However, international experiences, particularly in the Brazilian context, show that these pedagogical tools can also create tensions. They may limit pedagogical freedom or impose rigid models that are poorly adapted to local realities (Oliveira, 2021; Parks & Bridges-Rhoads, 2012).

To situate the pedagogical program within its institutional context of development and dissemination, it is important to recall the framework of delegation between the Ministry of National Education, Preschool and Sports (MENPS) and civil society actors, particularly the Moroccan Foundation for PreSchool (FMPS). As part of the national policy to generalize preschool education, it delegated the operational management of a significant part of the public preschool offer to accredited civil society organizations, with the FMPS as the primary partner. This delegation is governed by multi-year agreements and regulations, including Ministerial Decree No. 014.19 (2019), which requires that all pedagogical materials be validated by the Ministry to ensure alignment with the national curriculum framework.

In this collaborative framework, the FMPS goes beyond operational management by articulating its own pedagogical vision, one that aligns with national directives while reflecting a distinctive educational philosophy. This vision is embodied through competency-based frameworks, thematic projects, and activity-centered pedagogical practices. Grounded in a holistic view of child development, the FMPS approach draws on recent research in early childhood education. It emphasizes a balanced integration of the cognitive, physical, linguistic, social, and emotional dimensions of development, viewed as interdependent and fundamental to the child's well-being and flourishing (Kol, 2013). Within this perspective, play, exploration, and hands-on experiences are positioned as core mechanisms of learning, enabling children to construct meaning and develop essential competencies through interaction with their environment (Katz, L.G. & Chard, 2000; Ristanović et al., 2018).

Project-based pedagogy is a core pillar of this approach, as recommended by the Moroccan Preschool Curriculum Framework (2018) and implemented by the FMPS through bilingual thematic projects (Arabic–French). Drawing on constructivist principles, this approach engages children in meaningful problem-solving activities grounded in their lived experiences. These activities are fostered through peer and adult interaction (Krnjaja & Pavlović-Breneselović, 2022; Stojanovic et al., 2021; Stojanović et al., 2023). It promotes essential dispositions such as curiosity, autonomy, cooperation, and creativity, while supporting social integration within an active learning community (Beneke & Ostrosky, 2015; Lev et al., 2022). Within this pedagogical framework, educators act as facilitators who cultivate an emotionally supportive and cognitively rich environment that encourages free expression and sustained engagement (Evtimov & Petrović, 2021). In operationalizing these methodological orientations, the FMPS has developed a pedagogical toolkit structured around thematic projects and supported by adapted tools and diverse instructional materials.

The *Éveil et Créativité* collection, now in its fourth edition, takes the form of a comprehensive and structured pedagogical toolkit specifically designed for children in the final year of preschool within FMPS-affiliated institutions. This toolkit includes a set of educator guides organized around thematic projects; detailing learning sequences aligned with the six developmental domains defined by the national curriculum framework. These guides also contain a child competency framework, a formative assessment protocol, and observation grids designed to monitor each child's progress through a holistic developmental lens. In parallel, each project is accompanied by an individual activity workbook for the child, structured around hands-on tasks that extend classroom learning. These individual materials promote autonomy, concentration, and the gradual acquisition of cognitive and language skills. This aligns with research highlighting the effectiveness of printed learning materials in supporting foundational learning during the preschool years (DeBaryshe, 2023).

A dedicated workbook is also provided for back-to-school activities, aimed at supporting children's gradual

adaptation to the educational environment. This is complemented by a diverse set of didactic materials. These include illustrated storybooks, picture dictionaries, educational posters, and collections of educational songs that can be used at various points throughout the project cycle. Research has shown that music-based resources, when used in a pedagogically intentional and context-sensitive manner, contribute significantly to the development of language, motor coordination, and socio-emotional skills (Álvarez & Rodríguez, 2014). Together, these tools foster a stimulating and coherent learning environment, where materials serve not only as logistical aids but as pedagogical instruments that support verbal expression, symbolic thinking, sensory exploration, and social interaction in an active, contextualized approach to learning. This structuring role of materials is well-documented in the literature, which emphasizes their function as pedagogical mediators, contributors to curriculum alignment, and guides for professional practice in early childhood education settings (Fernández Iglesias & Rodríguez Rodríguez, 2022; Ranta et al., 2023). The National Research Council further underscores that well-organized environments enriched with varied and developmentally appropriate materials significantly enhance children's cognitive, emotional, and linguistic development (Bowman et al., 2001).

Finally, this material diversity also enables educators to diversify pedagogical mediations, strengthen the inclusion of children with specific needs, and adapt their instructional strategies to the dynamics of the group and the learning situations observed. This approach reflects an inclusive vision of education, in which differentiated supports and flexible resources play a crucial role in promoting equity in learning outcomes (Wade et al., 2023).

Evaluating a preschool educational program is not merely a matter of assessing its final outcomes; rather, it constitutes a continuous analytical process that is both decision-oriented and aimed at improving educational quality (Karataş, 2007). More specifically, it involves assessing the extent to which the program meets its pedagogical objectives in both content and implementation (Ertürk, 2013). This process must be carried out in a comprehensive and ongoing manner, particularly because preschool education involves very young children for whom each learning experience can have a significant developmental impact (Sholihah et al., 2020). From this perspective, evaluation requires the formulation of qualitative and/or quantitative judgments based on well-defined criteria, including the relevance of content, its alignment with local needs, and its actual impact on child development (Basaran et al., 2021). In such complex evaluative contexts, mixed-method approaches are especially appropriate, as they enable the triangulation of objective data with the lived experiences of educational stakeholders.

In the scientific literature, several models have been proposed for evaluating educational programs. Tyler's model (2005) is a historical reference, primarily focused on measuring the extent to which predetermined instructional objectives are achieved. While useful, it is limited, especially in early childhood education, because it does not account for contextual factors or implementation processes. Similarly, Kirkpatrick's four-level model, adapted to education by Alsalamah and Callinan (2021), is widely used to assess participants' reactions, learning, behavioral changes, and final results. However, it remains mainly oriented toward expected outcomes and does not provide an in-depth analysis of the conditions or quality of educational processes. Logic models (Coldwell & Maxwell, 2018) offer a linear representation of causal relationships between inputs, activities, outputs, and impacts. Although they facilitate planning, they tend to oversimplify the complexity of educational environments, especially in preschool settings. In light of these limitations, the CIPP model (Stufflebeam & Coryn, 2014) emerges as more appropriate because it enables a holistic, formative, and comprehensive evaluation of preschool programs.

To meet this requirement, the present study adopts the CIPP evaluation model (Stufflebeam & Coryn, 2014), which is widely recognized in the field of educational program evaluation. This model integrates four interdependent components: Context (analysis of needs, intended objectives, and the institutional and educational environment in which the program is situated), Input (resources and implementation conditions), Process (quality of practices and program delivery), and Product (observed results and perceived outcomes). Each of these components serves a distinct function in the monitoring and analysis of educational programs (Fitzpatrick et al., 2022). Rather than aiming to deliver a definitive judgment, the model offers a comprehensive and dynamic framework for understanding the program, identifying its strengths and limitations, and informing pathways for improvement (Basaran et al., 2021).

While the CIPP model is widely regarded for its comprehensiveness, some scholars have noted challenges related to its complexity, its reliance on evaluator judgment, and its potential to overlap with needs assessment processes (Guerra-López, 2008; Iqbal et al., 2021). In early childhood education, its application remains rare, and discussions stress the need to adapt the model to contextual and practical constraints. This study contributes to these debates by applying the CIPP framework in a nationwide preschool evaluation, tailored to the institutional context of the FMPS.

Some researchers, such as Aslan et al. (2016), have developed preschool program evaluation tools based on the CIPP evaluation model from a general or external perspective, the present study adopts an internal, targeted, and

context-specific approach tailored to the FMPS. As a civil society operator employing its own educators, the Foundation benefits from a stable pedagogical organization, a dedicated framework for continuous professional development, and a direct capacity to adjust its implementation strategies. Within this framework, the FMPS-led evaluation primarily aims to analyze the actual use and effectiveness of the fourth edition of the *Éveil et Créativité* collection, as it is experienced and applied daily by senior-year preschool educators working within its network.

This study aims to evaluate the *Éveil et Créativité* pedagogical collection, as implemented in FMPS preschool classrooms, using a mixed-methods approach informed by the CIPP evaluation model. More specifically, it focuses on five key dimensions: (1) the pedagogical alignment of the collection with national preschool guidelines; (2) the quality of its pedagogical content and materials; (3) children's engagement in the proposed activities; (4) the temporal organization of learning sessions and management of school rhythms; and (5) openness to pedagogical innovation, particularly in relation to creative practices and educators' professional autonomy. The evaluation was conducted after one semester of actual use in FMPS classrooms, to capture the program's implementation as it is experienced in real educational settings.

2. Method

2.1 Participants

This study involved a sample of 10,007 preschool educators, covering 42% of the national workforce within the Moroccan Foundation for PreSchool (FMPS). All were teaching in the second year of preschool (Grande Section), with over half (52%) working in multi-grade classrooms. The majority were women ($F = 79.4\%$, $M = 20.6\%$). Regarding the language of instruction, most educators worked in bilingual contexts, with a small minority teaching exclusively in Arabic (3.3%) or in French (2.7%). Most had between one and five years of professional experience. A majority had completed the 950-hour professional training program mandated by the Ministry of National Education, Preschool and Sports (MENPS) and delivered by the FMPS since 2022. Participation in this study was voluntary, with a very high coverage that enhances the robustness of the dataset. Educators were distributed across all regions of Morocco, with the largest proportions coming from Fès–Meknès, Tanger–Tétouan–Al Hoceïma, and Marrakech–Safi. A detailed breakdown of regional distribution is provided in Appendix A.

2.2 Research Procedure

The research process was conducted in two phases. In the first phase, an evaluation framework based on the CIPP model was designed and validated collaboratively by members of the FMPS Research Center and the Pedagogical Production Division. Before nationwide dissemination, the questionnaire was piloted with a small group of five educators to ensure clarity and reliability. It was then converted into an online questionnaire adapted for large-scale distribution. The second phase consisted of nationwide data collection using this digital form, followed by statistical analysis of the responses.

2.3 Instrument of Measurement

The instrument comprised 28 declarative items rated on a 5-point Likert scale (Strongly agree to Strongly disagree) and was structured around five pedagogical dimensions derived from the study's objectives and informed by the CIPP model (Context, Input, Process, Product). These five dimensions map onto the four CIPP components, with Process subdivided into two distinct dimensions. Specifically: (1) Context — alignment with the national curriculum and cultural relevance (Items 1–8); (2) Input — quality of pedagogical resources, including guides and printed materials (Items 9–17); (3) Process — temporal organization of pedagogical activities (Items 23–27); (4) Process — opportunities for pedagogical innovation (Item 28); (5) Product — children's engagement, participation, and autonomy (Items 18–22). For reasons of clarity, the dimension on children's engagement (Product) was presented third in the questionnaire, bridging pedagogical intent and implementation. Each dimension concluded with an open-ended question to collect qualitative feedback; the detailed distribution of items is provided in Appendix B.

2.4 Administration of the Questionnaire

The questionnaire was administered online via Google Forms over a three-week period, following the completion of the first semester of program implementation to ensure adequate exposure to the materials. Invitations were distributed through official FMPS email accounts, detailing the purpose of the study, participation guidelines, and instructions for completion. Access through professional FMPS accounts ensured that only the educators concerned could participate, thereby limiting duplication or external responses. Upon submission, participants automatically received a confirmation and acknowledgment message.

2.5 Data Analysis

Quantitative data were analyzed using JAMOV and AMOS software. This enabled the assessment of psychometric properties (internal consistency, factorial structure), descriptive statistics, and the generation of structural equation models (SEM) for latent dimensions. Qualitative responses were examined through a directed thematic analysis aligned with the five dimensions of the study. To manage the large volume of textual data, AI-assisted tools supported the initial pre-sorting and identification of recurring patterns, with final coding and interpretation conducted by the research team to ensure validity.

3. Results

This section presents the quantitative results of the evaluation, based on statistical analyses of responses collected from FMPS preschool educators. Findings are organized according to the five predefined dimensions of the study, followed by structural modeling to assess the psychometric robustness of the instrument. Qualitative insights will be addressed in the following discussion section.

3.1 Internal Consistency of Dimensions

To assess the psychometric robustness of the dimensions used in this study, internal consistency was evaluated using McDonald's Omega coefficient, which is recognized for its ability to estimate internal reliability without assuming tau-equivalence among items, unlike Cronbach's alpha. The analysis focused on four dimensions composed of multiple items:

- DIM1: Alignment of the collection's components with national pedagogical guide-lines
- DIM2: Quality of pedagogical content and instructional materials
- DIM3: Children's engagement and involvement in learning activities
- DIM4: Temporal organization of pedagogical activities

The results, with all values exceeding 0.83, indicate excellent internal consistency for the corresponding scales. The fifth dimension (DIM5: Openness to pedagogical innovation) was not subject to internal consistency testing, as it was assessed using a single item, which makes reliability estimation inapplicable. Table 1 below presents the Omega coefficients obtained for each dimension.

Table 1. McDonald's Omega Coefficients by Dimension

Dimension	Abbreviated Name	McDonald's Omega (ω) Coefficient
DIM1	Pedagogical Alignment	0,850
DIM2	Content and Resources	0,846
DIM3	Children's Engagement	0,852
DIM4	Temporal Organization	0,832
DIM5	Pedagogical Innovation	--

3.2 Confirmatory Factor Analysis

3.2.1 Statistics and Data Analysis

The confirmatory factor analysis (CFA) was used to estimate the standardized factor loadings of each item on its corresponding latent dimension. All coefficients were positive and statistically significant ($p < .001$), with most exceeding the generally accepted threshold of 0.40, indicating adequate contributions of the items to their respective constructs.

As shown in Table 2, the highest loadings were observed within DIM2 (Quality of Pedagogical Content), particularly for items Q11 (0.781), Q12 (0.778), and Q16 (0.714), reflecting strong internal consistency for this dimension. Similarly, DIM4 (Temporal Organization) demonstrated robust contributions, with estimates ranging from 0.621 to 0.756.

DIM1 (Pedagogical Alignment) and DIM3 (Children's Engagement) also showed statistically significant loadings, although a few were more moderate (e.g., Q2: 0.373; Q18: 0.341). Nonetheless, no item recorded a loading below 0.30, which is considered the minimal acceptable threshold in methodological standards.

Finally, DIM5, composed of a single indicator (Q28), yielded a high and significant factor loading (0.676), which

justifies its inclusion as a stand-alone latent factor.

Table 2. Standardized Factor Loadings

Factor	Indicator	Estimate	Standard Error	Z	p
DIM1	Q1	0,435	0,0066	65,9	< .001
	Q2	0,373	0,0051	73,2	< .001
	Q3	0,419	0,0054	77,5	< .001
	Q4	0,364	0,00634	57,5	< .001
	Q5	0,506	0,00625	81	< .001
	Q6	0,575	0,00732	78,5	< .001
	Q7	0,506	0,00694	72,9	< .001
	Q8	0,496	0,00609	81,6	< .001
DIM2	Q9	0,241	0,00552	43,7	< .001
	Q10	0,574	0,00828	69,3	< .001
	Q11	0,781	0,01252	62,4	< .001
	Q12	0,778	0,01223	63,6	< .001
	Q13	0,513	0,00687	74,6	< .001
	Q14	0,59	0,00865	68,2	< .001
	Q15	0,435	0,00699	62,2	< .001
	Q16	0,714	0,00998	71,5	< .001
	Q17	0,438	0,00584	74,9	< .001
DIM3	Q18	0,341	0,00435	78,4	< .001
	Q19	0,393	0,00492	79,9	< .001
	Q20	0,411	0,00443	92,8	< .001
	Q21	0,384	0,00425	90,4	< .001
	Q22	0,403	0,00462	87,1	< .001
DIM4	Q23	0,628	0,00717	87,6	< .001
	Q24	0,621	0,0068	91,3	< .001
	Q25	0,756	0,01019	74,2	< .001
	Q26	0,624	0,00741	84,2	< .001
	Q27	0,624	0,00794	78,6	< .001
DIM5	Q28	0,676	0,00478	141,5	< .001

3.2.2 Covariances between Latent Factors

The analysis of covariances between latent factors reveals statistically significant and positive relationships among the five dimensions of the model, confirming their partial interdependence in the user experience of the *Éveil et Créativité* collection.

As shown in Table 3, covariance coefficients range from 0.437 (DIM1–DIM5) to 0.733 (DIM1–DIM3), indicating moderate to high levels of correlation, all statistically significant ($p < .001$). The strongest relationships were observed between:

- DIM1 and DIM3 (0.733): highlighting a strong association between pedagogical alignment and children's observed engagement;
- DIM1 and DIM2 (0.708) and DIM2 and DIM4 (0.729): reflecting the perceived coherence between content quality and the temporal organization of activities.

The moderate covariances involving DIM5 are to be expected, as this dimension is measured by a single item (Q28), unlike the other dimensions, which are composite latent constructs based on multiple indicators.

These findings support the relevance of an integrated multidimensional model in which the various components of the collection interact in complementary ways to enhance pedagogical quality.

Table 3. Covariances between Latent Factors

	Estimate	Standard Error	Z	p
DIM1–DIM2	0,708	0,00669	105,9	< .001
DIM1–DIM3	0,733	0,00619	118,3	< .001
DIM1–DIM4	0,652	0,00731	89,2	< .001
DIM1–DIM5	0,437	0,00878	49,8	< .001
DIM2–DIM3	0,639	0,00774	82,5	< .001
DIM2–DIM4	0,729	0,0064	113,9	< .001
DIM2–DIM5	0,452	0,00875	51,7	< .001
DIM3–DIM4	0,587	0,00811	72,3	< .001
DIM3–DIM5	0,465	0,00854	54,4	< .001
DIM4–DIM5	0,514	0,00811	63,4	< .001

3.2.3 Residual Covariances

The analysis of residual covariances helps identify potential redundancies between items within the same dimension, or effects related to similar wording. As shown in Table 4, all residual covariances are significantly different from zero ($p < .001$), indicating a certain degree of overlap among the measurement errors associated with the indicators.

Some items, particularly Q11, Q12, Q16, and Q25, display relatively high residual covariances (above 0.30), suggesting partial redundancy or similarities in phrasing among those indicators.

While this does not undermine their informational value, these items warrant particular attention in future structural analyses, in order to optimize the overall model fit.

Table 4. Residual Covariances

Item	Estimate	SE	Z	p	Item	Estimate	SE	Z	p
Q1	0,3009	0,0046	65,5	< .001	Q15	0,3365	0,00519	64,8	< .001
Q2	0,1657	0,00262	63,3	< .001	Q16	0,6146	0,01007	61,7	< .001
Q3	0,1773	0,00266	62,1	< .001	Q17	0,2017	0,00339	59,4	< .001
Q4	0,2971	0,00444	67	< .001	Q18	0,1137	0,00185	61,6	< .001
Q5	0,229	0,00373	61,3	< .001	Q19	0,1425	0,00234	61	< .001
Q6	0,3222	0,00521	61,8	< .001	Q20	0,0941	0,00172	54,8	< .001
Q7	0,3094	0,00487	63,5	< .001	Q21	0,0908	0,00161	56,2	< .001
Q8	0,2946	0,00485	60,5	< .001	Q22	0,1133	0,00193	58,6	< .001
Q9	0,2369	0,00348	68,1	< .001	Q23	0,2594	0,00452	54,7	< .001
Q10	0,4511	0,00707	63,8	< .001	Q24	0,2183	0,00396	52,2	< .001
Q11	0,9761	0,01613	60,5	< .001	Q25	0,6394	0,00526	64,3	< .001
Q12	0,923	0,01557	59,6	< .001	Q26	0,2696	0,00516	57,6	< .001
Q13	0,2822	0,00471	60,4	< .001	Q27	0,3691	0,00613	60,2	< .001
Q14	0,4926	0,00774	63,6	< .001	Q28	0	0		

3.2.4 Global Model Fit

Evaluating the global model fit represents a critical step in our approach, aimed at building a holistic and scientifically valid understanding of educators' perceptions of the *Éveil et Créativité* collection. This analysis goes beyond a simple descriptive verification of scores and seeks to model the structural relationships between the different dimensions of the program, in line with both evaluative and scientific objectives. The goal is to ensure a well-fitting, reliable model that can meaningfully contribute to research in early childhood education.

The initial model, which included all 28 items, showed acceptable but improvable fit indices, with a CFI of 0.851, TLI of 0.835, and RMSEA of 0.0785. Although the chi-square test was significant ($p < .001$), this result was expected given the large sample size ($N = 10,007$). Adjusted indices were therefore prioritized to assess model

qual-ity more reliably.

To improve the model, several alternative configurations were tested based on the residual covariances identified earlier. In particular, items Q11 and Q12 were closely examined due to their exceptionally high residual covariance, which pointed to a degree of statistical redundancy. Removing either or both of these items led to a substantial improvement in global fit indices.

Among the tested variations, the removal of Q12 (The print quality of the guide facilitates reading and use) was deemed the most appropriate. Although Q11 (The educator's guide is easy to use, with a clear layout, text and colors) and Q12 are closely related in phrasing, they capture slightly different aspects of educators' perceptions: Q11 emphasizes usability and ergonomics, while Q12 reflects material considerations.

The decision to retain Q11 was based on several factors:

- Statistical: Its retention led to a notable improvement in model fit (CFI, TLI, RMSEA);
- Conceptual: Q11 covers a broader, more pedagogically grounded dimension of educator experience;
- Structural: Keeping Q11 preserves the thematic diversity of the dimension without distorting construct representation.

This choice is therefore supported by methodological, theoretical, and practical considerations, all aimed at preserving the coherence and stability of the model. The tested adjustments are presented in Table 5 below.

Table 5. Model Fit Adjustments Tested

Item(s) Removed	CFI	TLI	RMSEA	Conclusion
None (initial model)	0.851	0.835	0.0785	Poor fit
Q11 removed	0.913	0.903	0.0593	Good fit
Q12 removed	0.913	0.903	0.0591	Good fit
Q11 and Q12 removed	0.933	0.925	0.0529	Very good fit

3.2.5 Structural Equation Model (AMOS Diagram)

The final structural model (see Figure 1) is based on a four-factor configuration consisting of the following latent dimensions:

- DIM1: Alignment of the collection's components with national pedagogical guidelines
- DIM2: Quality of pedagogical content and instructional materials
- DIM3: Children's engagement and involvement in learning activities
- DIM4: Temporal organization of pedagogical activities

An initial fifth dimension (DIM5) relating to openness to pedagogical innovation was included, represented by a single item (Q28). However, confirmatory analysis tools (AMOS and JASP) do not allow for the estimation of latent factors with only one indicator. As a result, this dimension was excluded from the final model. This methodological choice ensures model identifiability and adheres to the rigorous standards of structural validation.

The final model shows a clear and coherent structure, with all factor loadings positive, statistically significant, and above 0.50, except for one item (Q9 = 0.48), which remains near the acceptable threshold. The correlations among the latent dimensions confirm the interdependence of the program components, as previously shown in Table 3.

Fit indices for the final model are satisfactory, with RMSEA = 0.061 (90% CI [0.060; 0.062]), CFI = 0.912, TLI = 0.902, IFI = 0.912, and NFI = 0.910. In addition, absolute fit indices report RMR = 0.035 and GFI = 0.905.

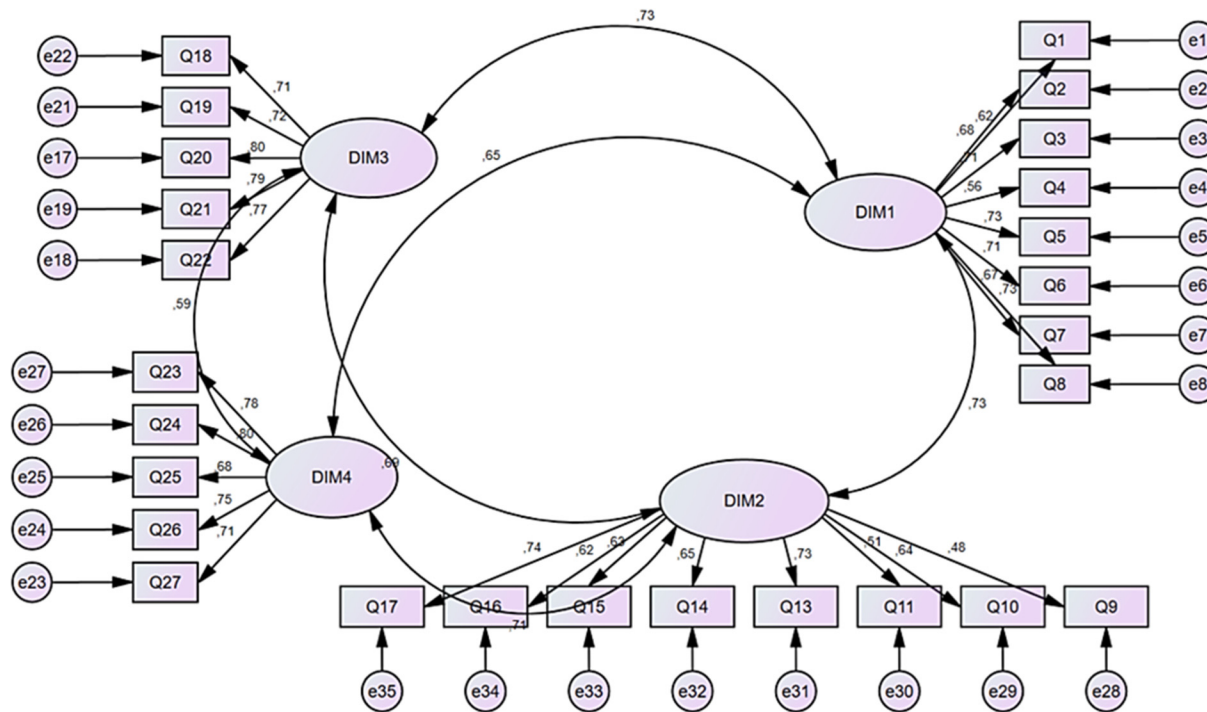


Figure 1. Four-Factor Confirmatory Measurement Model of the *Éveil et Créativité* Collection

3.3 Descriptive Statistics

To complement the structural analysis, descriptive statistics related to the five dimensions were examined and are presented in Table 6. This descriptive overview provides insight into educators' overall perceptions through mean scores, dispersion indices, and distributional characteristics for each dimension of the program.

Table 6. Descriptive Statistics of the Dimensions

Dimension	N	Mean	Median	SD	Variance	Range	Min	Max	Skewness	Skewness SE	Kurtosis	Kurtosis SE
DIM1	10007	31,37	32	3,939	15,518	32	8	40	-1,025	0,0245	3,539	0,049
DIM2	10007	32,26	32	5,544	30,735	36	9	45	-0,359	0,0245	0,669	0,049
DIM3	10007	20,31	20	2,07	4,285	20	5	25	-0,427	0,0245	5,69	0,049
DIM4	10007	18,01	19	3,522	12,407	20	5	25	-0,928	0,0245	1,101	0,049
DIM5	10007	3,87	4	0,676	0,457	4	1	5	-1,542	0,0245	3,798	0,049

3.3.1 Analysis of Dimension 1 (Alignment with Pedagogical Guidelines)

DIM1 recorded a mean score of 31.37 and a median of 32, out of a maximum possible score of 40. This relatively high level suggests a generally positive evaluation by educators, indicating that the components of the collection are broadly perceived as being well aligned with the pedagogical orientations of the national preschool curriculum.

The standard deviation was 3.94, with a variance of 15.52, reflecting a moderate spread of responses around the mean. This indicates a degree of variability in perceptions, but not to an excessive extent.

In terms of distribution, the skewness coefficient was -1.025 , indicating slight negative skewness: a small number of respondents gave relatively low scores, while the majority leaned toward higher evaluations. The kurtosis value of 3.539 suggests a slight concentration of responses around the mean, with relatively little dispersion.

In summary, Dimension 1 received a favorable evaluation from educators, with high average scores and sufficient consistency to consider this dimension as being strongly and clearly perceived within the program.

3.3.2 Analysis of Dimension 2 (Quality of Content and Pedagogical Resources)

DIM2 showed a mean score of 32.26 and a median of 32, out of a maximum possible score of 45. This confirms a generally positive evaluation regarding the quality of pedagogical content and associated resources. Notably, this is the highest mean score among the five dimensions, indicating a strong recognition of the perceived quality of the provided materials.

However, the standard deviation was 5.54, with a variance of 30.73, the highest dispersion observed across all dimensions. This suggests that although the average perception is favorable, educators' responses were more heterogeneous, with greater variation in evaluations.

The skewness coefficient was -0.359 , reflecting slight negative skewness, though less pronounced than in DIM1. The distribution is thus relatively symmetric. The kurtosis value of 0.669 suggests a slightly flatter distribution, indicating that responses were moderately spread around the mean.

In summary, Dimension 2 received very favorable evaluations, though the wider dispersion of responses may reflect variability in educators' experiences across different settings or with different materials.

3.3.3 Analysis of Dimension 3 (Children's Engagement and Involvement)

DIM3 recorded a mean score of 20.31 and a median of 20, out of a maximum score of 25. This high average reflects a very favorable evaluation of children's engagement in the activities proposed by the collection. It indicates a clear recognition of the collection's positive pedagogical impact on children's participation.

The standard deviation was 2.07, with a variance of 4.29, the lowest dispersion among all five dimensions. This low variability suggests a strong consensus among respondents, with very few diverging opinions regarding this aspect.

The skewness coefficient was -0.427 , indicating slight negative skewness, which aligns with the general trend toward high scores. The kurtosis value was 5.690, the highest in the dataset, suggesting a highly peaked distribution around the mean with very few outliers.

In summary, Dimension 3 is not only evaluated very positively but also shows strong consensus, which reinforces the reliability of its interpretation. Children's engagement is perceived as a stable and consistent strength of the collection.

3.3.4 Analysis of Dimension 4 (Temporal Organization of Pedagogical Activities)

DIM4 recorded a mean score of 18.01 and a median of 19, out of a maximum possible score of 25, making it the lowest-rated of the four core dimensions in the model. While the evaluations remain generally positive, this result suggests that the temporal organization of pedagogical activities raises more reservations among educators compared to other dimensions.

The standard deviation was 3.52, with a variance of 12.41, indicating a moderate level of dispersion, slightly higher than that of DIM3, but lower than DIM2. This suggests a diversity of opinions, though without extreme divergence.

The skewness coefficient was -0.928 , pointing to a noticeable negative skew, which reflects a general tendency toward higher scores, despite the lower mean. The kurtosis value of 1.101 indicates a somewhat flattened distribution, suggesting that responses are fairly dispersed but without extreme values.

In summary, Dimension 4 is still evaluated positively, but with more moderate and less unanimous scores. This makes it a potential area for improvement in the temporal structuring of pedagogical sequences.

3.3.5 Analysis of Dimension 5 (Openness to Pedagogical Innovation)

DIM5, represented by the single item Q28, recorded a mean score of 3.87 and a median of 4, out of a maximum of 5. This reflects a generally positive appreciation of openness to pedagogical innovation.

The standard deviation was 0.676, with a variance of 0.457, indicating relatively low dispersion, an expected outcome given that the dimension is based on a single item. The skewness coefficient was -1.542 , pointing to a marked leftward skew: the majority of respondents gave high scores. The kurtosis value of 3.798 suggests a distribution that is relatively concentrated around the most positive values.

Although this dimension was not included in the confirmatory model due to its single-item structure, the descriptive results reveal strong educator support for the program's innovative aspect, positioning this criterion as a potential lever for future enhancement and valorization of the collection.

3.3.6 Comparative Synthesis of the Five Dimensions

The cross-dimensional descriptive analysis reveals distinct trends in educators' overall perceptions of the *Éveil et Créativité* collection.

The highest-rated dimension was DIM3 (Children's Engagement and Involvement), with a high average score (20.31/25) and the lowest level of dispersion ($SD = 2.07$), reflecting strong consensus and near-unanimous educator support regarding the program's impact on children's active participation.

It was closely followed by DIM2 (Quality of Content and Pedagogical Resources), which received the highest raw mean score (32.26/45). However, this dimension also exhibited the greatest variability ($SD = 5.54$), suggesting more divergent assessments depending on context. Notably, three items from this dimension (Q11, Q12, and Q16) displayed residual covariances greater than 0.30. While this does not compromise their contribution to the model, especially given their high factor loadings, it does point to material-related aspects of the collection (e.g., guide readability, print quality, and visual appeal) that may require revision.

DIM1 (Alignment with Pedagogical Guidelines) also received a highly favorable evaluation (mean = 31.37/40), marked by strong negative skewness, indicating that most educators gave high scores despite moderate dispersion.

In contrast, DIM4 (Temporal Organization of Pedagogical Activities) emerged as the lowest-rated dimension (mean = 18.01/25), with more moderate scores and intermediate dispersion. This finding is reinforced by two key observations:

- First, item Q25, which belongs to this dimension, was among the four items with residual covariances above 0.30, indicating a potential point of tension in the organization of the collection.
- More critically, 35.3% of educators reported through Q25 that the temporal structure of thematic projects does not allow for effective implementation, highlighting a need for targeted attention to this operational aspect.

Finally, although DIM5 (Openness to Pedagogical Innovation) was excluded from the confirmatory model due to its single-item structure, its high score (mean = 3.87/5), strong negative skewness, and concentrated distribution around positive values demonstrate a clear recognition of the collection's innovative value.

3.4 Differential Analysis by Educator Characteristics

A series of independent samples t-tests were conducted to examine the effect of educators' training (950 hours) on the various dimensions of the study. Only DIM5 showed a statistically significant difference between the two groups ($p < .001$); however, this result was based on a violation of the homogeneity of variances assumption (significant Levene's test), and the effect size was very small ($d = 0.08$), making the result inconclusive from a practical standpoint.

Gender-based differences between male and female educators were found to be statistically significant across all dimensions. However, only DIM2 (Quality of Pedagogical Content) yielded a small yet interpretable effect ($d = 0.2255$, $p < .001$) with homogeneous variances between groups. This result is reported for information purposes only and does not carry direct pedagogical implications.

No statistically significant differences were observed based on educators' years of experience within FMPS, regardless of the dimension analyzed.

4. Discussion

The findings indicate that FMPS educators hold a generally positive perception of the *Éveil et Créativité* collection, while also identifying certain areas that require pedagogical and organizational adjustments. This section integrates quantitative and qualitative evidence and places the results within the broader literature on preschool program evaluation, with particular attention to studies using the CIPP framework.

Although the present evaluation is informed by the CIPP model, the institutional context of the FMPS necessitates a distinct interpretive lens. Unlike fragmented systems, the Foundation not only designs the pedagogical collection but also provides training and directly manages preschool units. These stable and centralized features create a unique environment, which justifies a focus on educators' perceptions as direct users of the collection and its associated practices.

4.1 Qualitative Analysis of Educators' Open-Ended Responses

To complement the quantitative findings, an in-depth qualitative analysis was conducted based on educators'

open-ended responses. Using a directed thematic approach, the data were coded according to the five dimensions of the study as well as reported strengths and areas for improvement. After cleaning the data by removing duplicates and irrelevant entries, the responses were categorized and synthesized thematically. This process allowed for the identification of common themes, divergences, and practical suggestions. Representative excerpts (verbatim) were included to illustrate each theme. The qualitative results are summarized in Table 7 and serve as a basis for cross-analysis with the quantitative findings to better contextualize educators' perceptions.

Table 7. Summary of Qualitative Data by Dimension

Dimension	Raw Responses	Cleaned Responses	Responses Retained	Number of Themes	Illustrative verbatims
DIM1	1300	1052	100	6	3
DIM2	3890	3730	150	4	3
DIM3	790	531	120	3	3
DIM4	2251	2039	130	3	3
DIM5	785	524	80	3	3
Strengths	7579	7186	100	3	2
Areas for Improvement	7390	5609	110	3	2

4.2 Cross-Analysis with Quantitative Findings

The cross-analysis underscores the methodological value of integrating quantitative and qualitative strands. While statistical results establish broad patterns in educators' perceptions, qualitative evidence enriches and nuances these findings by providing concrete, field-based insights into how the program is experienced in practice. This layered perspective strengthens the explanatory power of the evaluation and shows the importance of mixed-method designs in large-scale program research.

Regarding the alignment of the collection's components with pedagogical guidelines (DIM1), feedback was generally positive, highlighting the coherence of the content with key areas of child development, namely cognitive, affective, social, and motor domains. However, the highest-rated dimension was related to children's engagement and participation (DIM3), which showed strong consistency across responses. Qualitative feedback confirmed this trend: educators often described children as more curious, autonomous, and actively engaged in classroom activities. These perceptions suggest that the *Éveil et Créativité* collection promotes active learning by combining a structured pedagogical framework with opportunities for autonomy. This interpretation aligns with Basaran et al. (2021), who found that engagement in early childhood education improves when activity-based methods allow room for self-directed participation. The convergence between our findings and those reported in the literature indicates that similar mechanisms are likely to be at play in the Moroccan preschool context, thereby reinforcing the broader relevance of project-based approaches for promoting meaningful participation.

Educators' comments also reflect a strong appreciation for the diversity and overall quality of the pedagogical resources (DIM2). The availability of accessible and varied materials was frequently described as a condition for the effective implementation of project-based and active learning approaches, consistent with the findings of Stojanović et al. (2023). At the same time, several resources were the subject of recurring criticisms, particularly concerning the readability of the guide, the use of low-contrast colors, and the overall print quality. These concerns show that material design is not just a technical detail but a factor that directly affects educators' ability to apply the curriculum in practice. This interpretation is reinforced by the quantitative analysis: The high residual covariances for items Q11, Q12, and Q16 reveal overlapping weaknesses in design and readability, confirming the need for targeted revisions. Similar issues are discussed in the literature, which emphasizes that clear, structured, and visually accessible didactic resources are indispensable for successful classroom implementation, especially for less experienced teachers. In this sense, the convergence between qualitative feedback and statistical anomalies demonstrates how educators' perceptions translate into measurable patterns, highlighting the centrality of resource design in shaping the program's effectiveness.

The temporal organization of learning activities (DIM4) received more moderate ratings, with considerable variability across responses. Educators frequently reported difficulties in following the proposed schedule, particularly in multi-grade and rural classrooms. These challenges show that time allocation depends not only on planning but also on structural constraints such as class composition and teaching conditions. Similar difficulties

have been emphasized by Kubanç (2014) and Aslan & Uygun (2019), who observed that rigid timetables often hinder the implementation of preschool programs in complex teaching environments. The convergence between our results and those reported in the literature suggests that, even within a standardized FMPS program, a flexible temporal framework is essential to accommodate diverse classroom realities.

Although pedagogical innovation (DIM5) was measured through a single item and therefore excluded from the final structural model, it emerged repeatedly in the qualitative feedback. Many educators emphasized that the collection offers them genuine opportunities for pedagogical innovation. At the same time, open-ended responses revealed recurring concerns about time pressure, with several educators highlighting the imbalance between the breadth of the program workload and the limited hours available. Although time constraints were also noted in relation to DIM4, here they were specifically linked to educators' ability to introduce and sustain innovative practices. This ambivalence reflects a well-documented distinction between compliance and intrinsic motivation: as Deci and Ryan (2000) explained, external expectations may secure formal adherence without generating authentic engagement. Vojáčková (2020) similarly observed that sustained involvement in innovative projects depends less on institutional prescriptions than on perceived autonomy and contextual relevance. In the FMPS context, where pedagogical practices are largely standardized, these findings indicated that innovation can only be sustainable if openness is matched with realistic working conditions, particularly regarding program workload and time. This convergence between opportunity and constraint highlights an opportunity for the FMPS to further strengthen innovation by ensuring that it remains compatible with educators' daily working conditions.

Moreover, differential analyses based on seniority, initial training, or gender did not reveal any pedagogically significant variation across the evaluated dimensions. These findings confirm a broad consistency in perceptions among educators within the FMPS network.

5. Conclusions

This study provided a holistic evaluation of the *Éveil et Créativité* collection, combining quantitative and qualitative evidence to capture educators' perceptions across multiple dimensions. The findings confirm that the program is well received overall, especially for its ability to foster children's engagement and content richness. The researchers also identified key areas for refinement such as the design of materials, the flexibility of the schedule, and the sustainability of innovation in daily practice.

Beyond these specific observations, the study makes three contributions of broader significance. First, it illustrates the value of large-scale, mixed-method evaluation of preschool programs, showing that combining statistical evidence with field-based feedback increases the reliability of results. Second, it provides an original case of an internally conducted evaluation within a centralized system, in which pedagogical content, training, and infrastructure are standardized. This controlled environment provides unique opportunities and ensures high data consistency. Finally, the evaluation underscores the need to move beyond static perceptions by encouraging continuous improvement of the collection. It also opens the way for future case studies and longitudinal research on program implementation and long-term impact.

Overall, the results confirm the relevance of holistic evaluation frameworks in preschool education. They offer practical guidance for strengthening the *Éveil et Créativité* collection, while also contributing insights of wider interest to the evaluation of educational programs in similar contexts.

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Appendix

Table A1. Regional Distribution of Participants

Region	%	Region	%
Fès–Meknès	18.4	Béni Mellal–Khénifra	9.3
Tanger–Tétouan–Al Hoceïma	17.4	Souss–Massa	4.0
Marrakech–Safi	12.4	Rabat–Salé–Kénitra	1.4
Oriental	12.2	Guelmim–Oued Noun	1.1
Drâa–Tafilalet	11.8	Laâyoune–Sakia El Hamra	0.5
Casablanca–Settat	11.4		

Table A2. Distribution of Questionnaire Items Across Dimensions and CIPP Categories

No.	Measured Dimension	CIPP Category	Items
1	Alignment with curriculum guidelines	Context	The contents proposed in the collection are aligned with the pedagogical objectives defined in the national curriculum framework.
2			The collection covers all domains of child development: cognitive, affective, social, motor, and sensory.
3			The collection is based on an active pedagogical approach, offering varied and stimulating situations that promote experimentation and discovery.
4			Play is emphasized as the primary mode of learning in the collection.
5			The pedagogical objectives of the collection are clearly defined.
6			The activities and contents are adapted to the cognitive and emotional abilities of children in this age group.
7			The themes of the pedagogical projects are relevant and connected to the sociocultural reality of the children.
8			The collection allows the adaptation of activities and contents to the needs of children in various contexts.
9	Quality of pedagogical content and resources	Input	The collection provides a variety of pedagogical resources (e.g., posters, stories).
10			The educator's guide is clear and practical; it provides precise pedagogical instructions and facilitates session planning.
11			The educator's guide is easy to use, with a clear layout (font, colors).
12			The print quality of the guide supports readability and usability.
13			The child's workbook is clear, with attractive, diverse, and age-appropriate illustrations.
14			The print quality of the child's workbook is good, and it is easy to handle.
15			The images used in the posters and teaching materials are clear, attractive, and help in the effective execution of activities.
16			The visual design of the educator's guide is appealing and enhances engagement with the content.
17			The child's workbook and posters are aesthetically well designed, facilitating children's appropriation of the content.
18	Child	Product	Children show increased interest and interact more with the proposed

	engagement and participation		pedagogical activities.
19			The collection promotes children's autonomy in carrying out activities.
20			The collection stimulates curiosity, creativity, and questioning among children.
21			The collection fosters cooperation and communication among children during activities.
22			The collection contributes to strengthening children's skills and competencies in various learning domains.
23	Temporal Organization of Pedagogical Activities	Process	The collection provides clear guidance on the distribution of activities and classroom time management.
24			The collection helps organize daily activities and efficiently plan sessions.
25			The time allocated for different activities is generally well balanced.
26			The time distribution of activities respects children's natural learning rhythms.
27			The timing of project components allows optimal use of the week dedicated to support and consolidation.
28	Openness to Pedagogical Innovation		The collection offers a favorable environment for pedagogical innovation, allowing educators to integrate new activities and creative approaches.

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Authors contributions

Mo.Z. contributed to the literature review, study design, data collection, data analysis, drafting and revising the manuscript. Ma.Z. contributed to study design, revising the manuscript, supervision, and validation. All authors read and approved the final manuscript.

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Institutional Review Board Statement

The study was conducted in accordance with the Declaration of Helsinki and was approved by the Review Committee of the Research Center of the Moroccan Foundation for PreSchool (FMPS), Rabat, Morocco.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Informed consent

Informed consent was obtained from all subjects involved in the study.

Ethics approval

The Publication Ethics Committee of the Sciedu Press.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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