

# Co-Design of a Family Peacebuilding Kit: Case Study in Binar Bermain Belajar Community

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## ABSTRACT

Existing educational products for families often focus narrowly on cognitive skills or behavioral training, overlooking emotional awareness, conflict resolution, and positive communication between parents and children. Previous studies in family education and parenting typically adopt top-down design approaches, where experts create tools without systematically involving end users in the creative process. This creates a gap between product design and the real-life needs, values, and contexts of families. This research addresses that gap by applying a participatory design approach—specifically co-design—collaborating directly with the Binar Bermain Belajar parenting community in Indonesia. Using the Double Diamond design model, the study engages families throughout all design stages: Discover, Define, Develop, and Deliver. The resulting Family Peacebuilding Kit integrates interactive tools, including Peace Action Cards and Emotion Reflection Cards, to support playful yet meaningful dialogue in households. By prioritizing users as co-creators rather than passive recipients, this study contributes to the field of social design and community-based learning by demonstrating how family-centered co-design processes can produce more relevant, engaging, and sustainable educational interventions—bridging the disconnect between academic design frameworks and real-world family dynamics.

## KEYWORDS

Co-design  
Double Diamond  
Product Design  
Participatory Design

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## INTRODUCTION

In recent years, the *co-design* or participatory design approach has been increasingly adopted in the development of educational products, especially in the context of parenting and family-based learning (Muir et al., 2024). This approach is recognized for its responsiveness to user needs, as it actively involves them in the design process from need identification to evaluation. *Co-design* not only produces more relevant solutions but also enhances users' sense of ownership and the long-term sustainability of the product.

Binar Bermain Belajar is a community-based movement that has implemented the *co-design* approach in developing educational tools for families. Founded in 2019, the community assists parents particularly mothers in nurturing children through meaningful, play-based, inclusive, and peace-oriented parenting. By 2024, Binar has reached thousands of families across more than twenty provinces in Indonesia. One of the community's flagship innovations is the Family Peacebuilding Kit an interactive tool designed to foster healthy communication, emotional awareness, and peaceful conflict resolution within the family setting. The kit consists of action cards, reflection cards, conflict resolution scenarios, and a user guide that families can adapt for use in their homes.

However, during its early development phase, the kit faced several challenges, particularly in material selection, visual appeal, and gameplay format. Some of the early components were made from fragile paper, making them unsuitable and unsafe for children. Visually, the graphic elements were not engaging enough for younger audiences. In addition, the game mechanics were not intuitive for first-time users unfamiliar with educational games. Previous literature has pointed out that conventional design approaches often fall short of addressing users' holistic needs (Nisaursyidah et al., 2021) especially in the context of family education. The need for educational media that can internalize values through direct interaction within the household (Agustina, 2023; Masyhuri & Adawiyah, 2024). Meanwhile, (Tahlia et al., 2024) highlighted the effectiveness of play-based learning in promoting children's social-emotional development but most of these studies did not utilize participatory design methods (Hapsari & Fitriana Bahri, 2025).

While several studies have explored co-design in formal education settings, few have examined its implementation in informal, family-based contexts (Patimah, 2020). The home is the primary learning environment for children, yet little attention has been paid to the role of families and communities as co-designers of educational tools. Community engagement in design also presents opportunities for broader social empowerment. Through the co-design approach, the Binar community was actively involved not just as users, but as collaborative partners throughout the design and development of the Family Peacebuilding Kit. This approach allowed for deeper exploration of user needs, the inclusion of culturally contextual content, and real-life testing of prototypes (Putri et al., 2024). The participatory model also strengthened social bonds within the community, transforming the design process into a form of collective empowerment.

Beyond the design phase, this study also examines how production management was handled in a participatory manner. It includes decisions regarding material selection, vendor partnerships, and community-based distribution. In this model, design serves not only as a visual and functional tool but also as a vehicle for value dissemination and social impact. This study offers theoretical contributions to community-based co-design methods and practical insights into creating inclusive and sustainable family educational tools (Ramsey et al., 2023). The findings may serve as a replicable model for similar initiatives, particularly those focused on peace education and character development within the family setting. Therefore, this research focuses on how co-design practices were implemented in the development of the Family Peacebuilding Kit by the Binar Bermain Belajar community. The aim is to examine the contribution of community participation in the design and production of educational tools and to evaluate the effectiveness of this approach in supporting peace-based learning in the family environment.

## METHOD

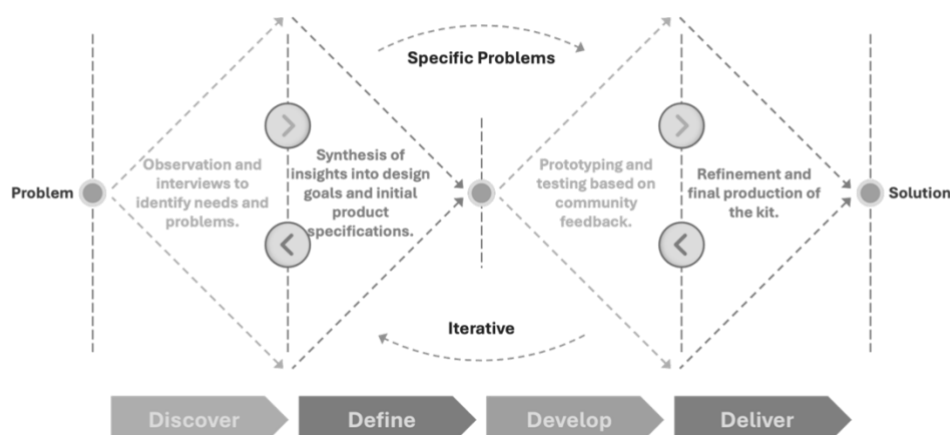
This study applied a qualitative approach using the co-design method, involving active participation of members from the *Binar Bermain Belajar* community throughout the development process of the *Family Peacebuilding Kit*. The research was conducted from March to June 2025 and focused on the design and evaluation of a family-based educational product that promotes communication, empathy, and conflict resolution through play.

## Subjects and Location

The study was carried out between March and June 2025 and took place in two primary locations: the community center used by *Binar Bermain Belajar* and the design studio of the School of Creative Industries at Telkom University. The participants included facilitators from the Binar community, and a team of design researchers. These participants played dual roles as informants who provided input on the product's function and design, and as co-designers who were actively involved in ideation and evaluation processes.

## Research Procedure

The development process followed the Double Diamond model, comprising four stages as seen in Figure 1.



**Figure 1.** The Four Stages of the Double Diamond Framework Applied in the Co-Design of the Family Peacebuilding Kit

The development of the *Family Peacebuilding Kit* followed the Double Diamond design framework, consisting of four main stages: Discover, Define, Develop, and Deliver. In the Discover phase, the research team conducted initial user research through direct observations and semi-structured interviews with members of the *Binar Bermain Belajar* community. This phase focused on identifying parenting challenges related to communication, emotional awareness, and conflict resolution in the home environment. Participants shared stories and daily parenting experiences that helped surface both explicit and latent needs for educational tools that could facilitate peaceful interactions between children and parents.

In the Define phase, the data gathered during the discovery stage were analyzed using thematic coding. The insights were synthesized into specific design goals and initial product specifications. Core findings emphasized the need for emotionally safe, visually accessible, and interaction-driven materials that support children's emotional development while fostering collaborative communication. These insights led to the early conceptualization of three primary components for the kit: Action Cards, Emotion Reflection Cards, and Conflict Scenario Cards, along with a concise instructional guide.

The project then entered the Develop phase, where several low-fidelity prototypes were created and tested with parents and children in small group sessions. These prototypes were iteratively refined based on continuous feedback from users, who provided insights into design clarity, ease of use, and emotional engagement during the play sessions. Designers collaborated closely with the community throughout this phase, adjusting elements such as language, iconography, color schemes, and game mechanics. This iterative, user-driven process ensured that the product aligned with the cognitive and emotional capabilities of children while remaining functional for adults.

Finally, the Deliver phase focused on the refinement and final production of the kit. After testing higher-fidelity prototypes in larger family settings, the finalized design was produced using child-friendly and durable materials, including laminated art carton paper and rounded-edge cards to ensure safety. The kit was then introduced in a community-based trial event, accompanied by instructional support and group training. In this final stage, the research team also worked on preparing distribution strategies, packaging, and documentation for broader implementation within *Binar's* extended network.

Throughout all four stages, the process remained highly participatory and iterative. Community members were not only treated as users but as co-designers, providing continual input that shaped the direction and outcome of the product. The Double Diamond framework proved especially effective for structuring the collaborative design process, allowing for deep exploration of user needs while maintaining a clear path toward tangible, implementable solutions.

## Data Collection Techniques

Multiple qualitative methods were used to ensure triangulation and reliability of findings:

- Semi-structured interviews with parents and facilitators explored their perceptions, values, and expectations for the kit.
- Participatory observation was conducted during design workshops and playtesting sessions to capture spontaneous interactions and emotional responses.
- Focus Group Discussions (FGDs) were held after play sessions to gather in-depth feedback and collective reflections from participants.

## Data Analysis

All qualitative data were transcribed and analyzed using thematic analysis. The coding process involved identifying patterns and recurring themes related to user needs, design challenges, material preferences, emotional impact, and engagement. This thematic categorization informed both the product iteration and the interpretation of the role of co-design in enhancing product relevance. Data validation was conducted through source triangulation and member checking to ensure credibility and trustworthiness.

## RESULT AND DISCUSSION

### Co-Design as a Framework for Family-Centered Educational Products

The application of co-design in this study positioned users not merely as informants but as collaborators in the design process. Members of the *Binar Bermain Belajar* community including parents, facilitators, and children were engaged in multiple stages of development, contributing ideas, feedback, and reflections based on their daily experiences. This involvement ensured that the final product would respond to the actual needs and behaviors of the users, rather than assumptions from designers or researchers alone.

Through co-design workshops and feedback loops, users were able to voice concerns about emotional development, communication gaps, and conflict management within the family. Their experiences shaped both the content and the format of the educational kit, especially in how families approach emotional discussion in parenting contexts. For example, parents emphasized the need for visual tools to express emotions something that verbal explanations often failed to achieve with younger children (Kholilah et al., 2022). These insights directly informed the creation of the Emotion Reflection Cards in the kit.

Co-design also fostered a sense of ownership among the community. By including users in prototyping and content decisions, the kit became a collective product an outcome of shared effort rather than a top-down intervention. This helped increase the willingness of families to test, use, and promote the product in broader networks (Cès et al., 2025; Sen et al., 2018), supporting sustainability beyond the project timeline. From a theoretical standpoint, this aligns with key principles in participatory design and social design research. Co-design is not only about improving outcomes but also about democratizing the design process and enabling marginalized voices to influence solutions that affect them. In this study, the co-design approach empowered a parenting community to shape an educational tool that is culturally sensitive, emotionally resonant, and practically useful.

Thus, co-design is not simply a method it is a relational framework that builds trust, enhances empathy, and creates mutual accountability between designers and users. This framework was critical to the success of the *Family Peacebuilding Kit*, making it a model of participatory innovation in family education.

### Co-Design as a Framework for Family-Centered Educational Products

The development of the *Family Peacebuilding Kit* followed the Double Diamond model, which consists of four stages: Discover, Define, Develop, and Deliver. This model provided a structured yet flexible framework that allowed the team to explore challenges widely before narrowing in on targeted solutions. Each stage involved iterative loops of ideation, testing, and refinement with the user community.

In the Discover stage, in-depth interviews and observations were conducted to understand



daily parenting challenges in emotional communication and discipline. Participants described common family scenarios involving miscommunication, unresolved tension, or lack of tools to address children's emotions. These insights revealed a strong need for an accessible, interactive solution that could prompt discussions and reflection at home.

The Define stage involved thematic analysis of the data to translate user input into concrete design specifications. Insights were distilled into key principles: the kit had to be simple, visual, culturally appropriate, emotionally engaging, and usable across multiple family types. These specifications guided the concept development of three types of cards Peace Action, Emotion Reflection, and Conflict Scenario—as well as an easy-to-follow guidebook.

During the Develop stage, the team created low-fidelity prototypes and tested them in small group sessions. Based on feedback regarding text clarity, icon visibility, and gameplay flow, prototypes were revised multiple times. This iterative cycle allowed continuous validation and improvement. Parents contributed to content refinement, while children responded to visuals and interactions—ensuring that both audiences were accounted for in design decisions.

Finally, the Deliver stage focused on material production, safety, and initial implementation. Laminated art carton with rounded corners was used for durability and child-friendliness. A public testing event with 4 families served as both an evaluation and a launch platform. The Double Diamond model proved effective in managing the complexity of co-design with non-designers, balancing exploration and execution while staying responsive to community feedback.

### Product Outcomes and Design Features

The final version of the *Family Peacebuilding Kit* consists of four main components: Peace Action Cards, Emotion Reflection Cards, Conflict Scenario Cards, and a Facilitator's Guidebook. Each component plays a distinct role in stimulating dialogue, fostering empathy, and helping families navigate everyday emotional and social challenges (Adila et al., 2024). The cards were designed to be playful yet meaningful, encouraging cooperative interaction rather than competition. A digital mock-up showing the design elements of the Family Peacebuilding Kit, including the Peace Action Cards, Emotion Reflection Cards, Conflict Scenario Cards, and guidebook. The 3D rendering highlights the visual system, layout hierarchy, and overall color tone developed during the design refinement phase can be seen in Figure 2.



**Figure 2.** 3D Visualization of the Family Peacebuilding Kit

The physical version of the Family Peacebuilding Kit, printed on laminated art carton with rounded corners. The image shows the assembled components as used during user testing, including the actual cards and packaging format tailored for family use can be seen in Figure 3.



**Figure 3.** Final Prototype of the Family Peacebuilding Kit

The Peace Action Cards contain positive behavior prompts that encourage children to initiate acts of kindness, cooperation, or listening. These cards serve to build habits of peaceful action through simple, tangible suggestions such as "offer a hug" or "help clean up." Meanwhile, the Emotion Reflection Cards include visuals of facial expressions and situational cues, allowing children to name and explore their feelings. This supports emotional literacy and recognition, which are essential for managing conflict.

The Conflict Scenario Cards were based on real-life anecdotes shared during the Discover stage. Scenarios are written in a way that invites discussion and problem-solving, asking children and parents, "What would you do?" or "How can we solve this together?" These cards act as springboards for storytelling and empathy-building across generations. All text is written in child-friendly language with adult facilitation prompts.

Visually, the product uses soft pastel tones, rounded shapes, and expressive yet simple illustrations. Typography is bold and legible, and iconography is consistent across all cards to reduce confusion. The material format art carton with matte lamination was chosen for its durability and tactile comfort, considering children's tendency to handle cards actively.

Overall, the product's design decisions were based not only on aesthetics but also on usability, accessibility, and emotional safety. Feedback from families indicated that the combination of play and conversation in the kit created a new learning space at home (Chalik et al., 2024) one that was gentle, interactive, and affirming of each family member's voice.

### User Testing and Community Feedback

To test the usability and impact of the *Family Peacebuilding Kit*, a trial session was held on June 29, 2025, with four families from the *Binar Bermain Belajar* community. The activity included a short introduction to the kit, guided play between parents and children, and a group discussion afterward. The session was designed to observe how families used the kit in real time and how children responded to its contents. Researchers also collected feedback using short questionnaires and informal interviews. During the session, children were curious and excited to interact with the cards. They read the instructions aloud, took turns picking cards, and shared their thoughts on the emotions and scenarios shown. Parents said the kit helped them start conversations they usually found difficult—like asking how their child felt after a conflict or encouraging their child to think about others' feelings.

All four families agreed that the kit felt useful, relevant, and enjoyable. Three parents especially appreciated the visual elements, saying the soft colors and illustrations made the cards inviting for children. One father mentioned that the cards made his child more confident in sharing stories about their day. While the feedback was overall positive, some suggestions for improvement were noted. Two parents asked for a version that could be used with younger children, perhaps using more pictures and fewer words. Another suggestion was to add a *quick-start guide* or example

activities to make it easier to use the kit right away at home.

Parents also noted that the packaging could be improved. One family mentioned that they wanted a storage pouch or zip bag to keep the cards safe and organized, especially when bringing it to outdoor activities. Another said the materials felt sturdy but suggested a waterproof version for longer use. These small but thoughtful inputs helped the design team think about how to make the product more practical for family life. More than just testing the product, the session created space for parents to connect and share experiences. During the discussion, some parents talked about how they often feel unsure about how to respond to their children's emotions, and how the cards gave them a starting point. One parent shared, "*We don't usually play together like this it felt good to listen to each other without rushing.*" These moments showed that the kit didn't just support learning, but also strengthened family bonds and opened space for emotional presence.

In summary, even with a small group, the user testing session offered rich insight into how the *Family Peacebuilding Kit* works in practice. The feedback confirmed that the kit helped build emotional awareness, encouraged open communication, and was easy to use. It also highlighted areas for further development. Most importantly, the session showed that families are not just users—but co-creators who shape the learning experience through their voices, stories, and needs.

### Participatory Production and Distribution Strategy

Beyond the design of the product, this study also explored how participatory principles can extend into production and distribution processes. Community members were consulted not only in product validation but also in sourcing materials, selecting vendors, and budgeting for production. This inclusive approach ensured that ethical and practical concerns such as affordability, local availability, and quality were collectively addressed (Berge et al., 2019).

For instance, the decision to use art carton with matte lamination was based on suggestions from parents who had previously handled flimsy educational materials that tore easily. The team then identified local print vendors capable of producing small batches with precise die-cutting and child-safe finishes. Facilitators from *Binar* helped oversee print quality and packaging assembly, fostering a sense of joint responsibility in the production phase.

Community-based distribution was also piloted through the *Binar* network. Instead of relying on commercial channels, the kit was introduced through parenting circles, community events, and WhatsApp groups. This informal yet effective system allowed for direct feedback, storytelling, and peer learning, turning distribution into a participatory process rather than a passive handout.

Additionally, the team developed digital versions of selected kit components, which could be downloaded and printed by families who could not attend the physical sessions. This addressed concerns about access and affordability while maintaining a consistent visual identity and instructional tone. The idea of a hybrid analog-digital model emerged as a promising direction for scaling up.

Ultimately, the participatory approach to production and distribution mirrored the co-design values embedded in the product itself. It underscored the belief that families and communities are not only consumers of design but co-producers of knowledge, culture, and solutions. This repositions the act of "designing" as a social process rather than a technical task alone.

### CONCLUSION

This study demonstrated that co-design, when implemented within a community-based framework, can effectively produce educational tools that are contextually relevant, emotionally resonant, and functionally accessible for families. By involving parents, facilitators, and children throughout the Double Diamond design process, the resulting *Family Peacebuilding Kit* reflected real-world needs, values, and everyday challenges faced by families in nurturing emotional literacy and peaceful communication. The product not only facilitated engaging interactions between parents and children but also supported emotional expression, conflict resolution, and shared reflection through play-based learning. The structured yet flexible co-design process allowed for iterative improvements and helped foster a strong sense of ownership among participants, which is essential for long-term use and sustainability.

User testing with four families revealed positive responses toward the product's usability, design, and relevance. Families reported increased comfort in discussing emotions and found the kit helpful in navigating family dynamics. Feedback also identified areas for improvement, such as the need for versions adapted for younger children and better packaging solutions. Furthermore, the participatory approach extended beyond design into production and distribution, highlighting the potential for community-led educational innovation. The project served not only as a product development effort but also as a platform for social empowerment, collaborative learning, and value co-creation.

Future research may explore the scalability of the kit, including broader testing across diverse family contexts and potential integration with digital formats. The findings reinforce the importance of inclusive design methodologies in creating educational tools that are both impactful and culturally embedded.

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