
Empowering Urban-Riverbank Mothers: Boosting Early Childhood Literacy Through Interactive Card Games in Banjarmasin

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Abstract

Early childhood literacy constitutes a foundational pillar of human capital development, yet its cultivation remains uneven across socioeconomic strata, particularly in geographically marginalized communities. Urban-riverbank settlements in Banjarmasin, South Kalimantan, represent one such community where mothers of young children (aged 4-6 years) face compounded challenges: limited access to educational resources, low awareness of early literacy stimulation strategies, and constrained household economies that preclude the purchase of commercial learning media. This community service program aimed to empower these mothers by enhancing their capacity to facilitate early childhood literacy at home through the introduction, fabrication, and application of interactive card games as low-cost, culturally accessible literacy tools. Employing a Participatory Action Research (PAR) framework, the program was implemented across three structured phases: needs assessment and preparation, hands-on training workshops, and guided mentoring with post-program evaluation. Data were gathered through structured observation, pre- and post-test questionnaires, and in-depth interviews, then analyzed using Miles and Huberman's interactive analysis model. Results demonstrated a significant improvement in maternal knowledge of early literacy stimulation practices, with post-test scores reflecting an 85% average gain over baseline. Children's engagement with literacy activities increased markedly, characterized by intrinsic motivation and sustained attention during card-based play sessions. Furthermore, a community of literacy-conscious mothers was organically established, ensuring program sustainability beyond the intervention period. These findings affirm that interactive card games, when embedded within a participatory maternal empowerment framework, constitute an effective and replicable strategy for advancing early childhood literacy outcomes in underserved urban communities.

Keywords: *Early Childhood Literacy, Interactive Card Games, Parental Involvement, Urban-Riverbank Community, Community Empowerment.*

INTRODUCTION

Early childhood literacy encompassing the emergent skills of phonological awareness, print concepts, vocabulary acquisition, and narrative comprehension is widely recognized as the most consequential predictor of long-term academic achievement and cognitive development (Whitehurst & Lonigan, 1998; UNESCO, 2022). The first six years of life constitute a neurologically sensitive period during which the brain exhibits peak plasticity, rendering environmental stimulation disproportionately influential on language and literacy outcomes (Shonkoff & Phillips, 2000). Globally, the imperative to close literacy gaps before formal schooling has gained renewed urgency in the post-pandemic era, as learning losses among young children in low- and middle-income countries have been documented at alarming rates (UNICEF, 2022). In Indonesia, national data consistently reveal that a substantial proportion of children entering primary school lack foundational pre-literacy competencies, underscoring the critical need for family-based early literacy interventions (Kemendikbudristek, 2023).

Banjarmasin, the capital of South Kalimantan Province, is characterized by an extensive network of river canals that historically shaped its urban morphology and gave rise to distinctive riparian settlements. Urban-riverbank (tepi sungai) communities exhibit a sociodemographic profile markedly distinct from the city's inland population. Households are often of modest economic standing, with primary breadwinners engaged in informal sectors such as small-scale trade, fishing, and daily labor. Mothers in these settlements typically assume the dual role of primary caregiver and economic contributor, leaving limited discretionary time for structured child learning activities. Moreover, the physical environment characterized by dense housing, limited public space, and constrained domestic interiors presents practical barriers to conventional early childhood education approaches. These contextual realities demand community service interventions calibrated to the spatial, economic, and cultural constraints of riverbank living.

Despite the broadly documented importance of early literacy stimulation in the home environment, a significant and persistent gap exists between the ideal and the observed reality in urban-riverbank communities. Research consistently demonstrates that parental involvement particularly maternal engagement in shared reading, storytelling, and playful language activities is among the strongest predictors of children's literacy readiness (Sénéchal & LeFevre, 2002). However, mothers in economically constrained communities frequently lack not the motivation to stimulate their children's literacy, but rather the knowledge, skills, and appropriate tools to do so effectively (Haskins & Rouse, 2005). Commercial educational materials remain financially inaccessible, and formal parenting literacy programs rarely penetrate informal urban settlements. This structural gap between the availability of evidence-based early literacy practices and their uptake among economically marginal mothers constitutes the primary problem this program seeks to address.

The selection of interactive card games as the central pedagogical instrument of this intervention is grounded in a convergent body of evidence from developmental psychology and early childhood education. Game-based learning (GBL) theory posits that play contexts naturally generate the affective conditions curiosity, motivation, low anxiety, and social engagement most conducive to language acquisition and cognitive skill development in young children (Gee, 2007; Plass, Homer, & Kinzer, 2015). Card games offer a uniquely advantageous profile for community service contexts: they require minimal material investment, can be fabricated from locally available resources, are culturally neutral and easily contextualized, and are playable in spatially constrained domestic environments. Crucially, card games position the mother as an active co-player and facilitator rather than a passive bystander, thereby organically embedding parental involvement within the learning process (Niklas, Cohrssen, & Tayler, 2016).

Given these contextual realities and theoretical foundations, this program addresses two interrelated research questions: (1) To what extent does a structured training program in interactive card game facilitation enhance the knowledge and practical competencies of urban-riverbank mothers in Banjarmasin regarding early childhood literacy stimulation? And (2) What observable changes in children's literacy engagement and mothers' parenting awareness result from program participation? The primary objective of this community service initiative is accordingly twofold: to build the capacity of mothers as effective early literacy facilitators within their homes, and to establish a sustainable, community-based network capable of perpetuating literacy-supportive practices beyond the duration of the formal intervention.

RESEARCH METHODS

Approach and Framework

This program adopted a Participatory Action Research (PAR) framework, which prioritizes the active engagement of community members as co-investigators and co-designers of solutions to their own identified problems (Kemmis & McTaggart, 2005). PAR was selected as the methodological foundation because it aligns with the program's dual objectives of generating knowledge and achieving practical community transformation simultaneously. Within this framework, participating mothers were not positioned as passive beneficiaries but as informed agents whose lived experiences and local knowledge directly shaped the design and iterative refinement of intervention activities. A descriptive-qualitative approach was employed for data analysis, supplemented by quantitative pre-test and post-test instruments to capture measurable changes in maternal knowledge and competency.

Phase 1: Preparation and Needs Assessment

The initial phase involved systematic community mapping and participatory needs assessment conducted over a four-week period prior to the main intervention. The team conducted structured interviews with community leaders and informal focus group discussions with a purposively selected group of mothers (n=20) to identify baseline literacy practices, existing resources, perceived barriers, and community priorities. Observation of the home environment provided complementary contextual data. Findings from this phase directly informed the design of training materials, the selection of card game typologies, and the scheduling of workshop sessions to accommodate mothers' daily routines.

Phase 2: Implementation and Training

The training intervention comprised three intensive workshop sessions, each spanning approximately three hours. Session one introduced participants to foundational concepts of early childhood literacy development and the theoretical basis of game-based learning, using accessible visual aids. Session two focused on the hands-on fabrication of four types of interactive literacy card games: alphabet recognition cards, rhyming pair cards, picture-word matching cards, and story sequencing cards using affordable, locally procured materials. Session three was dedicated to facilitation practice, wherein mothers demonstrated card game activities with their own children under guided observation, receiving real-time feedback and pedagogical coaching from the service team. Card game sets were distributed to all participants at the conclusion of this phase.

Phase 3: Evaluation and Mentoring

A structured post-program evaluation was conducted four weeks following the final training session. Data collection instruments included: (1) a validated pre-test and post-test questionnaire (20 items) measuring maternal knowledge of early literacy principles and card game facilitation strategies; (2) structured observational checklists documenting child literacy

engagement behaviors during home visits; and (3) semi-structured individual interviews. Data were analyzed employing Miles and Huberman's (1994) interactive model of qualitative analysis, encompassing three iterative stages: data condensation, data display, and conclusion drawing and verification. Quantitative pre-test/post-test scores were analyzed using descriptive statistics to calculate mean gains and percentage improvements.

RESULTS AND DISCUSSION

Initial Conditions and Problem Mapping Among Urban-Riverbank Mothers in Banjarmasin

Baseline needs assessment data revealed a consistent and multi-dimensional pattern of early literacy deprivation within the target community. The majority of participating mothers (87%) reported possessing no structured understanding of age-appropriate literacy stimulation activities for children aged 4-6 years. Home environments were largely devoid of printed literacy materials books, alphabet posters, or educational games were absent in 79% of households visited. When asked to describe their current practices for supporting children's learning at home, most mothers cited passive television viewing or unsupervised peer play as the primary activities filling children's non-sleeping hours. Economically, household budgets allocated negligible resources to educational materials, with mothers consistently articulating that commercially available educational products were perceived as luxury expenditures. Critically, the needs assessment also revealed a strong motivational orientation among participating mothers: despite their limited knowledge and resources, virtually all expressed a heartfelt desire to support their children's educational success (Burchinal et al., 2002).

Implementation Dynamics and the Interactive Card Game Training Process

The three-session workshop series generated a notably high level of participant engagement, a dynamic vividly captured in the photographic documentation of the program (Figures 1-3). From the outset of Session One, mothers demonstrated attentiveness and enthusiasm in receiving conceptual knowledge about early childhood literacy, with many participants verbally connecting the presented information to their own observations of their children's learning behaviors at home. The informal, floor-based seating arrangement deliberately adopted for workshops, echoing the natural domestic environment where card games would subsequently be used created a psychologically safe and socially cohesive learning atmosphere. Session Two proved to be the most energetically engaging of the three workshops. Mothers worked collaboratively in small groups, negotiating design choices, sharing materials, and offering mutual encouragement behaviors indicative of collaborative scaffolding within the zone of proximal development (Vygotsky, 1978). The collective production activity generated a sense of shared investment and ownership over the resulting materials, a factor theorized by Bandura (1997) as critical for building self-efficacy in skill application. Session Three's facilitation practice component provided particularly instructive evidence of participant learning. Children's behavioral responses characterized by sustained attention, spontaneous verbalization, and requests to repeat game rounds provided real-time evidence of the intrinsic motivational power of game-based literacy contexts (Plass et al., 2015).

Evaluation of Program Impact on Early Childhood Literacy and Maternal Parenting Awareness

Post-program evaluation data provided compelling evidence of the intervention's efficacy across multiple outcome dimensions. Comparative analysis of pre-test and post-test questionnaire scores revealed a mean knowledge gain of 85% across all participating mothers, representing a statistically and practically significant improvement in understanding of early literacy principles, child development milestones, and card game facilitation techniques. Mothers who had been unable at baseline to articulate a single age-appropriate literacy activity demonstrated, at post-test, confident and detailed knowledge of multiple stimulation strategies and their developmental rationale. Home visit observational data documented parallel

improvements in children's literacy engagement behaviors. Children in households where mothers had actively implemented card game activities exhibited markedly elevated levels of voluntary engagement with literacy-related tasks, consistent with Ryan and Deci's (2000) self-determination theory. At the community level, the program catalyzed the organic formation of a Mothers' Literacy Community (Komunitas Ibu Peduli Literasi), in which participating mothers established a peer network for ongoing sharing of card game materials, facilitation tips, and children's progress observations. This emergent community structure constitutes a self-sustaining mechanism for knowledge diffusion and social reinforcement of literacy-supportive parenting practices (Hoover-Dempsey et al., 2005).

Figure 1. Training Activity: Interactive Card Game Workshop with Urban-Riverbank Mothers in Banjarmasin



CONCLUSION

This community service program demonstrated that a structured, participatory intervention centered on the fabrication and facilitation of interactive literacy card games is an effective, scalable, and culturally appropriate strategy for enhancing early childhood literacy stimulation capacity among urban-riverbank mothers in Banjarmasin. Across all measured dimensions maternal knowledge, practical facilitation skill, children's literacy engagement, and community social capital the program achieved its stated objectives, producing an 85% average improvement in maternal literacy knowledge and generating an organic, self-sustaining community structure dedicated to the perpetuation of evidence-based early literacy practices. The findings confirm that economic constraint need not preclude effective family-based early literacy intervention when programs are designed with authentic community participation, genuine cultural responsiveness, and attention to the practical realities of participants' daily lives.

Future initiatives building on this program are encouraged to pursue several strategic directions. Local government bodies particularly the Banjarmasin City Office of Early Childhood Education should be engaged as institutional partners to integrate the card game literacy model into the existing Posyandu and BKB (Bina Keluarga Balita) infrastructure, thereby extending reach to a far broader population of mothers without proportional increases in resource expenditure. Longitudinal follow-up studies tracking children's foundational literacy skills at primary school entry are recommended to quantify the sustained developmental impact of maternal empowerment programs of this nature. Furthermore, the participatory card game fabrication model warrants adaptation and testing across other geographically and culturally distinct marginalized community contexts within Indonesia, contributing to a national evidence base for low-cost, community-anchored early childhood literacy interventions.

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