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FORMATION OF COOPERATION SKILLS IN PRESCHOOL CHILDREN: A THEORETICAL, METHODOLOGICAL, AND PRACTICE-ORIENTED FRAMEWORK

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ABSTRACT
Cooperation is a foundational competence of early childhood because it integrates communication, shared goal formation, perspective-taking, emotional regulation, and coordinated action. This article develops a theoretically grounded and methodologically explicit framework for forming and assessing cooperation skills in preschool children. The paper is based on a critical synthesis of DOI-verified research on shared intentionality, peer interaction, cooperative problem solving, social-emotional competence, play-based pedagogy, classroom quality, and recent collaborative interventions. Rather than claiming completed experimental outcomes, it specifies a feasible quasi-experimental design for children aged five to six, including paired and small-group productive tasks, an observation rubric, reliability procedures, and an ethical analysis plan. The synthesis indicates that effective cooperation is most likely when children work toward a visible common product, depend on one another's roles, have time to negotiate, and receive calibrated rather than directive adult support. A five-domain observation framework is proposed: shared goal maintenance, role coordination, communication and negotiation, mutual assistance, and constructive conflict resolution. The article concludes that cooperation should be treated as an intentionally taught, observed, and progressively scaffolded competence within preschool curricula.

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Keywords: *preschool education, cooperation skills, peer interaction, shared intentionality, collaborative problem solving, guided play, social-emotional competence, observation rubric, joint activity, school readiness.*

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1. Introduction

Preschool education is not limited to the transmission of elementary knowledge. It is also a social environment in which children learn how to enter a group, sustain a common activity, express their intentions, understand the intentions of others, wait, help, negotiate, and repair interaction after disagreement. These forms of participation are often summarized under the broad term cooperation. In educational practice, however, cooperation is sometimes treated as if it emerged automatically whenever several children are placed at one table. Developmental research suggests a more demanding interpretation: productive cooperation requires a shared goal, coordinated roles, mutual responsiveness, and a willingness to regulate individual action in relation to the actions of a partner [1–6].

The preschool period is especially significant because children's peer interactions become more stable and complex while language, perspective-taking, emotional understanding, and self-regulation are developing rapidly. Early cooperation is therefore both an outcome of development and a context that can stimulate development. When children build a structure together, create a shared drawing, dramatize a story, solve a practical problem, or organize a role-play scenario, they must make their ideas public and compare them with those of others. They may discover that an individual plan cannot be completed without another child's action. They also encounter disagreement in a relatively safe setting and can learn that conflict does not have to terminate joint activity.

A central pedagogical problem is that the quality of joint activity varies widely. Some groups divide the materials but continue to work independently. Others follow the most dominant child without genuine negotiation. In still other groups, children create a common plan, allocate roles, monitor one another's contributions, and revise the product through discussion. All three situations may appear to an observer as children 'working together,' yet they reflect very different levels of cooperation. For this reason, preschool pedagogy needs operational criteria that distinguish physical proximity from coordinated collaboration.

The original version of this paper drew on several regional textbooks and program descriptions whose bibliographic details could not be confirmed reliably through DOI or authoritative publisher records. In the present revision, unverified and bibliographically incomplete items have been removed from the evidence base. The theoretical and methodological argument is rebuilt around fifteen traceable scholarly sources, each linked to a verified DOI. The purpose is not merely to increase the number of references but to strengthen the relationship between the claims made in the paper and the evidence cited.

The study has three objectives. First, it synthesizes developmental and educational research explaining how cooperation emerges and why it matters during the preschool years. Second, it identifies pedagogical conditions that can transform ordinary group activity into genuine collaborative learning. Third, it presents a concrete research design and observation framework that may be used in a future empirical study of five- to six-year-old children. The article is therefore a theoretical and methodological contribution rather than a report of completed experimental results.

2. Theoretical Framework

2.1. Cooperation as shared intentionality

A useful starting point is the concept of shared intentionality. Tomasello and colleagues describe human cooperation as the ability to participate in activities organized around a joint goal, complementary roles, shared attention, and mutual knowledge that the participants are acting together [1]. This formulation is important for preschool pedagogy because it clarifies that cooperation is not simply prosocial behavior. A child may be kind or helpful without participating in a sustained joint plan, and two children may pursue the same activity without understanding it as a shared project. Cooperation becomes structurally visible when participants orient to a common outcome and regulate their contributions in relation to one another.

Developmental evidence shows that the foundations of coordinated action appear early but become more sophisticated over time. Brownell and Carriger found developmental changes in cooperation and self-other differentiation during the second year of life [2]. By the preschool years, children can coordinate complementary roles, recruit a partner, monitor whether the partner is participating, and react when collaboration breaks down. Warneken, Chen, and Tomasello demonstrated that young children can engage in cooperative activities requiring interdependent action [6]. Hamann and colleagues further showed that collaboration influences how young children distribute jointly obtained rewards, suggesting that cooperative effort is linked to emerging expectations of fairness [10].

These findings imply that preschool cooperation should be understood as a multidimensional competence. It includes cognitive elements, such as representing the goal and anticipating steps; communicative elements, such as explaining, requesting, and confirming; social-cognitive elements, such as recognizing a partner's role and viewpoint; and motivational elements, such as remaining committed to

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the shared task. A narrow assessment that counts only verbal exchanges or instances of helping will therefore fail to capture the whole construct.

2.2. Peer interaction, social competence, and emotional regulation

Peer competence develops through repeated participation in increasingly complex forms of interaction. Howes identified developmental sequences in young children's social competence with peers, emphasizing that peer interaction is not a single behavior but a progression from simple social contact toward sustained, reciprocal, and organized activity [3]. The educational significance of this progression is clear: children who can initiate and maintain interaction have more opportunities to practice language, negotiate roles, and receive feedback from peers.

Cooperation also depends on emotional competence. Denham and colleagues showed that preschool emotional competence is closely connected with later social competence [7]. A child who can identify feelings, regulate frustration, and interpret another person's emotional state is better positioned to continue a joint task when disagreement occurs. Emotional regulation is particularly important because collaborative work produces natural moments of tension: two children may want the same material, prefer different designs, or interpret the goal differently. These moments are not failures of pedagogy. When appropriately supported, they are the situations in which cooperation skills become observable and teachable.

Classroom interaction quality shapes the opportunities available for such learning. Mashburn and colleagues found that the quality of teacher-child interactions in prekindergarten classrooms predicted aspects of children's academic, language, and social development [8]. Bierman and colleagues demonstrated that an integrated preschool intervention could strengthen social-emotional school readiness alongside academic readiness [9]. Together, these studies support a view of cooperation as part of the broader ecology of classroom quality: group tasks are more productive when they occur in an emotionally supportive environment where teachers model respectful communication, establish predictable routines, and respond to conflict without taking control of every decision.

2.3. Cooperative problem solving, planning, and peer learning

Cooperative problem solving adds an intellectual dimension to joint activity. Gauvain and Rogoff showed that collaboration can contribute to children's planning skills when partners coordinate their knowledge and actions [4]. Azmitia's study of five-year-old children demonstrated that peer interaction may support problem solving under particular conditions, especially when partners bring complementary competence and the task permits them to exchange strategies [5]. These findings caution against the simplistic assumption that any pair will automatically outperform an individual. Group composition, task structure, and the quality of interaction determine whether the social setting becomes cognitively productive.

Ramani and Brownell argue that play provides a particularly suitable context for preschool cooperative problem solving because children can create and sustain joint goals more naturally in play than in tightly controlled laboratory tasks [11]. The flexibility of play allows children to negotiate what the object represents, what roles are required, and how the activity will continue. This flexibility does not mean that adults have no role. Rather, the adult creates conditions in which children retain agency while receiving enough support to remain oriented to the common task.

Guided play provides a useful pedagogical balance. Weisberg and colleagues describe guided play as a child-centered context with an explicit learning goal and sensitive adult guidance [12]. In cooperative tasks, guidance may involve posing an open question, drawing attention to a partner's idea, or asking how two separate products could be combined. It should not consist of assigning every action or resolving every disagreement for the children. When support is too directive, children may complete the product successfully while having few opportunities to practice planning, negotiation, and conflict resolution.

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2.4. Play-based pedagogy and recent intervention evidence

A broad review of play-based pedagogy by Pyle, DeLuca, and Danniels shows that early-years practice exists along a continuum from free play to highly structured teacher-directed activity [13]. Cooperation can be developed at different points on this continuum, but the mechanisms differ. Free play offers strong child ownership and authentic negotiation, while structured collaborative tasks make the shared goal and interdependence easier to observe. A balanced program should therefore include both naturally occurring peer play and deliberately designed joint tasks.

Recent intervention evidence provides direct support for systematic cooperative play. Lin and colleagues reported that cooperative constructive play strengthened cooperation among five- to six-year-old children in a quasi-experimental study [14]. The relevance of constructive play lies in its material interdependence: children must share space, select and distribute materials, coordinate structural decisions, and respond visibly to the consequences of one another's actions. The joint product becomes an external reference point that supports communication even when children's verbal abilities differ.

The most recent evidence also highlights multimodal communication. Sormunen, Yliverronen, and Rönkkö examined four- to six-year-old children during hands-on collaborative problem solving and identified a progression from solitary activity and side-by-side participation toward action-based and verbally interactive collaboration [15]. Their findings show that gestures, positioning, handling materials, imitation, and embodied support can be as important as speech. This is especially relevant in inclusive preschool groups, where children may differ in language proficiency, confidence, or support needs.

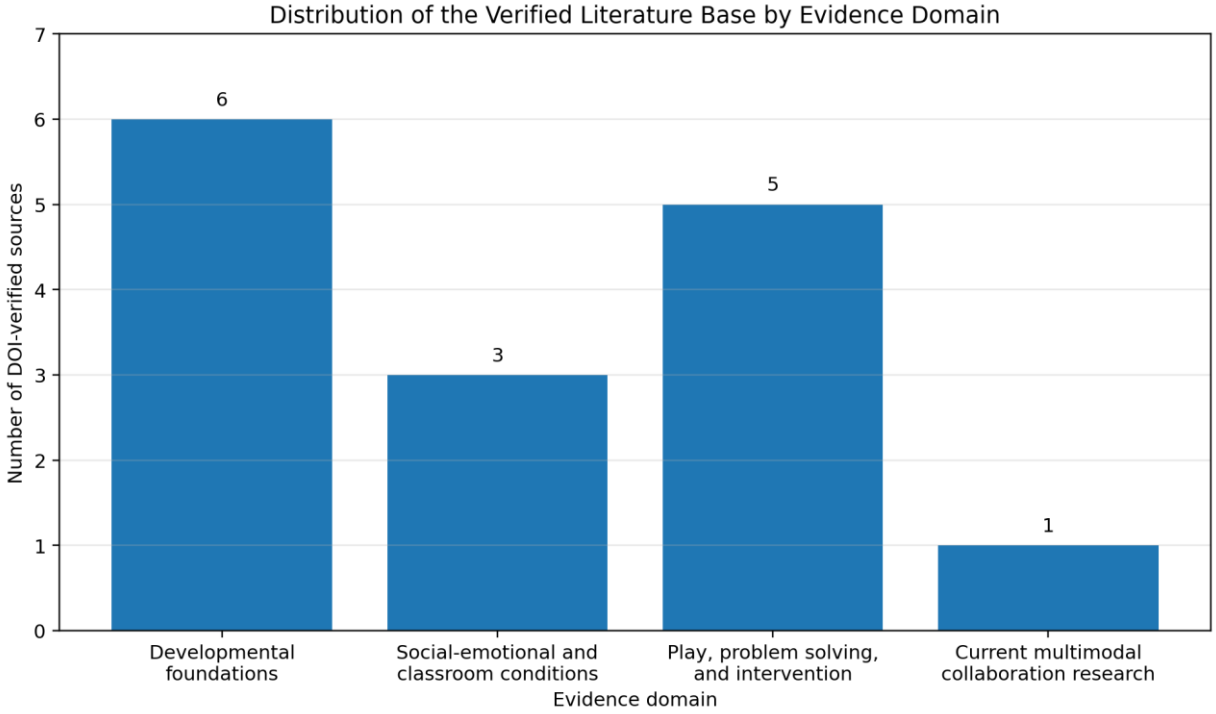


Chart 1. Distribution of the DOI-verified literature base by evidence domain.

Note. The chart is a descriptive evidence map of the fifteen sources retained in the revised manuscript. It does not represent effect sizes or participant data. Sources were coded according to their primary contribution to developmental foundations, social-emotional and classroom conditions, play/problem-solving/intervention, or current multimodal collaboration research.

3. Materials and Methods

3.1. Study design and source verification

The present article uses a theory-building and methodology-development design. It combines a focused narrative synthesis of peer-reviewed literature with the construction of a proposed empirical protocol. The literature was selected according to four criteria: direct relevance to cooperation, peer interaction, collaborative problem solving, play-based learning, or social-emotional competence in early childhood; publication in a traceable scholarly outlet; availability of a verifiable DOI; and sufficient

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methodological or theoretical detail to support the article's framework. The retained literature spans foundational developmental studies and recent intervention and multimodal research.

Reference verification was conducted by matching author names, article title, journal, year, volume, page range or article number, and DOI against publisher pages, PubMed records, or DOI landing pages. Sources that could not be confirmed at this level were excluded from the revised reference list. This procedure does not establish that every retained study has equal methodological quality; rather, it ensures that the citations correspond to identifiable publications and that readers can retrieve the original record.

3.2. Proposed participants and setting

A future empirical study may recruit approximately sixty children aged five to six from two or more comparable preschool groups. The use of more than one classroom is preferable because cooperation is influenced by classroom climate, teacher practices, friendship patterns, and previous experience with group activity. Children should be assigned at the classroom or subgroup level rather than individually when individual randomization would disrupt established educational routines. One group would receive a structured cooperation-focused program, while the comparison group would continue with the regular curriculum.

Participation should require parental or guardian consent and age-appropriate child assent. Children should be free to decline a video-recorded task or leave an activity without academic or disciplinary consequences. Personal identifiers should be replaced with codes, recordings should be stored securely, and publications should use aggregated results or anonymized behavioral examples. Children with language differences or additional support needs should not be excluded automatically; instead, the observation system should recognize nonverbal participation and embodied communication, consistent with recent multimodal research [15].

3.3. Proposed formative program

The formative program may run for twelve weeks, with two cooperation-focused sessions per week. Each session would last approximately twenty-five to thirty minutes and include four phases. First, the educator introduces a meaningful common goal, such as constructing a bridge for toy animals, creating a shared map, preparing a group collage, designing a shelter, or dramatizing a story. Second, children examine the available materials and propose possible roles. Third, the group completes the task while the educator observes and provides calibrated prompts only when interaction has stalled or exclusion has become persistent. Fourth, the children briefly reflect on what helped the group work together.

Task difficulty should increase gradually. Early tasks may involve pairs, a limited set of materials, and two clearly complementary roles. Later tasks may involve groups of three or four, several possible solutions, and roles that must be renegotiated during the activity. Progression is essential because a task that is too easy may require little coordination, whereas a task that is too difficult may create frustration that overwhelms the children's developing regulatory capacities.

Adult prompts should be standardized sufficiently for research while remaining natural for preschool practice. Examples include: 'What are you making together?'; 'How will each person help?'; 'I heard two different ideas—how can the group decide?'; 'What does your partner need to continue?'; and 'What could you change so both parts fit?' These prompts direct attention to the process of cooperation without providing the solution. Educators should avoid praise that focuses only on speed or the final product, because this can encourage dominant children to take over. Feedback should instead acknowledge observable collaborative processes, such as listening, combining ideas, or helping a partner re-enter the activity.

3.4. Proposed observation instrument

The revised paper proposes a Cooperation Skills Observation Rubric for Preschool Children. The rubric is not presented as a previously validated standardized test; it is a research instrument to be piloted and refined. It organizes observation into five domains derived from the verified literature: shared goal

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maintenance, role coordination, communication and negotiation, mutual assistance, and constructive conflict resolution. Each domain is scored from 0 to 3, where 0 indicates that the behavior is absent or the interaction breaks down, 1 indicates emerging and inconsistent performance, 2 indicates functional performance with occasional adult support, and 3 indicates sustained independent performance.

Table 1

Operational Framework for Observing Preschool Cooperation Skills

Domain	Core question	Examples of observable behavior	Score interpretation
Shared goal maintenance	Do children orient to one joint outcome?	Refer to a common product; monitor group progress; return attention to the shared task.	0 absent; 1 unstable; 2 functional with support; 3 sustained independently
Role coordination	Are actions divided and connected?	Propose roles; accept or renegotiate roles; sequence complementary actions.	0 parallel/competing actions; 1 unclear division; 2 coordinated with prompts; 3 flexible independent coordination
Communication and negotiation	Do children exchange and combine ideas?	Explain, ask, listen, clarify, gesture, compare alternatives, and reach a decision.	0 no exchange; 1 one-sided exchange; 2 reciprocal with support; 3 sustained reciprocal negotiation
Mutual assistance	Do children respond to partners' needs?	Share materials, demonstrate, wait, encourage, offer help, and invite participation.	0 obstructs/ignores; 1 occasional help; 2 appropriate help with prompts; 3 spontaneous and well-calibrated help
Conflict resolution	Can disagreement be repaired constructively?	Name the problem, propose compromise, use turn-taking, accept revision, and resume joint work.	0 task ends/escalates; 1 adult solves; 2 children solve with prompts; 3 children resolve and continue independently

The composite score ranges from 0 to 15, but the domain profile is more informative than the total alone. Two groups may obtain the same total for different reasons: one may communicate well but divide roles poorly, while another may coordinate actions effectively with little verbal discussion. The rubric should therefore be analyzed both by domain and as a composite measure. Observers should also record short field notes describing the interactional sequence, because a numerical score cannot show how a conflict began, how a child was excluded, or which prompt enabled the group to recover.

3.5. Reliability and validity procedures

Before the main study, the rubric should be reviewed by experts in preschool pedagogy, developmental psychology, and educational measurement. A pilot with approximately ten to fifteen children can identify unclear indicators and tasks that do not create genuine interdependence. At least twenty percent of the video recordings should be coded independently by two trained observers. Agreement may be evaluated with weighted kappa for individual ordinal domains and an intraclass correlation coefficient for the composite score. Disagreement should be resolved only after independent scores have been preserved, so that reliability estimates are not artificially inflated.

Content validity would be supported by linking each domain to the literature and by expert review. Construct validity may be explored by testing whether the five domains are positively related but not redundant. Sensitivity to change would be examined by comparing pre-intervention and post-intervention scores. Ecological validity requires tasks that resemble meaningful preschool activity rather than abstract tests. For this reason, at least two task types should be used, such as a joint construction task and a collaborative story or art task.

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3.6. Proposed data analysis

Baseline comparability should be examined for age, attendance, language background, and initial cooperation scores. Because the rubric produces ordinal domain scores and the expected sample is modest, analyses should not rely automatically on normal-distribution assumptions. Within-group change may be tested using the Wilcoxon signed-rank test, and post-intervention group differences may be examined with the Mann-Whitney U test after inspecting baseline balance. A more informative approach, if the sample and distribution permit, is an ordinal mixed-effects model with time, group, and their interaction as fixed effects and child or dyad and classroom as random effects.

Statistical significance should be accompanied by effect sizes and confidence intervals. The analysis should also report participation and implementation fidelity: how many sessions each child attended, how often the planned tasks were completed, and whether educators used prompts consistently. Qualitative field notes and selected anonymized interaction sequences can explain why a score changed. This mixed-methods logic is particularly suitable for cooperation, because the same numerical improvement can emerge through different developmental pathways.

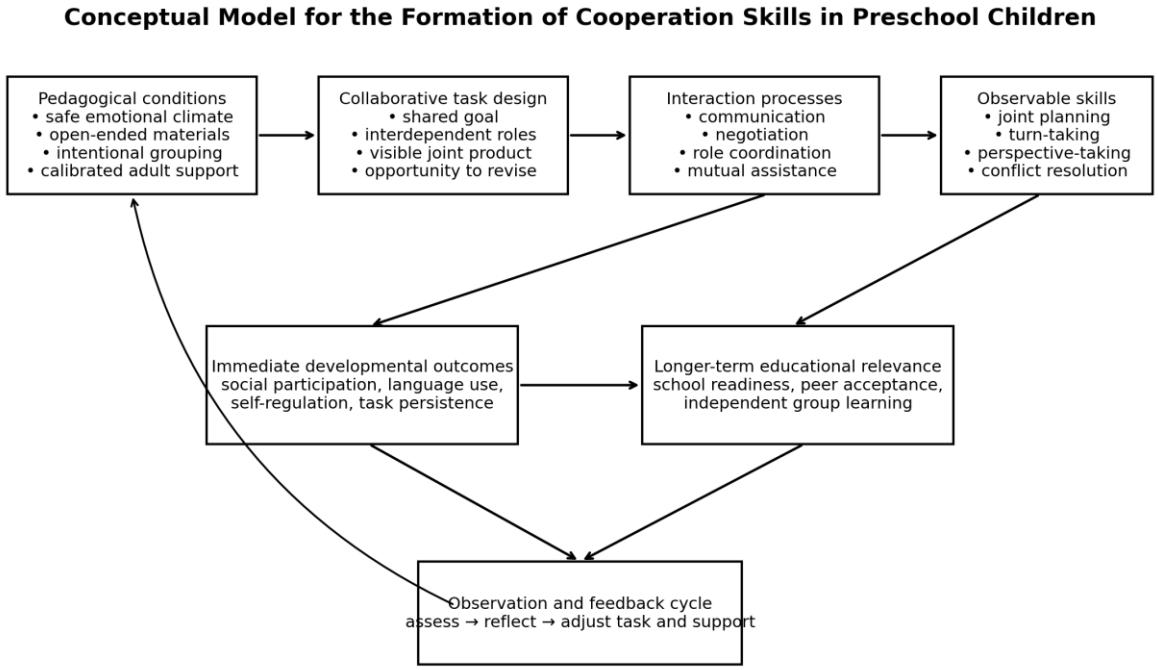


Figure 1. Conceptual model for the formation and assessment of cooperation skills in preschool children.

Note. The model treats cooperation as the result of an interaction between pedagogical conditions, collaborative task design, children's communication and coordination processes, and iterative observation. The arrows represent hypothesized pathways to be tested in future empirical research.

4. Results of the Literature Synthesis

4.1. Cooperation is goal-dependent rather than proximity-dependent

The first consistent finding is that a shared goal is the organizing feature of cooperation. Children sitting together or using the same materials are not necessarily cooperating. Genuine collaboration becomes more likely when the task has one visible outcome that cannot be completed efficiently by isolated parallel action. Shared intentionality research explains why common knowledge of the goal matters [1], while cooperative activity studies show that young children can coordinate complementary roles when the structure of the task makes interdependence meaningful [6].

This result has direct implications for task design. An instruction such as 'everyone draw a house' creates a group setting but not necessarily a joint goal. An instruction such as 'create one neighborhood on this large sheet, with roads that connect every house' creates interdependence and gives children a reason

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to communicate. The joint product also functions as an external memory: children can point to it, compare parts, and identify what remains to be done.

4.2. Cooperation combines social, emotional, and cognitive processes

The second result is that cooperation cannot be reduced to social politeness. Planning, monitoring, and revising are cognitive processes; listening and explaining are communicative processes; waiting and tolerating disagreement involve emotional regulation; and recognizing a partner's contribution involves social cognition. Research on emotional competence [7], planning [4], peer problem solving [5], and classroom interaction quality [8] converges on this integrated view.

For assessment, this means that educators should not classify a quiet child automatically as uncooperative. A child may contribute through careful material selection, imitation, timing, or nonverbal coordination. Conversely, a highly verbal child may dominate the task without integrating partners' ideas. Multimodal observation is therefore necessary, particularly in linguistically diverse and inclusive settings [15].

4.3. Productive conflict is part of learning to cooperate

The third result is that disagreement is not the opposite of cooperation. It is one of the conditions through which cooperation develops. Children need experience expressing different preferences, hearing reasons, proposing alternatives, and returning to a shared task. If adults eliminate every conflict immediately, children may remain dependent on external authority. If adults ignore persistent exclusion or escalation, the task may become emotionally unsafe. Effective scaffolding lies between these extremes.

A useful educator response is to clarify the problem without deciding the outcome: 'You both want the long block, and the bridge needs two sides. What can the group do?' This type of prompt protects participation while leaving the children responsible for negotiation. The observation rubric therefore treats constructive conflict resolution as a distinct domain rather than as the absence of conflict.

4.4. Play and construction tasks offer complementary advantages

The fourth result is that play-based and structured tasks should not be treated as mutually exclusive. Free or child-initiated play offers ownership, imagination, and authentic role negotiation. Guided play preserves child agency while focusing attention on a pedagogical goal [12]. Structured construction tasks create visible interdependence and make collaboration easier to observe. Reviews of play-based pedagogy emphasize that quality depends on how freedom and guidance are combined rather than on selecting one pure model [13].

Constructive play appears especially promising for intervention because it produces a shared object and repeated opportunities for planning and revision. The recent quasi-experimental findings of Lin and colleagues support the use of cooperative constructive play with five- to six-year-old children [14]. Hands-on problem-solving research also demonstrates that materials and embodied action can support collaboration when verbal communication is still developing [15].

4.5. Adult support should be calibrated and temporary

The fifth result concerns the educator's role. Cooperation does not emerge reliably from nonintervention, but excessive direction can remove the very decisions children need to practice. Effective support is contingent: the educator observes the specific barrier, offers the least intrusive prompt likely to restore productive interaction, and then withdraws. Support may focus on the goal, participation, communication, or regulation, depending on the problem.

For example, if a group has no shared plan, the educator may ask what the completed product should do. If one child is excluded, the educator may ask the group which role is still needed. If children cannot choose between ideas, the educator may suggest testing both or combining elements. The purpose is not to ensure a perfect product but to increase children's capacity to manage the next collaborative problem with less assistance.

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5. Discussion

The literature synthesis supports a developmental-pedagogical model in which cooperation is learned through repeated participation in meaningful, interdependent activity. The model differs from approaches that rely on verbal instruction about being friendly or sharing. Rules and stories may introduce expectations, but skills become functional only when children must apply them while pursuing a real common goal. Cooperation is therefore best understood as situated performance that gradually becomes more stable and transferable.

The proposed five-domain framework extends the original paper's emphasis on shared goals, division of functions, and positive relationships. Shared goal maintenance and role coordination preserve those central elements, while communication, mutual assistance, and conflict resolution make the interactional process more observable. This expanded framework also reflects evidence that cooperation may be expressed verbally and nonverbally, and that emotional regulation is essential to sustaining joint activity.

The framework has practical value because it separates the child's current performance from the educator's support. A score of 2 indicates that the behavior is functional with occasional prompting, whereas a score of 3 indicates independent and sustained use. This distinction allows educators to observe developmental progress even when the final product looks similar. It also prevents adult-assisted completion from being misinterpreted as independent cooperation.

The framework should not be used to label children as cooperative or uncooperative personalities. Performance is task- and context-dependent. A child may coordinate effectively with a familiar friend but withdraw in an unfamiliar group; another may perform well in construction but struggle in dramatic play. Repeated observation across partners, tasks, and days is necessary. The educational goal is to broaden each child's repertoire and participation, not to rank children publicly.

The proposed design also recognizes that cooperation develops within relationships and classroom systems. Teacher interaction quality, group composition, friendship, language proficiency, attendance, and previous experience can all influence performance. A future empirical study should therefore report these contextual factors rather than attributing every change to the intervention. Including more than one classroom and modeling classroom-level variation would strengthen the evidence.

The verified literature also reveals an important balance between developmental appropriateness and methodological rigor. Natural play captures authentic cooperation but can be difficult to compare because goals and materials vary. Standardized tasks support comparison but may reduce children's ownership. Using two complementary tasks and combining ordinal scoring with qualitative interaction sequences offers a practical compromise. Video recording, where ethically approved, permits repeated observation of gestures, timing, and subtle forms of support that may be missed in real time.

6. Practical Recommendations for Preschool Educators

First, design tasks around one meaningful common outcome. A shared mural, bridge, model town, puppet performance, garden plan, or group story is more likely to generate coordination than identical individual worksheets. The task should make each contribution visible and should require children to connect their work.

Second, begin with pairs and gradually move toward groups of three or four. Pairs reduce coordination demands and make participation easier to observe. Larger groups provide richer opportunities for role distribution and negotiation but also increase the risk of passive participation or dominance.

Third, use materials that invite more than one solution. Open-ended blocks, recycled construction materials, large-format paper, loose parts, puppets, and story cards allow children to combine ideas. Materials should be sufficient for exploration but not so abundant that children can complete separate products without interaction.

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Fourth, teach the language of cooperation in context. Useful sentence frames include 'What is our plan?', 'Can you show me your idea?', 'Which part will you do?', 'I need help with…', 'Let us try both ideas', and 'How can we fix this together?' These expressions should be modeled during real tasks rather than memorized in isolation.

Fifth, observe before intervening. Short pauses are developmentally productive because children need time to initiate, process, and respond. Intervention is necessary when safety, dignity, or participation is at risk, but ordinary uncertainty should not be mistaken for failure.

Sixth, end tasks with brief reflection. Children may be asked what helped the group, when the plan changed, how a disagreement was solved, or what they would do differently next time. Reflection converts an experience into language and helps children recognize cooperation as a process they can intentionally improve.

Seventh, communicate with families about the purpose of cooperative tasks. Parents may focus primarily on the appearance of the final product. Educators can explain that a less polished group construction may represent more valuable learning if children planned, negotiated, and revised it themselves.

7. Limitations and Directions for Future Research

This article does not report primary data, and the proposed intervention and observation rubric must not be represented as empirically validated. The literature synthesis is focused rather than systematic; it was designed to construct a practical framework, not to estimate an overall effect size. Although all retained sources were bibliographically verified and have DOI records, they differ in design, cultural context, participant age, and outcome measures.

The proposed rubric requires pilot testing, expert review, inter-rater reliability analysis, and examination of construct validity. Its four-level scoring system may need revision if observers cannot distinguish adjacent categories consistently. Future research should also evaluate whether the rubric functions similarly across languages, cultures, disability categories, and preschool curricula.

A single-institution quasi-experiment would provide useful initial evidence but would remain vulnerable to teacher effects, friendship networks, and selection bias. Stronger future designs could include several institutions, cluster randomization, blinded video coding, delayed follow-up, and measures of transfer to ordinary free play. Research should also examine whether gains persist when children work with unfamiliar peers and whether cooperation predicts later school adjustment.

8. Conclusion

Cooperation in preschool children is a complex, teachable competence rather than an automatic result of group attendance. It develops when children repeatedly participate in meaningful activity organized around a common goal, complementary contributions, communication, mutual support, and opportunities to resolve disagreement. Play, guided activity, and joint construction each provide valuable contexts when they preserve child agency and create real interdependence.

The revised paper replaces unverified references with a coherent set of fifteen DOI-confirmed scholarly sources and translates that evidence into a practical methodological framework. The proposed observation rubric and quasi-experimental design offer a transparent basis for future empirical work. Their central implication is that educators should evaluate not only whether children complete a group product but how they plan, coordinate, communicate, assist one another, and recover from conflict. When these processes are intentionally scaffolded and observed, preschool cooperation can contribute to social participation, emotional regulation, language development, problem solving, and readiness for later collaborative learning.

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