

Enhancing Children's Intelligence Quotient Through Indigenous Play: A Study of Ibibio Traditional Games in Uyo, Nigeria.

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ABSTRACT

This study examines the potential of indigenous Ibibio traditional games to enhance the Intelligence Quotient (IQ) of children in selected schools within Uyo Local Government Area, Akwa Ibom State, Nigeria. Framed against a global resurgence of interest in culturally responsive pedagogy, the study interrogates structured participation in play activities rooted in Ibibio culture. A mixed-methods design combining historical and ex post facto approaches was adopted. Sixty pupils and students drawn from two primary schools and one secondary school completed identical pre-test and post-test cognitive assessments bracketing a week of structured play involving six Ibibio games, including *Abukpok Nsa* and *Nsa Ison*. Qualitative data gathered through interviews with teachers in a focused group discussion, and face-to-face interviews with ten teachers. The study is theorised through Vygotsky's Sociocultural Theory and Csikszentmihalyi's Flow Theory. Findings indicate consistent, though uneven, improvement in post-test scores across all three schools, concentrated in memory recall, logical reasoning, and problem-solving, alongside near-unanimous teacher recognition of the developmental value of traditional games. The study concludes that Ibibio traditional games constitute an underused cognitive and cultural resource and recommends their deliberate incorporation into curricula, particularly for mathematical and logical reasoning instruction, alongside institutional support for teacher training and cultural documentation.

Keywords: *Ibibio Traditional Games, Intelligence Quotient, Cognitive Development, Indigenous Knowledge Systems, Sociocultural Theory.*

1. INTRODUCTION

Play is among the most consistent features of human childhood, and its treatment as a serious subject of scholarly inquiry dates at least to the beginning of the twentieth century, when reformers began to reconceive the child as a developing subject with distinct recreational, educational, and psychological needs (Corbin Dan 1970). Ellen Key's prediction that the twentieth century would become "the century of the child" anticipated a broader shift in educational philosophy, carried forward by reformers such as Friedrich Froebel and Johann Heinrich Pestalozzi, toward child-centred, experiential, and play-based learning. That shift has produced the kindergarten movement and more durably, a recurring scholarly conviction that play is not merely recreational but developmental: a medium through which children rehearse cognition, negotiate social roles, and internalise the values of their communities to avoid the distraction of the social media age.

According to Mbede et al. (2024), "creative industries need not depend on analog and traditional tools of play production, there should be suitable infrastructural and structural transition in the infusion of digital arts to ensure compatibility to international levels in terms of technical training and equipment in the theatre in a manner that the greatest benefits to the greatest number of people" (p. 155). Within this broader trajectory, indigenous and traditional games occupy an ambiguous

position. On one hand, they are widely credited, across cultures, with embedding structured cognitive and social challenge inside activities children willingly repeat: counting and calculation in mancala-type games, spatial and strategic reasoning in board games, memory and pattern recognition in guessing games. On the other hand, traditional games are increasingly displaced by digital and imported forms of entertainment, a displacement that risks the loss of both a pedagogical resource and a cultural inheritance. This tension is especially visible among the Ibibio people of Akwa Ibom State, Nigeria, where games such as *Abukpok Nsa*, *Nsa Ison*, *Ekak*, *Akpokoro*, and *Ata Nsi Iyak* have historically combined entertainment with the tacit transmission of arithmetic reasoning, strategic thinking, and communal values, yet are increasingly unfamiliar to children raised on smartphones and imported board games and the traditional games have not received the kind of publicity that can place it on the global map of pedagogical relevance.

Mbede et al. (2024) corroborates that, “In the light of the evident global shift, it becomes essential for theatre practitioners to reinvent the mode and modalities for publicity and production participation through the integration of socially driven electronic devices to enhance the reach and output of theatrical productions” (p. 96). However, Nigeria's education policy discourse has, for the most part, emphasised formal academic structures over indigenous and digital pedagogical resources. A tendency that risks overlooking culturally embedded practices capable of contributing to the national agenda of intellectual development.

Locally, within Ibibio communities, a wealth of traditional games exists, passed down through generations and characterised by rhythmic structure, problem-solving demands, and social interaction. Despite this potential, such games are increasingly overshadowed by contemporary forms of entertainment, a decline that has produced both a loss of practice and, notably, an underestimation of their developmental benefits. It is against this background that the present study investigates the extent to which structured participation in Ibibio traditional games can enhance children's cognitive performance, while also documenting the extent to which teachers and caregivers currently recognise and use that potential. The problem this study addresses is therefore twofold. First, there is a scarcity of empirical evidence, specific to Ibibio traditional games, on their contribution to children's intellectual development; existing scholarship on traditional games and cognition draws predominantly on games from Indonesia, Pakistan, and non-Ibibio Nigerian contexts, none of which speak directly to the games under study here. Second, even where the developmental value of play is broadly acknowledged by teachers and parents, that recognition rarely translates into deliberate classroom use, leaving a gap between what educators believe about traditional games and what they do with them.

This study examines how participation in Ibibio traditional games enhances children's learning abilities and to assesses the impact of such games on the children's social interaction, teamwork, and communication; to evaluate the effect of integrating Ibibio games into classroom learning. This will contribute to the discourse on culturally responsive teaching by highlighting the value of indigenous knowledge systems in education. The documentation of the Ibibio traditional games as a means of preserving them for future generations. The broader plausibility of this undertaking is supported by a wider, cross-cultural pattern of interest in indigenous play as an educational resource. Researchers in Indonesia have examined how regionally specific traditional games contribute to children's interpersonal skill; researchers in Pakistan have catalogued the developmental value attributed to games particular to that country; and researchers working within Nigeria, though not within Ibibio contexts specifically, have documented cognitive benefits associated with indigenous board games elsewhere in the country. It is precisely this limitation that the present study addresses for the Ibibio case. Practically, it speaks to an ongoing public conversation about the effects of screen time on childhood development, offering traditional play as a low-cost, culturally grounded alternative or complement to digital recreation.

2. LITERATURE REVIEW

Conceptual Framework

Before the theoretical and empirical apparatus can be usefully applied, two foundational concepts,

game and intelligence, require clarification; since both have attracted contested and overlapping definitions across the philosophical, psychological, and design literatures on which this study draws. Attempts to define “game” as a single, bounded concept have a long and largely inconclusive history. Johan Huizinga’s foundational account treats play as older than culture itself, describing it as the generative basis of language, law, war, philosophy and art. This positioning situates games not as a derivative or trivial human activity but as a condition of culture’s very possibility – in this case that of the Ibibio culture. Ludwig Wittgenstein (1953) submits that, “by contrast, argues that, “no single defining feature unites all the activities called games; rather, games share a network of overlapping family resemblances. much as members of a family resemble one another through partial, shifting similarities of feature rather than through one shared trait”. Roger Caillois (1958) offers a more analytically tractable account, proposing “six defining characteristics of games: they are freely entered rather than obligatory; separate from ordinary routines of time and space; uncertain in outcome; unproductive of material wealth; governed by rules that suspend everyday norms of conduct; and structured around make-believe, the deliberate construction of an imagined reality set against ordinary life”. Chris Crawford, writing from a design rather than an anthropological standpoint, defined games as interactive systems built around goals, rules, and player decision-making, distinguishing games from toys (which lack goals), puzzles (which lack an active opposing agent), and non-competitive challenges. Read together, these accounts converge on a working definition sufficient for the purposes of this study: a game is a voluntarily entered, rule-governed activity, separate from ordinary routine, that presents players with meaningful decisions or challenges toward an uncertain outcome. Ibibio traditional games such as *Abukpok Nsa*, a board game requiring the strategic distribution of seeds across pits, and *Ata Nsi Iyak*, a guessing game built around specialised vocabulary, satisfy this definition comfortably, while also exhibiting the culturally specific, communally transmitted character that Huizinga’s account of play as a generative cultural force helps to explain.

Intelligence, and its operationalisation as an Intelligence Quotient (IQ), is comparably contested. Rather than adjudicate between competing psychometric models, this study adopts a working orientation, consistent with J. P. Guilford’s structural account of intelligence as encompassing multiple discrete cognitive operations rather than a single unitary capacity, and with the applied tradition represented by instruments such as the Wechsler Intelligence Scale for Children, which assesses verbal comprehension, perceptual reasoning, working memory, and processing speed as distinguishable, separately measurable domains. This multi-domain orientation is reflected directly in the study’s pre-test and post-test instrument, which sampled logical reasoning, analogies, syllogisms, number series, pattern recognition, and verbal intelligence, rather than relying on a single composite score, precisely because the cognitive demands of different Ibibio traditional games, arithmetic calculation in *Nsa Ison*, spatial-strategic reasoning in *Abukpok Nsa*, associative recall in *Ata Nsi Iyak*, are not uniform and should not be expected to produce uniform gains on a single-domain measure.

Enhancing children’s IQ, so understood, carries academic, social, and developmental significance beyond test performance itself (Akpan et al, 2024). Higher measured cognitive ability is associated with stronger problem-solving and critical-thinking capacity, more effective decision-making, and greater adaptive flexibility in novel situations; at the social level, children with stronger cognitive and communicative capacity tend to report easier peer relationships and greater self-confidence; and at the level of long-term outcomes, early cognitive advantage is frequently associated, in the developmental literature, with a greater range of future educational and occupational opportunity (Akpan, 2024). These broader stakes justify treating the games examined in this study not merely as recreational curiosities but as potentially consequential developmental resources. A substantial developmental-psychology literature independently supports the proposition that play, in general, confers measurable cognitive and social benefits. Early and sustained play has been linked to stimulation of brain development during the period of maximal synaptic proliferation; to gains in measured intelligence following sustained infant engagement with manipulable toys; to sparks in creative and divergent thinking, demonstrated experimentally where children engaged in open-ended play with unstructured materials outperformed peers engaged in rote copying tasks on subsequent

creativity assessments; to improvements in communication, vocabulary, and language development, particularly through pretend-play's demands on reciprocal, negotiated language use; to growth in social competence and empathy through the negotiation, turn-taking, and rule-following that unstructured peer play requires; to improvements in physical and mental health through emotion regulation and motor development; to the rehearsal of life lessons and future social roles through pretend enactment of difficult or unfamiliar situations; and to the strengthening of intergenerational bonds, as when parents and children share a traditional game such as *Nsa Ison* or *Abukpok Nsa* across generations. Ibibio traditional games, on this account, are not exceptions to a general pattern documented for play worldwide but culturally specific instances of it, distinguished chiefly by the particular cognitive domains, arithmetic calculation, spatial strategy, associative memory, moral instruction, that their specific rule-structures happen to emphasize.

Existing empirical scholarship on traditional games and cognition, however, has developed almost entirely outside the Ibibio context. Herlini Melianasari's study of interpersonal-skill development through traditional games centred on games specific to Yogyakarta, Indonesia, and explicitly argued against the wholesale adoption of foreign models in place of local ones, a methodological caution this study takes seriously by confining its own claims to Ibibio games rather than assuming their equivalence to games studied elsewhere. Saima Khalid's account of the value of traditional games examined eight games played in Pakistan, none corresponding to any game practised in Ibibio land. Akpan's study of traditional board games and cognitive skills among Nigerian children, closer to home, examined Oware, Damii, and Ludu, none of which form part of the active repertoire of games played by Ibibio children. This pattern leaves a clear and, until now, unfilled gap: no existing study has examined whether Ibibio-specific traditional games such as *Abukpok Nsa*, *Nsa Ison*, and *Ata Nsi Iyak* confer the cognitive benefits that comparable traditional games have been shown to confer elsewhere. This paper addresses that gap directly.

Theoretical Framework

The study is anchored on two complementary theoretical perspectives: Lev Vygotsky's Sociocultural Theory and Mihaly Csikszentmihalyi's Flow Theory. Together, these frameworks address, respectively, the social mechanism through which play produces learning, and the psychological state through which play sustains the engagement necessary for that learning to occur.

Vygotsky's Sociocultural Theory holds that social interaction, particularly dialogue between children and more capable peers or adults, is the mechanism through which cultural values, customs, and beliefs are transmitted across generations, and through which complex thinking itself develops. Cognitive development, in this account, is not a private, internally unfolding process but an outgrowth of social interaction with others and with the surrounding cultural environment. Central to the theory is the concept of the Zone of Proximal Development (ZPD): the space between what a child can accomplish alone and what the same child can accomplish with the guidance of a more capable peer or adult. Vygotsky's account rests on two linked propositions: that a child's intellectual development can be understood only in relation to the historical and cultural context in which it occurs, and that language functions as the primary vehicle through which a society's values and thinking tools are transmitted. Applied to play, Sociocultural Theory suggests that games furnish a social context for learning; through interaction with peers during play, children learn to negotiate, cooperate, and rehearse social roles, trying on behaviours and responsibilities that lie just beyond their current, unassisted competence.

Csikszentmihalyi's Flow Theory addresses a different, though related, question: not how learning is socially transmitted, but why children remain absorbed enough in an activity to benefit from it at all. Flow refers to a state of complete immersion and focused enjoyment in an activity, arising when a task's challenge is well matched to a participant's skill. In flow, attention narrows, self-consciousness recedes, and the ordinary sense of time is suspended. Csikszentmihalyi identifies seven characteristics of flow, of which four are of direct relevance to learners' engagement: a challenging activity that requires and extends existing skill; the merging of action, awareness, and concentration, such that attention is fully absorbed by the task; sustained concentration on the task at hand, undisturbed by peripheral distraction; and clear goals accompanied by timely feedback, which

sustain motivation by making progress visible. Where the challenge of an activity is mismatched to a child's skill, whether through excessive difficulty or triviality, flow, and with it, sustained engagement, fails to occur. Traditional games, by virtue of graduated rules and immediate, visible outcomes, are well positioned to produce the challenge-skill balance flow theory identifies as a precondition for absorbed, self-sustaining engagement.

Both theories additionally caution against treating the effects of traditional games as automatic or context independent. Vygotsky's insistence that development can be understood only relative to its historical and cultural setting implies that a game's developmental value cannot be assumed to travel intact across cultural contexts; a game's capacity to scaffold learning depends on its embeddedness within a specific community's shared meanings and social practices, precisely the embeddedness that distinguishes Ibibio traditional games from imported or generic play materials. Similarly, Csikszentmihalyi's account implies that flow, and the learning it supports, is contingent on a favourable match between challenge and skill; a game pitched above or below a child's current competence will fail to produce flow regardless of its cultural pedigree. These qualifications matter methodologically: they imply that any observed cognitive benefit should be expected to vary with the appropriateness of game selection to a given age cohort, a pattern the study's methodology was designed to detect by deliberately varying game selection between the primary and secondary school cohorts.

The two theories are complementary rather than competing. Sociocultural Theory explains why traditional games, as culturally specific and socially embedded activities, are effective vehicles for transmitting cognitive and social competence: they operate within children's Zone of Proximal Development, scaffolded by more experienced peers and by the accumulated rule-structures of the culture itself. Flow Theory explains the proximate psychological mechanism through which that transmission occurs during any given session of play: well-structured games hold a child's attention long enough, and pleasurably enough, for social learning to take hold. Read together, the two frameworks predict precisely the pattern this study investigates: that children immersed in the socially scaffolded, appropriately challenging structure of Ibibio traditional games should show measurable gains in cognitive performance, gains that are mediated jointly by peer interaction and by the sustained, absorbed attention that well-designed games elicit.

3. METHODOLOGY

The study adopted a mixed-methods design combining historical and ex post facto research approaches. The historical dimension was used to situate Ibibio traditional games within their cultural context and trace their pedagogical relevance; the ex post facto dimension examined outcomes, specifically, changes in cognitive test performance, following participation in games that had already occurred. Both qualitative and quantitative techniques were applied to data generated through WhatsApp-mediated group interviews, a focus group discussion, face-to-face interviews, and field-based pre-test/post-test administration. The study was conducted in Uyo Local Government Area, the capital of Akwa Ibom State in South-South Nigeria, an Ibibio-speaking area with twenty-seven government primary schools and twelve government secondary schools, of which two primary schools and one secondary school were selected for the study. The study population comprised sixty pupils and students drawn from two primary schools and one secondary school (twenty participants per school, evenly split between male and female pupils), together with teachers drawn from two educational WhatsApp platforms (the Inoyo Toro Educational Foundation and Proudly IICSS Staff groups). Qualitative data collection additionally involved a focus group discussion of five teachers and face-to-face interviews with ten teachers. Schools were selected through simple random sampling; within each selected school, cluster sampling was used to draw entire classes into the study, rather than sampling individual pupils, thereby preserving the natural peer-group context in which the games are ordinarily played. First, direct field observation accompanied pupil's participation in the selected games, generating data on age, class, gender, and pre-test/post-test scores. Second, a standardised pre-test, comprising items in logical reasoning, analogies, syllogisms, number series, pattern recognition, and verbal intelligence, was administered to establish each participant's cognitive baseline before game sessions began. Third, following one week of structured

play per school involving *Abukpok Nsa*, *Nsa Ison*, *Ata Nsi Iyak*, *Akpokoro*, *Ekpe Ino Ebod*, and, for the secondary school cohort, *Mkpok Eto*, an identical post-test was administered to detect any change in performance. Fourth, qualitative instruments, structured interview questions, a focus group discussion, and face-to-face interviews, elicited teachers and parent's knowledge and engagement views on the pedagogical use of Ibibio traditional games.

Ibibio Traditional Games as an Intelligent Quotient Booster

Traditional games in Ibibio played by children have been observed to boost the intelligent quotient of the children. Eleven named games including *Abukpok Nsa*, *Nsa Ison*, *Ekak*, *Ekpe Ino Ebod*, *Akpokoro*, and *Ata Nsi Iyak*) has indicated that the repertoire of Ibibio traditional games in active memory exceeds any single researcher-compiled inventory. When asked what lessons the games had taught them, respondents overwhelmingly matched games to strategy and tactics (thirteen respondents), followed by counting (four respondents), guessing (four respondents), calculation (four respondents), and stamina (three respondents), with a single respondent identifying logical reasoning. Respondents further classified specific games by pedagogical domain: *Abukpok Nsa* and *Nsa Ison* were matched to mathematical reasoning, strategy, and tactics; *Ata Nsi Iyak* to mental reasoning; *Ubob Motor* to technical skill; and *Ekon Nke* to moral and civic education. Asked directly whether teachers should apply traditional games to teach specific lessons, all respondents answered in the affirmative, an unequivocal endorsement that stands in tension, as the face-to-face interview data below demonstrate, with actual classroom practice. A five-member focus group of teachers, each also a parent, discussed the developmental and cultural role of play. Discussants agreed unanimously that children's play combines enjoyment with incidental learning, though they diverged on whether learning outcomes depend on the specific game played: two discussants held that learning occurs regardless of game type, one held that outcomes are game-dependent, and the remainder affirmed the general developmental value of play without qualification. All discussants reported encouraging their own children to play, citing physical and intellectual development, the folk observation that active children tend toward brilliance, and games' role in cultivating cooperation and empathy.

Discussion of whether to encourage traditional games specifically, as opposed to play in general, exposed a more contested terrain. One discussant judged traditional games to have gone effectively extinct in practice, though this was immediately qualified by another, who noted that games such as *Akpokoro* persist among girls under the alternative name *Ten-Ten*. A third discussant observed that mobile phones have displaced traditional forms of play, with parents supplying devices that substitute solitary digital engagement for communal traditional games. According to theatre director, Aniebiet Mbede, while a fourth noted that some traditional games, including *Nsa Ison* and *Ludo*, have themselves migrated onto digital platforms, complicating any simple narrative of displacement. One discussant expressed regret that technology had eroded relationships among children, who, in her assessment, had become emotionally detached from peers with whom traditional games would once have fostered direct social bonds, while another lamented the parallel erosion of the moral instruction historically embedded in games such as *Ekon Nke*. Asked directly whether traditional games could improve children's learning abilities and intelligence, all discussants responded affirmatively. When asked which specific games they judged most cognitively beneficial, discussants offered discipline-specific justifications drawn from their own professional and childhood experience: a mathematics teacher identified *Nsa Ison* as brain tasking, owing to its arithmetic demands in seed distribution across pits; another credited *Akpokoro* with teaching counting; a third nominated *Abukpok Nsa* for its demands on logical reasoning, scheming, and tactics; and a fourth, now a physics teacher, traced his own interest in the discipline to childhood construction play with *Ubob Motor* and kite-making. Even the game of *Square*, initially dismissed by one discussant as developmentally inert, was reappraised collectively as a vehicle for stamina, balance, and an intuitive grasp of physical balance transferable to formal physics instruction, prompting one discussant's summary observation that every game carries some potential developmental benefit.

4. IBIBIO TRADITIONAL GAMES: THE GAP BETWEEN RECOGNITION AND PRACTICE

Ten teachers, interviewed individually across the three participating schools, were asked four questions concerning their use and assessment of traditional games. Asked whether they had ever used traditional games as a formal teaching tool inside the classroom, nine of ten answered no; the tenth reported using bottle-tops as counting aids in early childhood instruction, a practical adaptation rather than an intact traditional game. By contrast, all ten teachers reported using or permitting traditional games outside the classroom, during recreational periods, indicating that such games remain a live feature of school life but are confined almost entirely to unstructured, non-instructional time. All ten teachers affirmed that traditional games affect children's emotional and social development, with several specifying psychomotor and language-related benefits, and all ten affirmed, without qualification, that children learn and benefit from playing traditional games. The interview data thus reveal a striking asymmetry: teachers' near-unanimous belief in the developmental and pedagogical value of traditional games coexists with their near-total absence from actual classroom instruction, a gap attributable, on the evidence of the broader interview and focus group data, less to scepticism about the games' value than to constraints of curriculum time and a lack of models for their pedagogical adaptation.

Table 1. Summary of pre-test and post-test score distribution across the three schools.

School	Pre-test: Below Average	Pre-test: Average+	Post-test: Below Average	Post-test: Average+	Net Direction
School One (Primary)	6 / 20	14 / 20	2 / 20	18 / 20	Improved
School Two (Primary)	15 / 20	5 / 20	4 / 20	16 / 20	Improved
School Three (Secondary)	3 / 20 (below)	17 / 20	0 / 20	20 / 20	Improved

Application of Sociocultural and Flow Theory in Ibibio Traditional Games

The pattern evident across all three schools, majority improvement in post-test scores following a structured week of peer-based traditional game play, is consistent with the predictions of both theoretical frameworks underpinning the study. Read through Vygotsky's Sociocultural Theory, the games functioned as socially scaffolded learning environments in which pupils operating within their Zone of Proximal Development were supported by peers already competent in a given game's rules and strategies; the marked concentration of reported learning in strategy, tactics, and calculation, rather than in domains unconnected to any specific game's structure, suggests that cognitive gains tracked the particular scaffolded skills each game embeds, rather than reflecting a generic effect of any active recreation. Read through Csikszentmihalyi's Flow Theory, the sustained, voluntary, week-long engagement pupils displayed with games whose difficulty was neither trivial (as with simple counting games for younger pupils) nor overwhelming (as with the more demanding strategic games reserved for older cohorts) is consistent with a challenge-skill balance sufficient to sustain the kind of absorbed attention flow theory identifies as a precondition for learning to consolidate. The convergence of these two mechanisms, social scaffolding within the ZPD and sustained flow-state engagement, offers a plausible account of why post-test gains, while not universal, were consistent in direction across nearly all sampled pupils and across a range of item types (memory recall, logical reasoning, and problem-solving).

The qualitative findings complicate a straightforwardly optimistic reading, however. The unanimous teacher endorsement of traditional games' pedagogical value, set against their near-total exclusion from formal classroom instruction, indicates that the cognitive resource these games represent is currently activated almost entirely outside the school's instructional structure, during recreation rather than during directed learning. This gap is consistent with, rather than contradictory to, the theoretical account offered above: Sociocultural Theory predicts that unscaffolded, purely recreational play will still support learning within a child's ZPD when a more competent peer is present, but it equally implies that deliberately structured, teacher-mediated play, of the kind absent from nine of ten interviewed teachers' practice, would extend that scaffolding further and more reliably. The consistent but uneven pattern of improvement observed across the three schools, several pupils' scores unchanged, one pupil's score declining, is therefore plausibly attributable in part to the ad hoc, teacher-absent character of the games as currently practiced rather than to any inherent limitation of the games themselves.



Plate 1 and 2: Children playing the game of *Abikpok Nsa* and *Nsa Ison*
Source: Researcher's Field Work, Uyo Local Government (2026)

Although some traditional games have migrated onto digital platforms (*Ludo* and *Nsa Ison*, for instance, now exist as mobile applications). “In the twenty-first century, human interactions have been reshaped by the rise of digital technology. The way people work, talk, love, buy, sell and live life have been remarkably transformed by digital technology” (Mbede Aniebiet, 2024, p. 177). This suggests that the relationship between traditional and digital play is not simply one of displacement but, in some cases, of medium transfer, a nuance with implications for how cultural preservation efforts are framed; digitisation may extend a game's reach even as it alters its social, communally embedded character. Second, the age-graded difference in game selection between the primary and secondary cohorts, and the correspondingly higher baseline and post-test scores recorded at School Three, indicate that the cognitive demands of *Ibibio* traditional games are not uniform but exist along a developmental gradient, from counting-based games suited to younger children to games demanding sustained strategic reasoning, such as *Abukpok Nsa*, more suited to older pupils. This gradient itself constitutes a pedagogically useful finding: it suggests that *Ibibio* traditional games could be sequenced deliberately across a school curriculum in a manner that tracks, rather than ignores, developmental readiness.

These findings carry implications beyond the three schools sampled. Nigerian education policy discourse has, as noted in the introduction, tended to privilege formal, imported academic structures over indigenous pedagogical resources, treating culturally rooted practices such as traditional games as extracurricular at best and educationally irrelevant at worst. The consistent, cross-school pattern of post-test improvement documented here, together with teachers' unprompted, unanimous endorsement of these games' pedagogical value, suggests that this policy orientation understates the instructional potential embedded in indigenous play. Where culturally responsive pedagogy is discussed in Nigerian teacher education, it is frequently treated as a matter of representation, ensuring that classroom examples and materials reflect local culture, rather than as a matter of instructional method in its own right. The evidence assembled

here points toward the latter: not merely including references to Ibibio culture within otherwise conventional instruction, but using Ibibio games themselves as structured, socially scaffolded vehicles for teaching mathematical reasoning, logical thinking, and problem-solving. “New media channels are commonly presented (or misrepresented) to be distractive to the users of traditional communication systems, who reduce the ability of new media to just the ability to excite or sell online” (Mbede, 2026, p. 4). The absence of a control group means that observed post-test gains cannot be attributed to game participation alone, as opposed to test familiarity, maturation over the intervention week, or general classroom exposure occurring concurrently; the sample of sixty pupils across three schools, while sufficient for the exploratory, descriptive aims of the study, limits the generalisability of the findings beyond Uyo Local Government Area; and the pre-test/post-test instrument, while covering a reasonable range of cognitive domains, was not a standardised, psychometrically validated IQ measure, and its results should accordingly be read as indicative of directional cognitive change rather than as calibrated IQ scores in the clinical sense.

5. CONCLUDING REMARKS

Conclusion

This study examined the structured participation in Ibibio traditional games contributes to children’s cognitive development, and whether that potential is currently recognised and used by teachers and caregivers in Uyo Local Government Area. The evidence assembled here supports a qualified affirmative on both counts. Quantitatively, the large majority of the sixty pupils and students tracked across three schools showed measurable improvement in cognitive test performance following one week of structured play involving Ibibio traditional games, with gains concentrated in memory recall, logical reasoning, and problem-solving, and with the magnitude and character of improvement tracking the developmental level of each cohort. Qualitatively, teachers and parents demonstrated near-unanimous recognition of the cognitive, social, and moral value of traditional games such as *Abukpok Nsa*, *Nsa Ison*, and *Ekon Nke*, readily matching individual games to specific pedagogical domains, from mathematical reasoning to civic and moral education.

Yet this recognition remains, at present, largely inert. Traditional games persist overwhelmingly as recreational rather than instructional activity; nine of ten interviewed teachers had never used a traditional game as a formal teaching tool, despite affirming, without exception, that such games benefit children’s learning and development. Ibibio traditional games thus constitute a documented, culturally embedded, and currently underused cognitive resource, one whose pedagogical value is affirmed by those best positioned to judge it, teachers and parents, but rarely translated into classroom practice. Read through the study’s theoretical framework, this pattern is consistent with an account in which traditional games already function, informally, as socially scaffolded learning environments capable of sustaining the absorbed engagement that supports cognitive growth, but whose potential remains only partially realised in the absence of deliberate pedagogical structuring.

The study therefore sets the stage for a more sustained inquiry into the intersection of culture, play, and education. Participation in traditional games appears to support not only measurable cognitive gains but also the emotional regulation, resilience, and capacity to negotiate success and failure that accompany rule-governed social play. As digital and imported forms of recreation continue to compete for children’s attention, the deliberate, curricular integration of indigenous games such as *Abukpok Nsa* and *Nsa Ison* offers a route to intellectual development that is simultaneously culturally affirming and pedagogically sound. The contribution recognises Mbede’s assertion that, “Theatre is a collaborative art which permits the synchronization of human and technical properties of the theatre to achieve an appealing production” Mbede, 2023, p. 1).

Ibibio traditional games and their relationship to children’s cognitive performance, addressing a gap left open by comparable studies conducted on Indonesian, Pakistani, and non-Ibibio

Nigerian games. Second, it demonstrates, through paired qualitative and quantitative evidence, that teachers' strong belief in the pedagogical value of traditional games does not, by itself, produce classroom integration, identifying implementation, rather than persuasion, as the binding constraint on translating indigenous play into instructional practice. Third, by reading its findings jointly through Vygotsky's Sociocultural Theory and Csikszentmihalyi's Flow Theory, the study offers a theoretical account, applicable beyond the Ibibio case, of why culturally embedded traditional games are well positioned to support cognitive development: they combine socially scaffolded peer interaction with the challenge-skill balance necessary to sustain the absorbed engagement on which learning depends.

Recommendations

1. Based on the findings, the study recommends the deliberate incorporation of *Abukpok Nsa* and *Nsa Ison* into the teaching of quantitative reasoning, logical thinking, and problem-solving, given both games' demonstrated alignment with mathematical and strategic cognitive domains in the eyes of teachers who already play and teach them informally.
2. Educational authorities should support in-service training and workshops that equip teachers with concrete, curriculum-mapped methods for adapting Ibibio traditional games to classroom instruction, addressing the gap this study identifies between teachers' belief in the games' value and their near-total absence from formal teaching practice.
3. Schools and educational institutions should integrate indigenous games into a broader, culturally responsive curriculum that acknowledges indigenous knowledge systems alongside conventional pedagogical resources, thereby enriching children's exposure to diverse ways of knowing while affirming local cultural identity.
4. Educational authorities and cultural institutions should invest in the systematic documentation and preservation of Ibibio traditional games, including their rules, materials, and associated oral knowledge, given qualitative evidence in this study that some games are already receding from active community memory even as others persist in adapted, digitised form.
5. Government and school administrations should provide the material and spatial infrastructure, playgrounds, game materials, and dedicated instructional time, needed to support the routine practice of traditional games within schools, rather than leaving their persistence to informal, unstructured recreational time alone.
6. Future research should extend this study's exploratory design with a larger, multi-site sample, a standardised and psychometrically validated cognitive instrument, and a randomised or matched control group, in order to more rigorously isolate the causal contribution of traditional game participation to children's cognitive development.

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