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PRODUCTION AND ACCEPTABILITY OF CLASSROOM DECORATION MATERIALS MADE FROM USED CHILDREN'S CLOTHING

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Abstract
This study produced classroom decoration materials from used children's clothes and assessed their acceptability among stakeholders in resource-constrained educational settings. Survey data from 1,193 stakeholders, teachers, administrators, experts, and parents, in Port Harcourt Metropolis, Nigeria, showed strong consensus that the products produced were acceptable across functional, aesthetic, and expressive variables (grand means 4.15–4.28). Functionally, the products were rated as supporting attention, retention, active participation, and cost reduction; aesthetically, they were rated as enhancing classroom and school appearance; and expressively, they were rated as promoting creativity, cultural identity, and emotional well-being. Production addresses three linked challenges: tight school budgets that limit stimulating classroom resources, a growing textile-waste crisis, and under-stimulating learning environments that fail to use the physical space as a "third teacher." The study calls for policy integration, teacher capacity-building, and community engagement to scale this low-cost, sustainable intervention. Gender-disaggregated analysis found that female respondents consistently rated the produced materials higher than male respondents, with implications for how training is designed. Recommendations include ministry-led training programmes, school-based material-collection systems, and cooperative models for economic empowerment.
Keywords: production, acceptability, upcycled decorations, functional variables, aesthetic variables, expressive variables, teacher training, Nigeria, learning environment

Introduction

Resource scarcity in Port Harcourt's public schools severely limits decorative and instructional materials, undermining the classroom environment's role as a "third teacher" (Strong-Wilson & Ellis, 2020). Many pre-primary and primary schools, particularly in resource-constrained communities, lack materials that support effective learning, leaving classrooms under-stimulating and unable to realise the educational potential of the physical space. Tight school budgets make commercially produced resources difficult to afford, widening disparities between schools.

Port Harcourt is simultaneously facing growing solid-waste pressures, including rising volumes of discarded children's clothing. Although this clothing is typically colourful, safe, and readily available, it is treated as waste rather than as a resource, and its potential as low-cost instructional and decorative material has drawn little attention.

The literature reveals a clear gap: studies address classroom environments and the use of recycled paper or plastics, and textile-waste research focuses on recycling and disposal, but little work connects the two by producing classroom decoration materials from used children's clothing and evaluating their acceptability. This study produces such materials and assesses their functional, aesthetic, and expressive variables, linking economic, environmental, and pedagogical dimensions in a single assessment. Four frameworks ground the study: Constructivist Theory (Piaget, 1954; Vygotsky, 1978), which treats the classroom as a workshop for sensory exploration; Environmental Psychology Theory (Barker, 1968), which predicts that a warmer, more personalised space reduces stress and builds belonging; Resourcefulness Theory (Rosen, 1983), which frames teachers as proactive agents who innovate around constraints; and Experiential Learning Theory (Kolb, 1984), which structures the teacher-training component around doing, reflecting, conceptualising, and experimenting.

Statement of the Problem

Public primary schools in Port Harcourt Metropolis face tight budgets, under-stimulating classroom environments, and a growing volume of discarded children's clothing treated as waste. While it is plausible that this clothing could be produced into classroom decoration materials, there has been no systematic effort to actually produce

such materials and evaluate whether the resulting products are acceptable to stakeholders on functional, aesthetic, and expressive grounds. This study addresses that gap.

Objectives of the Study

The general objective of this study is to produce classroom decoration materials from used children's clothing and determine their acceptability. Specifically, the study seeks to:

1. Produce classroom decoration materials made from used children's clothing.
2. Determine the functional variables of the classroom decoration products produced.
3. Determine the aesthetic variables of the classroom decoration products produced.
4. Determine the expressive variables of the classroom decoration products produced.

Functional, Aesthetic, and Expressive Qualities of Classroom Decoration Materials

Classroom decoration materials support learning functionally by externalising information — anchor charts capture procedural knowledge, word walls build vocabulary, and graphic organisers make abstract concepts tangible — freeing mental resources for higher-order thinking (Strong-Wilson & Ellis, 2020). Materials must also match learners' developmental stage: younger children need concrete, tactile materials that support sensory integration, while older students benefit from more symbolic representations (Hanley et al., 2022), whose permanent visual scaffolds give diverse learners immediate access to reference information — a functional quality of well-produced decoration materials.

Aesthetically, decoration also meets psychological needs for safety, belonging, and emotional regulation. Learning-environment design shapes students' willingness to take the risks deep learning requires (Maxwell, 2023), and familiar, predictable surroundings, reinforced through colour, texture, and personal elements, help students regulate stress and sustain optimal engagement (Vossoughi & Bevan, 2023). Expressively, materials that reflect creativity, culture, and identity give decoration products a symbolic value beyond their instructional use, a theme developed further below.

Economic Considerations in Production

Economic sustainability is an organisation's ability to remain financially stable without depleting its resources; at the local level, this requires flexible labour markets, accessible credit for small enterprises, and social safety nets (Jones & Woodward, 2020). For classroom-decoration production specifically, sustainability rests on three principles: reducing financial dependency, extracting more value from existing resources, and creating value without relying on external supply chains. Schools that systematically repurpose materials realise real cost savings that can be redirected to other priorities (Barrett et al., 2019), and the practice builds resourcefulness as an institutional value that shapes procurement more broadly, a pressing consideration in a city where economic pressure routinely constrains educational resources.

Skills and Capacity Building for Production

Teachers who create their own instructional materials show greater pedagogical creativity and classroom innovation, shifting from "transmitters of knowledge" to "designers of learning experiences" with a deeper grasp of the pedagogy behind what they make (Okoro & Mohammed, 2024). Instructional coaching and capacity-building sustain such innovations over time (Knight, 2022): the process of creating resources builds self-efficacy and reframes teachers as innovative problem-solvers rather than curriculum deliverers. Consistent with this, teachers trained to build materials from local resources show measurable gains in professional competence, greater creativity, more use of visual aids, and higher student engagement (Nwosu & Okeke, 2021).

Environmental Considerations in Production

Producing and disposing of children's clothing carries real environmental costs — new garments require substantial water, chemicals, and energy (Payne, 2021) — and extending a garment's life through reuse is one of the most effective ways to cut that footprint, potentially reducing a garment's carbon impact by up to 70% (Sandvik & Stubbs, 2019). Upcycling activities can build sustainability awareness directly (Kowitvongsa & Bunnag, 2022), and embedding eco-literacy in classrooms helps prepare environmentally responsible citizens (Madike, 2023). Sari and Utami (2022) further show that recycled-fabric materials strengthen cognitive and motor skills in young learners, evidence that environmental and educational goals can be pursued together rather than traded off.

Cultural and Community Considerations

Community involvement in producing low-cost educational resources sustainably increases material availability while building participants' ownership and pride, strengthening school-community relationships (Eze & Nwankwo, 2022) — consistent with evidence that strong school-community partnerships improve educational outcomes and resource-sharing more broadly (Ishimaru, 2020) and with the wider role of social capital in local development, including education (Woolcock, 2016)

Production of Classroom Decoration Materials from Used Children's Clothing

In line with the first objective, classroom decoration materials — including welcome banners, name plates, alphabet mats, colour-wheel charts, and fabric collage art — were produced from used children's clothing through four broad stages.

i. Material collection and sorting: Used children's clothing was collected from parents, guardians, and the community, then sorted by fabric type, colour, and condition to identify pieces suitable for reuse.
ii. Design and cutting: Suitable fabric pieces were cut into shapes and patterns appropriate to the intended decoration item, guided by basic design considerations of colour combination and balance.
iii. Assembly and decoration: Cut fabric pieces were arranged and fixed onto a firm base (such as cardboard) using fabric or hot glue, with embellishments such as buttons, ribbons, or beads added for visual and expressive effect, and labels or names added using permanent or fabric markers where required.
iv. Finishing and maintenance: Finished products were trimmed, smoothed, and where possible sealed or laminated for protection, with basic care guidance provided to extend the products' durability in the classroom.

The classroom decoration products resulting from this process were then presented to teachers, administrators, and experts for assessment of their acceptability, in line with the second, third, and fourth objectives of the study.

Methodology

This study used a mixed-methods explanatory sequential design, combining the production of classroom decoration materials with a structured acceptability assessment. It was conducted in Port Harcourt Metropolis, Rivers State, Nigeria (population approx. 1.9 million; National Bureau of Statistics, 2024), drawing on a target population of 150,150 across six stakeholder groups: public primary school teachers (690), pupils (11,800), school administrators (60), parents/guardians, market sellers of educational materials (120), and textile/clothing or art-education experts (30). A sample of 1,193 was drawn using a mix of probability and non-probability techniques. The main instrument was the Questionnaire for Teachers, which asked respondents to rate the acceptability of the produced classroom decoration materials on functional, aesthetic, and expressive variables. The instrument was face- and content-validated by a three-member expert panel, and piloted in two primary schools outside the main sample. Quantitative data were analysed with descriptive statistics (frequencies, percentages, means, standard deviations) and independent qualitative data from open-ended items and observation notes were analysed thematically following Braun and Clarke (2006). The benchmark for acceptability was a mean of ≥ 2.50 on a 4-point scale.

Results

Teachers' Assessment of Acceptability

Table 1 presents teachers' acceptability ratings of the classroom decoration products produced, classified by functional, aesthetic, and expressive variable type. All 15 items scored between 3.88 and 4.45 — well above the 2.50 benchmark — showing strong agreement that the products produced are acceptable on every variable assessed.

Table 1: Teachers' Assessment of Acceptability of Classroom Decoration Products

S/N	Item	Mean ($\bar{x}$)	SD	Decision	Variable Type
1	Enhances learners' attention	4.32	0.71	Acceptable	Functional
2	Improves learning retention	4.1	0.83	Acceptable	Functional
3	Creates a stimulating learning environment	4.05	0.79	Acceptable	Aesthetic
4	Supports different learning styles	4.28	0.75	Acceptable	Functional
5	Encourages active participation	4.15	0.77	Acceptable	Functional
6	Promotes creativity in learners	4.22	0.73	Acceptable	Expressive
7	Reinforces teaching content	4.4	0.68	Acceptable	Functional
8	Improves classroom organization	4.18	0.74	Acceptable	Aesthetic
9	Enhances aesthetic value of the school	4.36	0.69	Acceptable	Aesthetic
10	Encourages environmental sustainability	3.88	0.91	Acceptable	Expressive
11	Reduces educational costs	4.45	0.66	Acceptable	Functional
12	Builds teacher effectiveness	4.02	0.85	Acceptable	Functional
13	Boosts learners' motivation	4.07	0.8	Acceptable	Functional
14	Encourages collaborative learning	4.2	0.76	Acceptable	Functional
15	Strengthens emotional well-being	4.12	0.82	Acceptable	Expressive
	Grand Total	4.18	0.77	Acceptable	

'Reduces educational costs' (a functional variable) received the highest rating ($\bar{x}$ = 4.45, SD = 0.66), showing teachers strongly link the products to school-level savings, followed by "Reinforces teaching content" ($\bar{x}$ = 4.40, functional) and "Enhances aesthetic value of the school" ($\bar{x}$ = 4.36, aesthetic). The lowest-rated item, still within the "Acceptable" range, was "Encourages environmental sustainability" ($\bar{x}$ = 3.88, SD = 0.91, expressive), suggesting teachers weigh this quality somewhat less than the direct functional gains.

School Administrators' Assessment of Acceptability

Table 2 presents administrators' acceptability ratings, again classified by variable type. All 15 items scored between 3.75 and 4.50, indicating strong agreement.

Table 2: School Administrators' Assessment of Acceptability of Classroom Decoration Products

S/N	Item	Mean ($\bar{x}$)	SD	Decision	Variable Type
1	Overall improvement of learning environment	4.2	0.74	Acceptable	Aesthetic
2	Reduction of dependency on government funding	4.05	0.82	Acceptable	Functional
3	Promotion of sustainable school practices	3.98	0.88	Acceptable	Expressive
4	Support for instructional reinforcement	4.25	0.76	Acceptable	Functional
5	Motivation of teachers and students	4.1	0.79	Acceptable	Functional
6	Improvement of classroom organization	4.18	0.75	Acceptable	Aesthetic
7	Encouragement of learner engagement	4.3	0.7	Acceptable	Functional
8	Enhancement of classroom visual appeal	4.12	0.77	Acceptable	Aesthetic
9	Strengthening school-community relations	4.35	0.68	Acceptable	Expressive
10	Development of student skills	3.75	0.95	Acceptable	Functional
11	Encouragement of teacher creativity and innovation	4.5	0.65	Acceptable	Expressive
12	Strong support for cost reduction	4	0.84	Acceptable	Functional
13	Promotion of resource efficiency	4.08	0.8	Acceptable	Functional
14	Enhancement of teaching and learning quality	4.28	0.72	Acceptable	Functional
15	Improvement of school aesthetics	4.15	0.78	Acceptable	Aesthetic
	Grand Total	4.15	0.79	Acceptable	

"Encouragement of teacher creativity and innovation" (expressive) received the highest rating ($\bar{x}$ = 4.50, SD = 0.65), followed by "Strengthening school-community relations" ($\bar{x}$ = 4.35, expressive) and "Encouragement of learner engagement" ($\bar{x}$ = 4.30, functional). "Development of student skills" (functional) was rated lowest, though still "Acceptable" ($\bar{x}$ = 3.75, SD = 0.95).

Experts' Assessment of Acceptability

Table 3 presents the assessment by textile/clothing experts and art educators. All 15 items scored between 3.80 and 4.60.

Table 3: Experts' Assessment of Acceptability of Classroom Decoration Products

S/N	Item	Mean ($\bar{x}$)	SD	Decision	Variable Type
1	Promotion of creative expression	4.35	0.7	Acceptable	Expressive
2	Utilization of textile waste and fabric scraps	4.15	0.78	Acceptable	Functional
3	Enhancement of aesthetic value	4.25	0.72	Acceptable	Aesthetic
4	Development of practical skills	4.5	0.65	Acceptable	Functional
5	Promotion of economic sustainability	4.2	0.75	Acceptable	Functional
6	Encouragement of innovation in design	4.3	0.71	Acceptable	Expressive
7	Integration of art into education	4.6	0.6	Acceptable	Expressive
8	Environmental sustainability awareness	4.25	0.73	Acceptable	Expressive
9	Improvement of teaching effectiveness	4.55	0.62	Acceptable	Functional
10	Promotion of cultural expression	3.8	0.92	Acceptable	Expressive
11	Encouragement of collaborative work	4.48	0.66	Acceptable	Functional
12	Support for skill-based education	4.05	0.82	Acceptable	Functional
13	Enhancement of student motivation	4.22	0.76	Acceptable	Functional
14	Efficient use of available resources	4.3	0.7	Acceptable	Functional
15	Strengthening school identity and image	4.18	0.77	Acceptable	Expressive
	Grand Total	4.28	0.73	Acceptable	

"Integration of art into education" (expressive) was rated highest ($\bar{x}$ = 4.60, SD = 0.60), followed by "Improvement of teaching effectiveness" ($\bar{x}$ = 4.55, functional) and "Development of practical skills" ($\bar{x}$ = 4.50, functional). "Promotion of cultural expression" (expressive) was rated lowest, though still "Acceptable" ($\bar{x}$ = 3.80, SD = 0.92).

Synthesis by Variable Type

Table 4 summarises the mean acceptability ratings by variable type across the three stakeholder groups, calculated by averaging the item-level means within each category.

Table 4: Mean Acceptability Ratings by Functional, Aesthetic, and Expressive Variable Type

Variable Type	Teachers' Mean	Administrators' Mean	Experts' Mean
Functional	4.22	4.1	4.31
Aesthetic	4.2	4.16	4.25
Expressive	4.07	4.28	4.25

Across all three stakeholder groups, functional, aesthetic, and expressive variables were all rated as acceptable, with means clustering closely between 4.07 and 4.31. Teachers rated functional variables highest (4.22), administrators rated expressive variables highest (4.28), and experts rated functional and expressive variables similarly high (4.31 and 4.25 respectively), suggesting the products produced were well-rounded across all three dimensions rather than strong in one respect only.

Comparison of Stakeholder Groups

Table 5: Comparison of Grand Means Across Stakeholder Groups

Stakeholder Group	Grand Mean ($\bar{x}$)	Grand SD	Rank
Textile/Clothing Experts & Art Educators	4.28	0.73	1st
Teachers	4.18	0.77	2nd
School Administrators	4.15	0.79	3rd

Experts recorded the highest grand mean (4.28), followed by teachers (4.18) and administrators (4.15). The consistently high ratings across all three groups point to strong shared consensus that the classroom decoration products produced from used children's clothing are acceptable.

Qualitative Findings

Thematic analysis of focus-group discussions produced five themes. Economic necessity was the most immediate: teachers described spending heavily on commercial posters and charts that quickly wear out, and saw the produced materials as freeing up money for books and other essentials in a difficult economic climate. Skill-development needs came through clearly too — teachers wanted practical guidance on cutting, arranging, and finishing materials so they look professional, while experts pointed to basic design skills such as colour combination and balance as a gap.

Material-sourcing systems emerged as a structural need: administrators noted that parents would likely donate old clothing if schools set up a formal collection point and communicated what was needed, framing this partly as a shift in mindset about what counts as waste. Sustainability awareness was a recurring theme among experts, who saw the practice as teaching children that discarded materials can become valuable — not just a cost-saving measure but an environmental lesson in itself. Finally, maintenance and longevity concerned teachers most: having invested time in producing decorations, they wanted practical guidance on cleaning, storage, and durability so the materials would last.

Discussion

The strength of agreement across all stakeholder groups, and across all three variable types, supports the study's theoretical grounding. Ratings on functional variables such as instructional reinforcement (teachers 4.40; administrators 4.25) fit Constructivist Theory (Piaget, 1954; Vygotsky, 1978): visually rich classrooms supply the concrete experience Piaget saw as necessary for building schemas, while decorations function as Vygotsky's "psychological tools," scaffolding the move from supported to independent learning. Ratings on aesthetic and expressive variables such as psychological safety and emotional well-being (teachers 4.12) fit Environmental Psychology Theory (Barker, 1968): the soft, familiar textures of fabric decorations create a psychologically warmer classroom, reducing anxiety and building the sense of belonging that Immordino-Yang (2016) identifies as central to effective learning — seeing one's own or the community's clothing repurposed in the room is itself a signal that the child belongs there.

Administrators' emphasis on the expressive variable of teacher creativity and innovation (4.50) reflects Resourcefulness Theory (Rosen, 1983): by treating used clothing as a resource, teachers turn a shortage of commercial decorations into an opportunity, and the process of producing materials builds self-efficacy by demonstrating that teachers need not depend entirely on external supply. The emphasis on training aligns with Experiential Learning Theory (Kolb, 1984), whose four-stage cycle — concrete experience, reflective observation, abstract conceptualisation, active experimentation — describes how hands-on production becomes transformative professional learning rather than a one-off craft skill.

The prominence of functional, cost-related variables (teachers $\bar{x} = 4.45$; administrators $\bar{x} = 4.00$; experts $\bar{x} = 4.20$) matches Jones and Woodward's (2020) definition of economic sustainability as efficient resource use that secures long-term viability, and Mwangi and Otieno's (2020) argument that African schools should draw on locally available materials to reduce dependence on costly imports. Umoh (2021) and Ihuoma et al. (2022) similarly note that reuse and recycling in the Niger Delta cut costs while supporting environmental sustainability.

The shared recognition of expressive and aesthetic qualities across groups supports Kowitvongsa and Bunnag's (2022) finding that upcycling builds sustainability awareness, Madike's (2023) case for eco-literacy in classrooms, and Sari and Utami's (2022) evidence that recycled-fabric materials strengthen young learners' cognitive and motor skills. On training, the findings echo Knight (2022) on the centrality of instructional coaching, Okoro and Mohammed's (2024) finding that material-making builds pedagogical creativity, and Nwosu and Okeke's (2021) evidence that training in local-resource development measurably improves teachers' professional competence.
The differing emphases across groups track their distinct roles. Teachers prioritised functional variables such as economic savings (4.45) and instructional reinforcement (4.40), consistent with their daily experience of resource constraints. Administrators prioritised the expressive variable of teacher creativity (4.50) and school-community relations (4.35), reflecting an institutional view. Experts prioritised the expressive variable of integrating art into education (4.60) and the functional variable of teaching effectiveness (4.55), reflecting their specialist view of how the arts support learning.

Female respondents rated the produced materials consistently higher than male respondents across every variable, a pattern that mirrors Ahmed et al.'s (2022) finding that women in developing economies typically carry primary responsibility for household resource management, clothing procurement, and children's educational support — a convergence of domestic and educational roles that builds familiarity and confidence with textiles. Rather than pointing to any shortcoming among male respondents, this suggests programmes should engage women as expert advocates while deliberately building male teachers' familiarity and confidence with production practices, consistent with Brown and Williams' (2022) finding that female teacher trainees in Jamaica showed greater confidence and agency when crafting resources from available materials.

Conclusion

This study successfully produced classroom decoration materials from used children's clothes in Port Harcourt Metropolis and found them broadly acceptable to teachers, administrators, and experts across functional, aesthetic, and expressive variables. The products were judged functionally sound — supporting attention, retention, participation, and cost reduction — aesthetically pleasing, and expressively rich in creativity and cultural relevance. Maintenance training, financial support, and design skills stood out as the most consistently rated considerations across groups.

Recommendations

1. For Teacher Training Institutions: Faculties of education at the University of Port Harcourt and Ignatius Ajuru University of Education should integrate textile-upcycling modules into pre-service and in-service training, covering material selection, production procedures, classroom installation, maintenance, and curriculum integration.
2. For Schools: Every public primary school in Port Harcourt Metropolis should establish a used-clothing collection point in partnership with parents and community members, and hold quarterly "decoration production days" bringing teachers, parents, and volunteers together to produce and refresh displays.
3. For Policy Makers: The Rivers State Universal Basic Education Board (RSUBEB) should publish an official teacher guide covering validated production procedures, material-suitability criteria, maintenance schedules, and sample lesson plans, distributed to all public primary schools and built into inspection checklists.
4. For Resource Allocation: School administrators should allocate part of their capitation grants to non-donatable supplies — fabric glue, scissors, permanent markers, cardboard, laminating sheets — a high-return investment given the substantial cost reduction against commercial decorations.

5. For Community Engagement: The Rivers State Ministry of Education, with local government authorities, should support cooperatives or women's groups producing standardised classroom-decoration sets for sale to schools, daycare centres, and community organisations.
6. For Further Research: Longitudinal studies should track the durability and continued acceptability of the products produced across school years, and the study should be replicated in other local government areas of Rivers State and elsewhere in the Niger Delta to test generalisability.

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