

INCLUSION OF COGNITIVE ENHANCEMENT BASIC SEWING ACTIVITIES IN PUPILS TEACHERS PERCEPTION AND ENGAGEMENT

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Abstract

Cognitive development is a central goal of early childhood education, particularly in contemporary knowledge-driven societies that prioritise skills such as critical thinking, creativity, problem-solving, and metacognition. Despite global advocacy for hands-on and activity-based pedagogies, Nigerian lower basic classrooms remain largely dominated by rote learning practices, limiting opportunities for higher-order cognitive engagement. This study investigated teachers' perceptions, levels of engagement, challenges, and improvement strategies regarding the integration of basic sewing activities as a means of enhancing cognitive development among lower basic pupils in Ojo, Lagos Metropolis. The study adopted a descriptive survey research design. A sample of 400 lower basic teachers was selected using simple random sampling. Data were collected using two validated instruments: the Teachers' Perception of Lower Basic Pupils' Cognitive Enhancement through Basic Sewing Activities questionnaire and an observational schedule on teachers' engagement. Reliability coefficients of 0.82 and 0.76 were obtained using Cronbach's alpha. Descriptive statistics were employed for data analysis. Findings revealed that teachers held a moderately positive perception of the cognitive relevance of basic sewing activities, particularly in fostering creativity and imagination. However, actual classroom engagement was largely limited to basic sewing tasks, with minimal linkage to explicit cognitive goals, reflective practices, or differentiated instruction. Major challenges identified included inadequate teacher training, limited instructional time, insufficient administrative support, and pupil frustration. The study concludes that while basic sewing activities are present in classrooms, their cognitive potential is underutilised due to pedagogical and systemic constraints. The study recommends targeted teacher training, resource provision, and curriculum reforms to promote holistic, cognitively enriching early childhood education.

Keywords: Basic Sewing Activities; Cognitive Enhancement; Engagement; Lower Basic Pupils; Teachers' Perceptions

Introduction

Cognitive development dominates early childhood education in today's fast-changing environment. As knowledge-based economies and technologically driven societies emerge, teachers, legislators, and curriculum developers have focused more on cognitive skills like critical thinking, problem solving, creativity, divergent thinking, pattern recognition, design thinking, and metacognition. Cognitive skills are crucial for academic success and give young students the tools to handle real-world challenges, adapt to change, and learn for life (Bindu & Saravanakumar, 2023). Thus, encouraging these competencies in basic education, especially in lower basic classrooms, has become a priority.

Traditional Nigerian classrooms still emphasise rote learning, memorisation, and standardised tests (Suleiman *et. al.*, 2022). This traditional method sometimes excludes cognitively stimulating, hands-on, skill-based activities that promote higher-order thinking. Sewing projects in class are a fun and creative way to improve lower-level students' cognitive development. Although considered a vocational or extracurricular skill, sewing is cognitively valuable. Fine motor coordination, logical sequencing, problem identification and resolution, attention to detail, and pattern conceptualisation are all important cognitive development skills that children learn through simple sewing tasks.

Many cognitive processes benefit from simple sewing projects. Planning a basic design may inspire strategic thinking and creativity, but threading a needle or sewing a pattern requires concentration, spatial awareness, and hand-eye coordination (Burman, 2023). These exercises can also be customised to promote cooperative learning, where students work in pairs or small groups to improve social cognition and

communication. These benefits make sewing a rewarding hobby that supports early childhood development. This approach has great potential, but most Nigerian classrooms, especially public elementary schools, where resources, teacher preparation, and creative teaching strategies are lacking, underutilise it.

Based on Vygotsky's socio-cultural theory, the study stressed the need for interactive, student-centered pedagogy to improve conceptual comprehension in multilingual contexts.

A multiple case study by Nwani (2021) examined teacher effectiveness and student learning in five Lagos State private primary schools. The study identified professional knowledge, instructional planning, differentiated instruction, formative assessment, care, and practical wisdom as essential teacher practices and personal attributes through interviews and unstructured observations. The findings showed that pedagogical content knowledge, success criteria, and formative assessment improve teacher effectiveness. The study also stressed teacher autonomy as essential for practical wisdom (phronesis), which sustains effective teaching and learning.

Adewale and Oyibo-Ubido (2024) examined how Activity-Based Learning (ABL) affected primary school math performance in Eti-Osa, Lagos State. A descriptive survey of 50 students in traditional, ABL, and combined method groups found that ABL students outperformed traditional students. However, the three groups performed similarly when compared. ABL combined with conventional pedagogy could improve mathematics education, so the authors recommended integrating ABL into teaching, along with educator training and more research into its long-term effects.

Darling-Hammond (2017) assert that teachers' instructional competence is strongly influenced by the quality of professional preparation and ongoing training. Time constraints and lack of administrative support further compound these challenges, echoing findings by Fullan (2007), who argued that curriculum innovations often fail when institutional support and scheduling flexibility are lacking. Pupils' frustration with sewing tasks may also reflect insufficient differentiation and scaffolding, which are essential for maintaining learner motivation and persistence (Vygotsky, 1978).

Therefore, teacher involvement is crucial to cognitive-enhancing activities. Teachers are the main agents of curriculum delivery, so their impressions, attitudes, and participation directly affect whether such activities are included in the classroom (Jenkins, 2020). Unfortunately, current research suggests that many Nigerian lower basic classroom teachers may lack the exposure, training, or tools to engage students in cognitive sewing activities (Ede *et. al.*, 2021). Low participation in such activities poses a gap between teachers' knowledge of sewing's cognitive benefits and their classroom practices (Mpofu *et. al.*, 2023).

Children learn best through active engagement with materials and meaningful tasks (Piaget, 1972). Sewing activities require pupils to plan, sequence actions, recognise patterns, and correct errors, all of which support cognitive development. Dewey (1938) asserts that learning through practical and creative activities enhances reflective thinking and intellectual growth. However, the noticeable proportion of teachers who disagreed or strongly disagreed with some items indicates uncertainty about the direct cognitive benefits of sewing. This lack of consensus may stem from limited pedagogical understanding of how practical activities translate into cognitive outcomes, as noted by Kolb (1984), who emphasized that experiential learning must be intentionally structured to yield cognitive gains.

Vygotsky's (1978) sociocultural theory emphasises the role of guided instruction, scaffolding, and reflective dialogue in transforming activities into meaningful cognitive experiences. Without explicit connections to cognitive goals or reflective discussions, the potential of sewing activities to enhance higher-order thinking remains underutilised. The results suggest that teachers may lack the pedagogical skills to embed cognitive objectives into practical lessons, thereby limiting learning outcomes.

Government provision of sewing kits and resources was available in experiential learning environments (Kolb, 1984). Although collaboration with vocational instructors received mixed responses, literature suggests that interdisciplinary collaboration can enrich classroom practice by bridging theory and practice (UNESCO, 2015). Additionally, allocating time for creative activities and promoting peer learning align with Dewey's (1938) view that social interaction and creative expression are central to meaningful learning.

Furthermore, although studies from around the world support hands-on, project-based learning as a means of promoting cognitive development, there is a large research void on how best to include basic sewing into the Nigerian lower basic educational setting. Few studies have examined how teachers in densely populated Ojo, Lagos Metropolis, with diverse socioeconomic issues and educational disparities, view and use cognitive enhancement through basic sewing (Mohammed, 2021).

This disparity presents a challenge and an opportunity to rethink early learning to combine cognitive enrichment and skill development. It is of interest to this study, therefore, to find out the teachers' opinions and levels of involvement in integrating cognitive enhancement sewing activities into lower basic classrooms in Ojo, Lagos Metropolis. This provides empirical data to inform curriculum, policy, and teacher professional training. More importantly, it emphasises the need for a more holistic and pragmatic approach to early childhood education that integrates academics and life skills to develop well-rounded, cognitively agile learners ready for the future (Mekhridinovna *et al.*, 2023; Bindu & Saravanakumar, 2023).

Statement of the Problem

In today's fast-paced digital world, it's important to have planned ways to help young children develop their brains. Every student needs to learn skills like critical thinking, creativity, problem-solving, and pattern recognition. This is especially true in lower basic classrooms, where cognitive growth happens quickly (Ginsburg, 2020; Wilson & Conyers, 2020). Basic sewing activities naturally cultivate these skills through practical engagement; however, they are significantly underutilised in Nigerian classrooms, especially in Ojo, Lagos (Salau, 2023; Idowu, 2023). Despite evidence supporting the role of craft-based activities in cognitive development (Bukhave *et al.*, 2025), there is limited empirical data on teachers' perceptions and engagement with basic sewing in Nigerian lower basic schools. This study examines teachers' perceptions and involvement in basic sewing activities within Ojo's lower basic schools to enhance educational practices and policies.

The purpose of this study is to examine the role of basic sewing activities in enhancing cognitive development among lower basic pupils, with particular emphasis on teachers' perceptions, classroom practices, and implementation challenges. Specifically, the study seeks to:

- i. Investigate teachers' perceptions of the relevance of basic sewing activities as a pedagogical tool for fostering cognitive skills.
- ii. Determine the extent to which teachers actively engage lower basic pupils in basic sewing activities designed to enhance cognitive development within the classroom setting.
- iii. Assessing the level of teachers' involvement and instructional practices, and how effectively these activities are utilised in lower basic education.
- iv. Identify the challenges faced by teachers in integrating basic sewing activities into the lower basic curriculum.

Research Questions

1. What are teachers' perceptions of the relevance of basic sewing activities in enhancing cognitive development among lower basic pupils?
2. To what extent do teachers engage lower basic pupils in cognitive enhancement through basic sewing activities?
3. What challenges do teachers face in integrating basic sewing activities into the lower basic classroom?
4. What strategies can be adopted to improve teachers' engagement and the effective integration of basic sewing activities in lower basic education?

Methodology

A descriptive survey research design was adopted for this study. The population of the study comprised all the lower basic classroom teachers in Ojo metropolis, Lagos, Nigeria. A survey of 400 teachers in Ojo, Lagos Metropolis, was sampled. A Simple random sampling was used to get a representative sample of the larger teaching population involved in this important developmental process. Participants were selected using a simple random sampling method to ensure that all teachers had an equal chance and to reduce sampling bias. Two instruments was used titled "Teachers' Perception of the Lower Basic Pupils' Cognitive Enhancement Basic Sewing Activities (TPLBPCEBSA)" and the observational schedule "Teachers' Engagement of Lower Basic Pupils in Cognitive Enhancement Basic Sewing Activities Observational Schedule (TELBPCEBSAOS)" were validated by the expert for face and content of the instruments to ensure instrument measure what its purpose to

measure. Reliability of the instruments was checked to assess the internal consistency of the two instruments using Cronbach's alpha, and the reliability coefficient of 0.82 and 0.76, respectively. The data collected were analysed using descriptive statistics to analyse the questionnaire and observational schedule data. Frequency counts, percentages, means, and standard deviations were used to describe teachers' feelings and engagement.

Results

Research Question 1: What are teachers' perceptions of the relevance of basic sewing activities in enhancing cognitive development among lower basic pupils?

Table 1. Teachers' Perception of Cognitive Enhancement through Basic Sewing Activities

ITEMS	SD	D	A	SA	Mean	Std. Dev.
Basic sewing activities can enhance pupils' cognitive development.	115 (28)	104 (26.0)	86 (21.)	95 (23)	2.40	1.137
Sewing activities help pupils develop critical thinking skills.	112 (28.)	83 (20.7)	101 (25)	104 (26.)	2.49	1.155
Engaging in sewing promotes creativity and imagination.	90 (22)	97 (24.3)	95 (23)	118 (29)	2.60	1.133
Pattern recognition during sewing enhances problem-solving abilities.	92 (23)	102 (25.5)	107 (26)	99 (24)	2.53	1.099
Basic sewing should be part of the lower basic curriculum.	82 (20)	105 (26.3)	104 (26)	109 (27)	2.60	1.095

Table 1 shows that teachers generally have a moderate opinion about how useful basic sewing activities are for helping lower basic pupils develop their cognitive skills. The average scores for all items were between 2.40 and 2.60 on a 4-point Likert scale, which means that the view was obviously positive. For example, 23.8% of those who answered agreed that simple sewing tasks can help students learn more, while 28.7% strongly disagreed. Also, about 26.0% agreed that sewing helps people think critically, but a large 28.0% strongly disagreed. The items that got the most positive responses were about encouraging creativity and imagination and adding sewing to the curriculum, both with mean scores of 2.60. A significant number of teachers, however, disagreed or strongly disagreed with all of the items. This suggests that there is some uncertainty or lack of agreement about the cognitive benefits of basic sewing activities. This revealed that the teachers had a positive perception of the lower basic pupils' cognitive enhancement in basic sewing activities.

Research Question 2: To what extent do teachers engage lower basic pupils in cognitive enhancement basic sewing activities?

Table 2: Indicators of Teacher Engagement in Sewing Activities

ITEMS	N	R	O	VO	Mea n	Std. Dev.
Teacher introduces basic sewing tasks (e.g., threading, knotting, simple stitches)	0 (0.0)	0 (0.0)	163 (40.8)	237 (59.3)	3.59	.492
Teacher explains sewing concepts using simple tools/materials	0 (0.0)	0 (0.0)	163 (40.8)	237 (59.3)	3.59	.492
Teacher organizes hands-on sewing tasks for individuals or groups	0 (0.0)	0 (0.0)	156 (39.0)	244 (61.0)	3.61	.488
Pupils are actively engaged in sewing-related tasks during class	0 (0.0)	0 (0.0)	163 (40.8)	237 (59.3)	3.59	.492
Pupils provides materials and are availble during activities	0 (0.0)	0 (0.0)	161 (40.3)	239 (59.8)	3.60	.491
Teacher connects sewing tasks to cognitive goals (e.g., problem-solving, planning)	169 (42.3)	195 (48.8)	36 (9.0)	0 (0.0)	1.67	.635
Classroom materials (needles, thread, cloth, etc.) are made available and used	153 (38.3)	198 (49.5)	49 (12.3)	0 (0.0)	1.74	.662
Teacher encourages reflection or discussion after activities (e.g., "What did we learn?")	165 (41.3)	201 (50.2)	34 (8.5)	0 (0.0)	1.67	.625
Pupils show evidence of enjoyment, focus, or persistence in the task	167 (41.8)	197 (49.3)	36 (9.0)	0 (0.0)	1.67	.633
Teacher adapts sewing tasks to pupil ability (e.g., simplifies tasks for struggling pupils)	160 (40.0)	206 (51.5)	34 (8.5)	0 (0.0)	1.68	.622

Table 2 shows that level of teachers' engagement of lower basic pupils in cognitive enhancement basic sewing activities was low with a mean score of 1.67. Though the teachers often teach basic sewing tasks like threading, knotting, and simple stitches. Most (59.3%) say they do this very often, which is shown by a high mean score of 3.59 (SD = 0.492). Mean scores above 3.5 show that pupils make provision and teachers teach but are not involved. For example, they often use simple tools to explain sewing concepts and set up hands-on sewing tasks. The students' active participation and the teacher's guidance during activities were also highly rated, which shows that these cognitive enhancement practices are used on a regular basis. However, there is a big difference in the areas that got low mean scores (around 1.67 to 1.74) and were mostly rated as happening rarely or never by respondents. These areas include connecting sewing tasks to cognitive goals, making materials available, encouraging reflection, making tasks fun for students, and adapting tasks to each student's level of ability. There is a big difference between deeper cognitive engagement and resource support, even though basic tasks are done often. This shows where improvements are needed to make the most of sewing activities for cognitive development in lower basic classrooms.

Research Question 3: What challenges do teachers face in integrating basic sewing activities into the lower basic classroom?

Table 3. Teachers' Responses to Challenges in Implementing Sewing Activities

ITEMS	SD	D	A	SA	Mea n	Std. Dev.
Lack of materials and resources limits my ability to teach sewing.	111 (27.8)	100 (25.0)	98 (24.5)	91 (22.8)	2.42	1.121
I do not feel adequately trained to teach sewing activities.	101 (25.3)	97 (24.3)	87 (21.8)	115 (28.7)	2.54	1.154
There is limited time in the school timetable for practical activities.	95 (23.8)	110 (27.5)	97 (24.3)	98 (24.5)	2.50	1.104
There is little or no administrative support for sewing in classrooms.	106 (26.5)	88 (22.0)	97 (24.3)	109 (27.3)	2.52	1.152
Pupils find sewing too difficult or frustrating to attempt.	100 (25.0)	104 (26.0)	83 (20.8)	113 (28.2)	2.52	1.148

Table 3 shows that teachers have a lot of problems when they try to include basic sewing activities in lower basic classrooms. A considerable number of teachers concurred or strongly concurred that the deficiency of materials and resources constrains their capacity to instruct sewing; however, this was the challenge with the lowest level of agreement, reflected by a mean score of 2.42 (SD = 1.121). The most agreement was about not getting enough training, with 28.7% strongly agreeing and a mean of 2.54 (SD = 1.154). This shows that many teachers don't feel ready to teach sewing activities. The school schedule's time limits were also a problem, as shown by a mean of 2.50 (SD = 1.104) and mixed levels of agreement among respondents. Also, a lack of administrative support was seen as a problem, with 27.3% strongly agreeing and a mean score of 2.52 (SD = 1.152). Lastly, a similar percentage of teachers (28.2%) strongly agreed that students often find sewing too hard or frustrating, which shows that students also have problems with learning. The moderate mean scores indicate that these challenges are common and may impede the effective incorporation of sewing activities in the classroom.

Research Question 4: What strategies can be adopted to improve teachers' engagement and effective integration of basic sewing activities in lower basic education?

Table 4. Suggested Strategies for Enhancing Integration of Basic Sewing Activities

ITEMS	SD	D	A	SA	Mea n	Std. Dev.
Professional development training in sewing would improve my competence.	90 (22.5)	99 (24.8)	106 (26.5)	105 (26.3)	2.57	1.106
Government provision of sewing kits and resources would enhance delivery.	94 (23.5)	99 (24.8)	103 (25.8)	104 (26.0)	2.54	1.114
Collaboration with vocational instructors can support classroom practice.	113 (28.2)	112 (28.0)	91 (22.8)	84 (21.0)	2.36	1.104
Allocating time for creative activities in the curriculum is essential.	108 (27.0)	98 (24.5)	95 (23.8)	99 (24.8)	2.46	1.134
Peer learning and team teaching would make sewing integration easier.	95 (23.8)	109 (27.3)	102 (25.5)	94 (23.5)	2.49	1.094

Table 4 reveals the results regarding strategies to enhance teachers' engagement and the successful incorporation of fundamental sewing activities in lower basic education indicated a moderate consensus among educators. Professional development training was viewed as a pivotal strategy, achieving a mean score of 2.57 (SD = 1.106), signifying that numerous educators believe this training would augment their proficiency. People also liked the idea of the government giving out sewing kits and other resources, with a mean of 2.54 (SD = 1.114).

This shows that teachers need enough materials to do their jobs. The mean score for working with vocational instructors was a little lower at 2.36 (SD = 1.104), which means that people had mixed feelings about how useful it might be. The average score for giving students time for creative activities in the curriculum was 2.46 (SD = 1.134), which shows that people understood how important it is to set aside time for sewing activities. Finally, peer learning and team teaching were thought to be good methods, with a mean score of 2.49 (SD = 1.094). Overall, the results show that teachers mostly agree on these strategies, but there is still room for more support and use of them to make sewing a bigger part of the classroom.

Discussion of Findings

The findings from research question 1 revealed that teachers generally hold a moderately positive perception of the relevance of basic sewing activities for enhancing the cognitive development of lower basic pupils. The mean scores across all items (2.40–2.60) suggest that teachers recognise the cognitive potential of sewing activities, particularly in fostering creativity, imagination, and problem-solving skills. This aligns with constructivist learning theory, which posits that children learn best through active engagement with materials and meaningful tasks (Piaget, 1972). Sewing activities require pupils to plan, sequence actions, recognise patterns, and correct errors, all of which support cognitive development.

The relatively higher agreement on items related to creativity and curriculum inclusion further supports Dewey's (1938) assertion that learning through practical and creative activities enhances reflective thinking and intellectual growth. However, the noticeable proportion of teachers who disagreed or strongly disagreed with some items indicates uncertainty about the direct cognitive benefits of sewing. This lack of consensus may stem from limited pedagogical understanding of how practical activities translate into cognitive outcomes, as noted by Kolb (1984), who emphasised that experiential learning must be intentionally structured to yield cognitive gains.

Findings from Research Question 2 indicate that while teachers frequently engage pupils in basic sewing tasks, deeper cognitive engagement is largely absent. High mean scores (above 3.5) for introducing sewing tasks, explaining concepts, and organising hands-on activities suggest that sewing is treated primarily as a routine practical activity. However, very low mean scores (1.67–1.74) for linking tasks to cognitive goals, encouraging reflection, adapting tasks to pupils' abilities, and ensuring material availability reveal a significant gap between activity implementation and cognitive intentionality.

This finding corroborates Vygotsky's (1978) sociocultural theory, which emphasises the role of guided instruction, scaffolding, and reflective dialogue in transforming activities into meaningful cognitive experiences. Without explicit connections to cognitive goals or reflective discussions, the potential of sewing activities to enhance higher-order thinking remains underutilised. The results suggest that teachers may lack the pedagogical skills to embed cognitive objectives into practical lessons, thereby limiting learning outcomes.

The study identified several challenges that hinder the effective integration of basic sewing activities, including inadequate teacher training, limited instructional time, insufficient administrative support, lack of materials, and pupils' frustration with sewing tasks. Inadequate training emerged as the most significant challenge, reinforcing earlier findings that teachers struggle to link sewing activities to cognitive development. This supports Darling-Hammond's (2017) assertion that teachers' instructional competence is strongly influenced by the quality of professional preparation and ongoing training.

Time constraints and lack of administrative support further compound these challenges, echoing findings by Fullan (2007), who argued that curriculum innovations often fail when institutional support and scheduling flexibility are lacking. Pupils' frustration with sewing tasks may also reflect insufficient differentiation and scaffolding, which are essential for maintaining learner motivation and persistence (Vygotsky, 1978).

The findings on strategies indicate moderate agreement among teachers on measures to improve engagement and integration of sewing activities. Professional development training was identified as the most effective strategy, underscoring the need to build teachers' pedagogical capacity. This is consistent with literature emphasising that continuous professional development enhances teachers' ability to implement innovative and learner-centred practices (Darling-Hammond, Hyler, & Gardner, 2017).

Government provision of sewing kits and resources was also strongly supported, highlighting the importance of material availability in experiential learning environments (Kolb, 1984). Although collaboration with vocational instructors received mixed responses, literature suggests that interdisciplinary collaboration can enrich classroom practice by bridging theory and practice (UNESCO, 2015). Additionally, allocating time for creative activities and promoting peer learning align with Dewey's (1938) view that social interaction and creative expression are central to meaningful learning.

Conclusion

Findings from this study necessitate the conclusion that there was some recognition of sewing's ability to encourage creativity and imagination, but people were still not careful about its cognitive benefits. Teachers often had students do simple sewing tasks like threading and knotting, but they rarely used activities that encouraged higher-order thinking, such as reflection, setting cognitive goals, and differentiated instruction.

The results also showed that there were big problems, such as not enough training, not enough time, not enough help from the administration, and students being frustrated. It was recognized that there were shortages of materials, but they were not the most important problem. Teachers somewhat backed strategies like professional development, providing resources, and working together with peers to improve practice. In conclusion, although basic sewing activities exist in classrooms, their capacity for cognitive enhancement is insufficiently leveraged due to systemic and pedagogical impediments.

Recommendations

The following recommendations were made;

1. Professional development should be a top priority to teach teachers not only how to sew well but also how to make sure that these tasks fit with cognitive learning goals.
2. Workshops and ongoing training can help teachers become more skilled and confident, which will let them plan more interesting and mentally stimulating activities.
3. Schools should have enough sewing supplies and kits to make it easier for students to get things done.
4. Curriculum planners ought to designate time expressly for practical and creative learning, thereby mitigating the tension between vocational and academic obligations.
5. School administrator should push for new ways of teaching and give teachers rewards for including sewing in their lessons.
6. Teachers can also benefit from working together in ways like team teaching and peer mentoring.

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