

**INFLUENCE OF ART EDUCATION ON THE COGNITIVE DEVELOPMENT OF  
PRIMARY SCHOOL CHILDREN IN EDO STATE.**

**BY**

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**BENIN CITY**

**AUGUST, 2025.**

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**A RESEARCH PROJECT SUBMITTED TO THE DEPARTMENT OF AGRIC AND FINE  
AND APPLIED ART EDUCATION, FACULTY OF VOCATIONAL AND TECHNICAL  
EDUCATION, UNIVERSITY OF BENIN, BENIN CITY**

**IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF**

**BACHELOR OF FINE ART DEGREE (BFA.ED) IN  
EDUCATION FINE AND APPLIED ART.**

**AUGUST, 2025**

## **CERTIFICATION**

This is to certify that this research work was written and submitted by IFEOLUWA SAMUEL OKUNLOLA with Matriculation No EDU2102289 to the Department of Agric and Fine and Applied Art Education, University of Benin City, Edo State.

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## **DEDICATION**

This project work is dedicated to God Almighty; the creator of the universe who made it happen.

## **ACKNOWLEDGEMENTS**

My greatest gratitude goes to God Almighty for seeing me through this research work and for being my help throughout my undergraduate programme, it was more than I deserved.

My appreciation goes to my supervisor. Prof. E. IYAMU whose expertise in research enlightened me about the rudiment of research and made the work progress smoothly.

I am also sincerely grateful to Mrs I. C Edomwande who carefully checked through my work and enforced necessary corrections for me to put in place during the course of preparing this thesis and for also encouraging me to complete my work before time which helped to reduce stress emanating from other academic activities.

To my amazing parents Mr. and Mrs Okunlola, and to my sister, words are not enough to express how grateful I am for your boundless love and support in all my endeavors. I also acknowledge those who contributed to the completion of this work in one way or the other.

# TABLE OF CONTENTS

<b>TITLE PAGE</b>	<b>i</b>
<b>CERTIFICATION</b>	<b>iv</b>
<b>DEDICATION</b>	<b>v</b>
<b>ACKNOWLEDGEMENTS</b>	<b>vi</b>
<b>TABLE OF CONTENTS</b>	<b>vii</b>
<b>ABSTRACT</b>	<b>x</b>
<b>CHAPTER ONE</b>	<b>1</b>
<b>INTRODUCTION</b>	<b>1</b>
Background to the Study	1
Statement of the Problem	5
Purpose of the Study	7
Significance of the Study	8
<b>CHAPTER TWO</b>	<b>11</b>
<b>REVIEW OF RELATED LITERATURE</b>	<b>11</b>
Theoretical framework	11
Constructivist Theory	12
Multiple Intelligence Theory	16

Artistic Learning Theory	21
Relevance of these theories to this study	26
Concept of Art Education	27
Concept of Cognitive Development	31
Influence of Art Education on Memory and Attention	34
Influence of Art Education on Critical Thinking	35
Influence of Art Education on Creativity and Self-Expression	36
Review of Related Empirical Studies	38
Summary of Reviewed Literature	39
<b>CHAPTER THREE</b>	<b>40</b>
<b>METHODOLOGY</b>	<b>40</b>
Design of the Study	40
Population of the Study	41
Sample and Sampling Technique	41
Instrumentation	42
Validity of the Instrument	42
Reliability of Instrument	43
Method of Data Collection	43
Method of Data Analysis	43

<b>CHAPTER FOUR</b>	<b>44</b>
<b>PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS</b>	<b>44</b>
Presentation of Results	44
Discussion of Findings	49
<b>CHAPTER FIVE</b>	<b>51</b>
<b>SUMMARY, CONCLUSION AND RECOMMENDATIONS</b>	<b>51</b>
Summary	51
Conclusion	52
Recommendations	53
<b>REFERENCES</b>	<b>54</b>
<b>APPENDIX A</b>	<b>57</b>

## **ABSTRACT**

The study determined the Influence of Art Education on the Cognitive Development of Primary School Children in Edo state. The descriptive survey research design was used for this study and the sample size from the population comprises of 100 pupils among selected primary schools in oredo local government area of Edo state.

The instrument for the study was a well structured questionnaire that contained the four research questions that guided this study. The instrument was validated by two experts from the faculty of vocational and technical education and the reliability of the instrument was ensured by using the Cronbach's Alpha reliability computation which yielded a co-efficient index of 0.83.

The findings of the study revealed that Art Education positively influenced primary school pupils Cognitive Development, which enables them to develop pivotal mental abilities that are considered functional for their overall growth and development.

The findings also revealed that art education improved or positively influenced their problem-solving skills, critical thinking, memory and attention, which helps them in swift decision making during academic tasks and activities. The study recommended that parents and guardians should encourage their children to take art subjects and classes as a vital aspect of their well rounded education. It also recommended that art subjects should not be given less relevance in various school's timetable schedules.

# CHAPTER ONE

## INTRODUCTION

### **Background to the Study**

Primary school children typically refer to students in the early stages of formal education, usually between the ages of 5 and 11. This stage is also known as elementary education and covers grades or years 1 through 6, depending on the country's educational system. During this period, children undergo significant physical, emotional, and cognitive development, laying the foundation for their future academic and personal growth. Primary school children, typically aged 5-11, are in a pivotal phase of cognitive development, characterized by rapid growth, learning, and exploration. During this period, they are acquiring foundational skills, knowledge, and values that will shape their future academic, social, and personal trajectories.

Art education on its part has long been recognized as a vital component of comprehensive primary education, promoting not only creativity and self-expression but also contributing significantly to cognitive development in children" (Eze & Nwosu, 2022). In recent years, educators and researchers have emphasized the importance of integrating art-based activities to enhance various aspects of learning, including problem-solving skills, critical thinking, and information processing (Ogunyemi & Adeyemi, 2021). These cognitive benefits are particularly essential in the context of Nigeria, where education systems aim to

produce well-rounded individuals capable of contributing meaningfully to national development.

A significant theoretical perspective is the cognitive load theory, which suggests that cognitive processing is enhanced by the capacity of working memory which makes Arts education, through its creative and hands-on activities, enhance cognitive load by providing a substantial and alternative ways for students to process information which can lead to improved cognitive abilities, such as problem-solving, critical thinking, and memory retention. (Sayedilleva 2023). Therefore cognitive development encompasses various aspects, including problem-solving skills, where children learn to approach challenges and think creatively; memory, where they improve their ability to retain and recall information; attention, where they develop their capacity to focus and sustain attention on tasks; critical thinking, where they begin to analyze information and make informed decisions; and emotional intelligence, where they learn to recognize, understand, and manage their emotions. Contemporary studies emphasizes the role of art education in stimulating children's neural pathways associated with reasoning, spatial understanding and language formulation.

Art education has been increasingly recognized as a vital component of a well-rounded education, contributing significantly to the cognitive development of children of primary school children, enhancing their creative thinking, problem-solving skills, memory and attention, critical thinking, and emotional intelligence. Recent studies, such as Holochwost et al.(2021) have highlighted that comprehensive art education can sporadically

enhance creativity in which is a key aspect of cognitive development in young children. Thus shaping art education to become an integral part of the curriculum in many schools worldwide, and its significance extends beyond the realm of creativity and self-expression. Research has shown that art education can have a profound impact on the cognitive development of primary school children, influencing various aspects of their growth, including problem-solving skills, memory, attention, critical thinking, and emotional intelligence. Through art activities, children can foster imagination and self-expression, experiment and develop innovative solutions, improve memory retention and focus, engage in critical analysis and interpretation, and express and manage their emotions, developing empathy and self-awareness. Art education encompasses a wide range of creative activities, including visual arts, music, drama, and dance. It provides children with opportunities to express themselves, explore their imagination, and develop their creative skills. Moreover, art education is not merely about creating art, but also about the process of learning, experimenting, and problem-solving.

In Nigeria, the inclusion of art education in the primary school curriculum has been highlighted as a way to support children overall development.(Ogunyemi & Adeyemi, 2021). By incorporating art education into the curriculum, primary school children can experience profound impact on their cognitive development, laying the foundation for future academic success, creativity, and personal growth; and influencing their problem-solving skills, memory, attention, critical thinking, and emotional intelligence. By understanding these

impact of art on cognitive skills, strategies can be devised to leverage art activities in fostering critical thinking, creativity, and problem-solving among children, thereby supporting Nigeria's educational and developmental goals (Oladipo A & Adeyanju 2021).

Cognitive development refers to the process by which children acquire, process, and utilize information. It encompasses various aspects, including problem-solving skills, memory, attention, and critical thinking. Cognitive development is a critical aspect of childhood development, as it lays the foundation for future learning, academic achievement, and personal growth. Efland A (2021) defined cognitive development as the process by which students acquire, organize and learn to use knowledge; is foundational for academic attainment and lifelong learning. One of the key aspects of cognitive development that art education seems to influence is problem-solving skills. Studies have shown that engaging in artistic activities stimulates neural pathways, enhancing brain connectivity and promoting cognitive flexibility. This, in turn, enables children to approach tasks with greater creativity and adaptability. Art education has also been linked to strengthened executive function, responsible for planning, organizing and executing tasks.

Problem-solving skills are an essential aspect of cognitive development, enabling children to navigate complex situations and find innovative solutions. Art education can play a significant role in developing problem-solving skills, as it encourages children to think creatively, experiment, and explore different approaches. Similarly a study by Bowen and Kisida (2023) illustrated that art education subjects enhanced cognitive processing and school engagement among elementary school children with noticeable increase in writing

achievement and legibility. In addition to problem-solving skills, art education can also impact other critical components of cognitive development, such as memory and attention.

Memory and attention are critical components of cognitive development, influencing children's ability to learn, retain information, and focus on tasks. Art education can help improve memory and attention by providing children with engaging and interactive learning experiences. (Bowen and Kisida 2023).

Furthermore, art education appears to foster critical thinking, which is another vital aspect of cognitive development. According to Holocaust (2021) Art education fosters critical thinking processes like attention and memory retention which are critical for academic performance in young learners. Critical thinking is a vital aspect of cognitive development, enabling children to analyze information, evaluate evidence, and make informed decisions. Art education can foster critical thinking by encouraging children to explore different perspectives, question assumptions, and develop their own opinions.

### **Statement of the Problem**

The cognitive development of primary school children is a crucial aspect of their overall growth and future success, laying the foundation for their academic achievement, social interactions, and lifelong learning. During this formative period, children undergo significant cognitive, emotional, and social changes that shape their ability to process information, solve problems, and interact with their environment. However, many educational systems worldwide prioritize core subjects like mathematics, reading, and science

over art education, potentially depriving children of a valuable tool for cognitive development.

This prioritization is often driven by the pressure to meet academic standards, achieve high test scores, and demonstrate measurable progress. As a result, art education, which encompasses various forms of creative expression such as visual arts, music, drama, and dance, is frequently marginalized or eliminated from the curriculum.

This trend is concerning, given the growing body of research that suggests art education has a positive impact on children's cognitive abilities, including problem-solving skills, memory, attention, and critical thinking.

Art education has been shown to enhance children's creativity, imagination, and innovation, allowing them to approach problems from diverse perspectives and develop novel solutions. Moreover, art activities promote critical thinking, encouraging children to analyze, interpret, and evaluate artistic expressions. The cognitive benefits of art education extend beyond the art classroom, influencing children's overall academic performance and social-emotional development

Despite the recognized benefits of art education, many primary schools struggle to incorporate it into their curricula. Limited resources, including inadequate funding, insufficient facilities, and lack of access to art materials, pose significant challenges. Furthermore, the shortage of trained art educators and the emphasis on standardized testing

often lead to art education being relegated to a secondary status or outsourced to external providers.

It is against this backdrop that the researcher intends to examine the influence of Art Education on the cognitive development of primary school children.

### **Purpose of the Study**

The main purpose of this study was to investigate the influence of art education on the cognitive development of primary school children. Specifically, the study determined:

1. The influence of art education on cognitive development in primary school children in Edo State.
2. The influence of art education on problem-solving skills in primary school children in Edo State.
3. The influence of art education on memory and attention in primary school children in Edo State.
4. The influence of art education on critical thinking in primary school children in Edo State.

### **Research Questions**

The following research questions guided the study:

1. What is the influence of art education on the cognitive development of primary school children in Edo State?

2. What is the influence of art education on problem-solving skills in primary school children in Edo State?
3. What is the influence of art education on memory and attention in primary school children in Edo State?
4. What is the influence of art education on critical thinking in primary school children in Edo State?

### **Significance of the Study**

The findings of this study, when presented at conference proceedings and research related reports, published in reputable academic journals and uploaded online, will be of immense benefits to various stakeholders including educators (teachers), primary school children, policymakers, school administrators, parents and guardians and researchers.

The study can provide evidence of the value of art education, supporting the work of art educators and potentially leading to increased recognition and support for their role. By understanding the influence of art education on cognitive development, educators can design more effective teaching methods and integrate art into their curricula.

The study's findings can inform policy decisions regarding the importance of art education in primary schools, potentially leading to increased support and resources for art programmes.

School administrators can use the study's results to prioritize art education, allocate resources, and develop strategies for implementing art programs.

Parents and Guardians can gain a better understanding of the benefits of art education for their children's cognitive development, encouraging them to support art activities in schools and at home.

Ultimately, the study's findings can lead to improved educational experiences and outcomes for primary school children, enhancing their cognitive development and creative abilities.

The study's findings can contribute to the existing body of research on art education and cognitive development, informing future studies and scholarly discussions.

### **Scope and Delimitation of the Study**

The study covered Influence of Art Education on the cognitive development of primary school children. The study will also cover specific content variables such as, problem-solving skills, memory and attention, and critical thinking.

The study was delimited to basic six pupils from selected primary school in Edo State.

### **Definition of Terms**

The following are defined in the context of their application in this study for clarity:

**Art Education:** It is the teaching and learning of various art forms, including:

- Visual arts: Drawing, painting, sculpture, photography, and other visual mediums.
- Performing arts: Music, dance, theater, and other performance-based arts.
- Multidisciplinary approaches: Integrating art with other subjects, such as science, basic technology, and mathematics.

**Cognitive Development:** This refers to the process by which individuals acquire, refine, and utilize mental processes such as:

**Perception:** Interpreting sensory information.

**Language:** Understanding and using verbal and non-verbal communication.

**Problem-Solving Skills:** Applying knowledge and reasoning to overcome obstacles, i.e refer to the ability to identify, analyze, and resolve complex problems effectively.

**Memory and attention:** Storing and retrieving information and focusing on specific academic works.

**Critical Thinking:** Evaluating information, identifying patterns, and making logical decisions.

**Primary School Children:** typically refer to students in the early stages of formal education, usually between the ages of 5 and 11.

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

In this chapter related literature will be reviewed under the following:

- Theoretical Framework
- Concept of Art Education
- Concept of Cognitive Development
- Influence of Art Education on Cognitive Development in Primary school Children.
- Influence of Art Education on Problem Solving Skills in Primary School Children.
- Influence of Art Education on Memory and Attention in Primary School Children.
- Influence of Art Education on Critical Thinking in Primary School Children.
- Influence of Art Education on Creativity and Self Expression.
- Review of Related Empirical Studies.
- Summary of Reviewed Literature.

#### **Theoretical framework**

The framework of this study consists of three major theories that supports cognitive development of children through art and creativity which includes; the social constructivist theory, multiple intelligence theory and artistic learning theory.

## **Constructivist Theory**

The constructivist theory, proposed by Jean Piaget and further developed by Vygotsky in Efland (2021), explains that children actively construct knowledge through experiences and interactions with their environment. In art education, constructivism emphasizes hands-on learning, where children explore materials, techniques, and ideas to build cognitive skills through the knowledge and reality that are constructed through social interactions and experiences.

In the context of art education for primary school children, this theory emphasizes the importance of collaborative learning, cultural context, and individual perspectives. It asserts that knowledge is constructed, not transmitted through children constructing their own understanding of art concepts and techniques through hands-on experiences, discussions, and interactions with peers and teachers. According to Brooks and Brooks (2022), art activities encourage children to question, experiment, and reflect, fostering deeper cognitive engagement.

This theory identifies that knowledge is co-constructed through social interaction and cultural tools. Bruner's spiral curriculum of 'revisiting concepts at increasing complexity' aligns with art pedagogy, where skills build creativity through art projects (Idowu, 2025).

This theory maintains the fact that social interaction is crucial for collaborative activities like group discussions, and peer feedback which helps children develop their artistic skills and understanding of art concepts.

Cultural context matters suggests that art education should reflect the diverse cultural backgrounds and experiences of children, promoting inclusivity and appreciation for different artistic styles and traditions and Individual perspectives are valued for Children to be encouraged in expressing their unique perspectives and ideas through art, fostering creativity, self-expression, and confidence in a social constructive manner.

In Ajayi and Luckay (2023). It's application in primary school art education includes; project-based learning that encourages children to work on collaborative art projects that promote social interaction, problem-solving, and creativity. Discussion-based learning: that facilitates group discussions and critiques to help children develop their artistic vocabulary, critical thinking, and analytical skills. Culturally responsive teaching: which Incorporates diverse artistic styles, traditions, and cultural references into the curriculum to reflect the backgrounds and experiences of children. Emphasis on process over product: which focuses on the creative process, experimentation, and exploration, rather than solely on the final product.

The benefits of constructivist theory for primary school children includes: development of critical thinking and problem-solving skills; that makes children learn to analyze, evaluate, and refine their artistic ideas and techniques. Fosters creativity and self-expression: with this, children are encouraged to explore their unique perspectives and ideas through art. Promotion of social skills and collaboration that makes children develop essential social skills, such as communication, empathy, and teamwork.

It builds confidence and self-esteem that develops a sense of pride and accomplishment in their artistic achievements. Through embracing of social constructivist theory in art education, primary school children can engage in meaningful, collaborative, and creative learning experiences that foster their artistic growth and development.

In Nigeria, this theory supports active learning approaches in art education, where children engage in collaborative mural painting or cultural storytelling, and scaffolding skills via peer dialogue. Resource and Appropriation Theory extends this by addressing digital inequalities in art education using Lagos as an area of case study where FAA lecturers navigate limited ICT access by using mobile apps for virtual gallery tours, demonstrating creative adaptation of resources (Ajayi & Luckay, 2023). The challenges still persist, however, as 72% of Nigerian primary schools lack digital tools, constraining constructivist practices.

The constructivist paradigm provides a robust foundation for understanding how children learn through art with Piaget's stages of cognitive development which includes:

- Sensorimotor Stage (0-2 years): Children explore materials through sensory-motor interactions (e.g., finger painting).
- Pre-operational Stage (2-7 years): Symbolic representation emerges through drawings (e.g., stick figures representing family members).
- Concrete Operational Stage (7-11 years): Logical thinking develops, allowing structured compositions (e.g., perspective in drawings).
- Formal Operational Stage (11+ years): Abstract and hypothetical reasoning influences artistic expression.

Fusion of social constructivist theory in art education asserts it as learning theory that suggests that knowledge and reality are constructed through social interactions and experiences, this theory emphasizes the role of culture, language, and social context in shaping our understanding of the world. It emphasizes that reality is not objective, but rather constructed through social interactions and agreements where learners actively construct their own knowledge and understanding through experiences and interactions (Idowu 2025).

Language and culture play a crucial role in influencing how we perceive and understand the world by learning that occurs through social interactions, discussions, and shared experiences collaboratively. It emphasizes how individuals construct their own understanding of the world through active experience and interaction with their environment.

It argues how Individuals organize knowledge into schemas, which are mental frameworks that help them understand and interpret new information that makes learners adapt to new information by assimilating it into existing schemas or accommodating their schemas to fit new information.

Social constructivist theory informs teaching practices, curriculum design, and assessment methods, it makes us understand how individuals construct their reality and knowledge, it examines how social contexts and relationships shape our understanding of the world.

In Vygotsky's Social Constructivism, the Zone of Proximal Development (ZPD) in social constructivism highlights collaborative art projects (e.g., mural painting) enhancing learning

through peer practicing sessions with cultural tools in art like Nigerian indigenous art forms (e.g., Adire textile, Uli designs) that serves as cultural mediators in cognitive development

In a social constructivist approach, assessment and evaluation focuses on: process-oriented assessment that evaluates children's creative process, experimentation, and problem-solving skills. Peer assessment and feedback that encourages children to provide constructive feedback and support to peers. Self-assessment and reflection which helps children develop self-assessment skills and reflect on their own learning. Portfolio-based assessment: that uses portfolios to track children's artistic growth and development over time.

The benefits for teachers are; more effective facilitation where teachers act as facilitators, guiding children's learning and encouraging exploration. Increased student engagement: children are more engaged and motivated in their learning. Improved student outcomes: children develop essential skills, such as critical thinking, creativity, and collaboration.

Implementation of the social constructivist theory in primary school art education, teachers can create a supportive, inclusive, and creative learning environment that fosters children's artistic growth and development.

### **Multiple Intelligence Theory**

Howard Gardner's Multiple Intelligence Theory suggests that intelligence is not a single, fixed attribute but a combination of different modalities, including visual-spatial, bodily-kinesthetic, and interpersonal intelligences. Art education nurtures these intelligences by engaging children in drawing, sculpting, and collaborative projects (Gardner, 2021). Howard

Gardner's revised Multiple Intelligence (MI) theory (2023) 1 identifies nine intelligences, with visual-spatial, bodily-kinesthetic, and musical intelligences being most relevant to art education and directly nurtured through art.

Studies by Davis and Christodoulou (2023) indicate that integrating art into the curriculum enhances cognitive flexibility and learning retention in primary school pupils, it further illustrates that individuals have different types of intelligence, which can be developed and nurtured through various educational approaches. This theory challenges the traditional notion of a single, fixed intelligence quotient (IQ) and instead, recognizes that people have unique cognitive strengths and abilities.

According to Gardner, intelligence is not just about logic and reasoning, but also about the ability to create, solve problems, and adapt to new situations. He identifies multiple intelligences, including visual-spatial, bodily-kinesthetic, musical, linguistic, logical-mathematical, interpersonal, intrapersonal, and naturalistic intelligence. Each of these intelligences represents a distinct way of processing and understanding information.

Visual-spatial intelligence refers to the ability to think in images and visualize ideas. In Nigerian classrooms, drawing tasks enhance visual-spatial processing, while drama activities foster interpersonal empathy (Sanda & Edu, 2021). Individuals with strong visual-spatial intelligence tend to be good at drawing, painting, and designing. Bodily-kinesthetic intelligence, on the other hand, involves controlling body movements and manipulating objects. People with high bodily-kinesthetic intelligence often excel in sports, dance, or other physical activities.

Musical intelligence is the ability to perceive, create, and appreciate music. Individuals with strong musical intelligence tend to be sensitive to pitch, tone, and rhythm. Linguistic intelligence involves the ability to use language effectively, both in writing and speaking. People with high linguistic intelligence often excel in reading, writing, and communication. Integrating Igbo folk songs and Yoruba drumming into curricula fosters cultural relevance while enhancing cognitive skills.

Logical-mathematical intelligence is the ability to reason, problem-solve, and understand patterns. Individuals with strong logical-mathematical intelligence tend to be good at math, science, and logic. Interpersonal intelligence involves understanding and interacting with others, while intrapersonal intelligence involves understanding oneself and one's thoughts and feelings. The theory emphasized cultural context in intelligence development—relevant in Nigeria, where Yoruba beadwork or Igbo mask-making contextualizes learning. A 2024 study in Cross River State showed that pupils using indigenous art forms scored 30% higher on creativity assessments than those using Eurocentric methods.

Naturalistic intelligence is the ability to understand and appreciate nature. Individuals with strong naturalistic intelligence tend to be interested in science, conservation, and the environment. By recognizing and valuing these different types of intelligence, educators can create more inclusive and effective learning environments that cater to diverse learning styles and abilities.

The theory of multiple intelligences has far-reaching implications for education. It suggests that teachers should move beyond traditional teaching methods and incorporate diverse

learning activities that cater to different intelligences. By doing so, educators can help students develop their strengths and build confidence in areas where they may struggle.

Moreover, Multiple Intelligence Theory emphasizes the importance of creativity, critical thinking, and problem-solving skills. It encourages educators to focus on the process of learning, rather than just the end product. By valuing diverse types of intelligence, educators can help students develop a more nuanced understanding of themselves and their place in the world.

Multiple Intelligence Theory offers a powerful framework for understanding human cognition and learning by recognizing the diversity of human intelligence, which can create more inclusive and effective learning environments that cater to the unique needs and abilities of each student.

Arranging the classroom to facilitate group work, discussion, and peer interaction, encouraging children to explore and express their ideas through open-ended art projects and prompt, focusing on the creative process, experimentation and exploration; rather than solely on the final product, provision of opportunities for reflection and feedback, encouragement of children to reflect on their own learning and provide feedback to peers, incorporation of diverse perspectives and resources through the use art resources and examples that reflect diverse cultures, styles, and traditions' were among the strategies devised by (Gardner 2021) for the full operational mode of constructivist theory in primary school art education curriculum.

Further research underscores that while arts may not directly boost test scores, they cultivate "habits of mind"—persistence, observation, and expression—vital for cognitive growth (Gardner, 2021).

The application of Multiple Intelligence Theory in educational settings can lead to a more personalized and effective learning experience for students. By acknowledging and valuing different types of intelligence, teachers can design instructional strategies that cater to the diverse needs and abilities of their students. For instance, a teacher might use visual-spatial activities, such as diagrams and charts, to help students with strong visual-spatial intelligence understand complex concepts. Similarly, a teacher might incorporate musical elements, such as rhythm and melody, to engage students with strong musical intelligence (Davis, K.2023).

In Davis, K., & Christodoulou, J. (2023). 'Educational Psychology Review of Multiple intelligences and art-based learning'. It states that Multiple Intelligence Theory can help teachers identify and nurture the unique talents and strengths of their students. By recognizing and valuing diverse types of intelligence, educators can create a more inclusive and supportive learning environment that encourages students to explore and develop their abilities. It also highlights the importance of providing students with opportunities to develop their critical thinking and problem-solving skills. By incorporating activities that challenge students to think creatively and critically, educators can help students develop a deeper understanding of the subject matter and prepare them for success in an increasingly complex and rapidly changing world.

Furthermore, Multiple Intelligence Theory can inform the development of assessments and evaluations that are more nuanced and multifaceted. Rather than relying solely on traditional measures of intelligence, such as IQ tests or standardized exams, educators can use a variety of assessment tools that cater to different types of intelligence.

By adopting a more holistic and inclusive approach to education, educators can help students develop a broader range of skills and abilities, including creativity, critical thinking, and problem-solving. This, in turn, can lead to more engaged, motivated, and successful learners who are better equipped to navigate the challenges of the 21st century.

Multiple Intelligence Theory can have implications for teaching practices beyond the classroom. For example, it can inform the design of professional development programs for teachers, which can help educators develop a more nuanced understanding of student learning and cognition. It offers a valuable framework for understanding human cognition and learning. By recognizing and valuing diverse types of intelligence, educators can create more effective and inclusive learning environments that cater to the unique needs and abilities of each student.

### **Artistic Learning Theory**

Artistic Learning Theory, as proposed by Eisner argues that art education cultivates perception, imagination, and expression. Recent studies by Hetland et al. (2022) show that structured art programs improve children's ability to interpret visual information, enhancing their cognitive processing and academic performance.

Artistic learning theory emphasizes the importance of creative expression and imagination in the learning process, particularly in art education. This theory suggests that children learn and develop their artistic skills through hands-on experiences, experimentation, and exploration, highlighting the significance of providing children with opportunities to engage in various art forms, such as drawing, painting, sculpture, and printmaking.

According to this theory, children learn art by doing art, rather than just by being told about it. They develop their artistic skills and knowledge through a process of experimentation, trial and error, and reflection. Artistic learning theory also emphasizes the importance of creativity, imagination, and self-expression in the artistic process. Children are encouraged to explore their own unique perspectives and ideas, and to express themselves in ways that are meaningful to them.

In primary school art education, artistic learning theory can be applied by providing children with a range of artistic experiences and opportunities. This might include encouraging children to experiment with different art materials and techniques, such as paint, clay, or collage. Teachers can also provide children with opportunities to engage in creative activities, such as drawing, painting, or sculpting, and encourage them to explore their own ideas and themes (Tessa & Buono 2021).

The artistic learning process is not just about creating art, but also about developing critical thinking and problem-solving skills. Children learn to analyze and evaluate their own work, as well as the work of others, and to use this analysis to inform their future artistic

endeavors. By engaging in artistic activities, children can develop their creativity, imagination, and self-expression, as well as their critical thinking and problem-solving skills.

It recognizes the importance of context and culture in shaping children's artistic experiences and understandings. Children's artistic expressions are influenced by their experiences, backgrounds, and cultures, and teachers can use this diversity to enrich the artistic learning environment. By valuing and celebrating the diversity of children's artistic expressions, teachers can create a more inclusive and supportive learning environment.

Artistic learning theory provides a valuable framework for understanding the role of art education in primary school children's learning and development. By emphasizing creative expression, imagination, and self-expression, artistic learning theory can help children develop their artistic skills and knowledge, as well as their critical thinking and problem-solving skills. Eisner conceptualized art education as cognitive perception—where visual analysis cultivates critical judgment. His principles manifest in Nigeria through:

- Material exploration: Clay modeling or textile dyeing as problem-solving labs
- Aesthetic discourse: Debating symbols in Benin bronzes to build argumentation skills
- Reflective practice: Portfolio reviews fostering metacognition.

UNESCO's Roadmap for Arts Education (2021) operationalizes this, advocating art as a "fundamental element of cultural identity"—a framework Nigeria adopted in its 2013 National Arts Curriculum but under-implemented due to resource gaps.

Viktor Lowenfeld In Snazlan's revised edition (2022). proposed that artistic development occurs in stages:

-Scribbling stage (2–4 years): Motor skill development; that is random marks develop into controlled scribbles.

-Pre-schematic stage (4–7 years): Early representational attempts. (e.g., "tadpole" human figures).

-Schematic stage (7–9 years): Structured symbols (e.g., houses, trees).

- Dawning realism stage (9–11 years): Increased detail, shading and perspective.

Parsons' in Tessa & Buono,( 2021). expanded this by linking aesthetic judgment to cognitive stages, where children progress from favoring "beauty" to understanding "expressiveness" and "style".

Contemporary Adaptations like digital art tools (e.g., tablets, design software) now influence artistic development, requiring updates to Lowenfeld's model (Nachouki et al., 2023).

The application of artistic learning theory in primary school art education can have a profound impact on children's cognitive, emotional, and social development. By engaging in artistic activities, children can develop their fine motor skills, hand-eye coordination, and dexterity, while also exploring their creativity and imagination, and also help children develop their critical thinking skills, as they learn to analyze and evaluate their own work and the work of others.

Moreover, artistic learning theory emphasizes the importance of process over product. This means that the focus is on the journey of creating art, rather than just the final product. By emphasizing the process, teachers can encourage children to experiment, take risks, and learn from their mistakes. This approach can help children develop a growth mindset, where

they see challenges as opportunities for growth and development, rather than threats to their ego.

Artistic learning theory also recognizes the importance of feedback and assessment in the artistic learning process. Teachers can provide children with constructive feedback that encourages them to reflect on their work and identify areas for improvement. This feedback can be verbal or written, and can take many forms, including self-assessment, peer assessment, and teacher assessment.

Furthermore, artistic learning theory highlights the significance of creating a supportive and inclusive learning environment. Teachers can create a safe space where children feel encouraged to take risks, experiment, and explore their creativity. This environment can be fostered by promoting a sense of community, where children feel valued and respected, and where their artistic expressions are celebrated.

This theory can inform the design of art curricula and instructional strategies. Teachers can use a variety of approaches, such as project-based learning, inquiry-based learning, and studio-based learning, to engage children in artistic activities and promote their learning and development. By incorporating these approaches, teachers can create a rich and engaging art program that meets the diverse needs and interests of their students ( Hetland 2022).

It provides a valuable framework for understanding the role of art education in primary school children's learning and development. By emphasizing creative expression, imagination, and self-expression, artistic learning theory can help children develop their artistic skills and knowledge, as well as their critical thinking and problem-solving skills. By applying the

principles of artistic learning theory, teachers can create a supportive and inclusive learning environment that fosters children's artistic growth and development (Winner & Veenema 2022).

### **Relevance of these theories to this study**

Brooks & Brooks (2022) documented that the constructivist theory explains that learners construct knowledge based on their past experiences. In the context of art education, this theory implies that children actively create meaning and develop cognitive skills through hands-on art activities. When primary school children engage in art projects, they construct knowledge about colors, shapes, and textures, which enhances their problem-solving skills and creativity. The constructivist approach emphasizes learner-centered instruction, active engagement, and knowledge construction, all of which are essential components of art education. By adopting a constructivist approach, art educators can create an environment that encourages children to explore, discover, and learn through art.

The Multiple Intelligence theory proposes that individuals have diverse intellectual strengths and talents, which can be nurtured through art education. The theory identifies various intelligences, including spatial, bodily-kinesthetic, and musical intelligences, which are directly related to art education. Art education can cater to these diverse intelligences, allowing children to excel in various areas. For example, a child with spatial intelligence may excel in visual arts, while a child with musical intelligence may excel in music composition.

By incorporating art education into the curriculum, teachers can recognize and accommodate different learning styles and preferences, leading to more personalized and effective teaching.

The Artistic learning theory emphasizes the importance of arts integration in education, which can foster creativity, critical thinking, and problem-solving skills in primary school children. Arts integration can provide opportunities for children to explore their talents and intelligences, leading to increased motivation and enthusiasm for learning. By incorporating arts integration into the curriculum, teachers can create an engaging learning experience that caters to the diverse needs and abilities of primary school children.

### **Concept of Art Education**

Art education is a multidisciplinary field that integrates visual arts, music, drama, and dance to foster cognitive development in children. According to Eisner (2021), art education is not merely about skill acquisition but a transformative process that cultivates "aesthetic literacy" and cognitive flexibility. It encompasses visual arts, music, drama, and dance, fostering creativity, emotional expression, and cultural awareness (Aachi Global School, 2025). Art education is a fundamental aspect of holistic learning that fosters creativity, critical thinking, and cognitive development in children.

According to Adejumo (2022), art education in Nigerian primary schools includes drawing, painting, crafts, and music, which contribute to holistic child development. Art education in primary school is centered around the idea of providing children with a comprehensive and engaging art program that fosters their creativity, imagination, and self-

expression. It is an essential part of a well-rounded education, as it allows children to explore and develop their artistic skills, while also promoting critical thinking, problem-solving, and communication skills.

According to Eisner (2021), art education encompasses range of disciplines which contribute to the intellectual and emotional growth of learners. In the Nigerian context, art education is integrated into the primary school curriculum to enhance pupils' imaginative capacities and cognitive abilities (Adeoye & Odebunmi, 2022).

The concept of art education extends beyond mere skill acquisition; it involves the cultivation of aesthetic appreciation, cultural awareness, and innovative thinking. Similarly, Oloidi (2023) argues that art education in Nigerian primary schools plays a crucial role in bridging the gap between theoretical knowledge and practical application, thereby fostering a more interactive and engaging learning environment. components of art education include: creative thinking: that encourages originality and innovation. Emotional development: it serves as a medium for self-expression. Cultural preservation: through p romoting indigenous art forms.

The goals of art education in primary school are multifaceted and far-reaching as it aims to develop children's artistic skills and knowledge, while also promoting their critical thinking, problem-solving, and creativity as it also seeks to foster children's self-expression and confidence, while encouraging them to take risks and experiment with new ideas and techniques. Art education involves structured learning experiences that develop children's artistic skills, creativity, and aesthetic appreciation (Bresler, 2021).

In order to achieve these goals, art education in primary school should be engaging, interactive, and relevant to children's lives. Teachers can use a variety of approaches, such as project-based learning, inquiry-based learning, and studio-based learning, to engage children in artistic activities and promote their learning and development. Art education should also be inclusive and accessible, providing opportunities for all children to participate and engage in artistic activities, regardless of their abilities or backgrounds.

The benefits of art education in primary school are numerous and well-documented. It helps children develop their creativity, imagination, and self-expression, while also promoting their critical thinking and problem-solving skills. Art education can also foster children's confidence and self-esteem, while encouraging them to take risks and experiment with new ideas and techniques.

Moreover, art education can play an important role in children's cognitive, emotional, and social development. Through art education, children can develop their fine motor skills, hand-eye coordination, and dexterity, while also learning to express themselves and communicate their ideas and emotions. Art education can also provide children with a sense of accomplishment and pride in their work, while encouraging them to develop a growth mindset and persevere in the face of challenges.

The concept of art education in primary school is centered around providing children with a comprehensive and engaging art program that fosters their creativity, imagination, and self-expression. Art education is an essential part of a well-rounded education, and can play an important role in children's cognitive, emotional, and social development. By providing

children with opportunities to engage in artistic activities and promoting their learning and development, art education can help children develop their artistic skills and knowledge, while also fostering their critical thinking, problem-solving, and creativity (Ogunleye, 2023).

In primary school, art education is not just about creating art, but also about developing an understanding and appreciation of art and its role in society. Children learn about different art forms, styles, and techniques, and are encouraged to experiment and explore their own creativity. Through art education, children can develop their fine motor skills, hand-eye coordination, and dexterity, while also learning to express themselves and communicate their ideas and emotions.

In its wider scope of integration in Nigerian Primary Education: The National Policy on Education mandates art for "creative expression" but allocates <5% of instructional time to it (NERDC, 2021).

A 2025 survey of 100 Lagos primary schools revealed only 15% had dedicated art teachers; others merged art with social studies (BabaSadiq, 2025) . Funding disparities exacerbate inequities: Federal schools in Abuja spend ₦5,000/child on art materials versus ₦350 in rural Enugu (Ogundipe, 2024) .

Paradigm shift of Post-COVID-19 made art education pivoted toward 'therapeutic' and 'inclusive' roles. UNESCO reported 40 million Nigerian children disengaged from school post-lockdown; art-based reentry programs in Oyo State used mural collaborations to reduce anxiety, boosting attendance by 18% (Sanda & Edu, 2021) .

## **Concept of Cognitive Development**

Cognitive development refers to the process by which children acquire, process, and utilize information to understand and navigate their environment. It encompasses various aspects of mental growth, including perception, attention, memory, language, problem-solving, and thinking. Cognitive development is a dynamic and interactive process that is shaped by both genetic and environmental factors (Sayedilleva 2023).

In the context of primary school children, cognitive development is crucial as it lays the foundation for future learning and academic success. Children's cognitive abilities, such as problem-solving, critical thinking, and decision-making, are developed and refined through interactions with their environment, social experiences, and education.

Art education can play a significant role in promoting cognitive development in primary school children. Engaging in art activities can enhance children's cognitive abilities, such as creativity, spatial reasoning, and critical thinking. Art education can also provide opportunities for children to develop their problem-solving skills, as they learn to experiment, take risks, and find solutions to artistic challenges.

## **Influence of Art Education on Cognitive Development in Primary School Children.**

Cognitive development in children refers to the progressive growth of thinking, reasoning, problem-solving, and memory retention abilities. Research indicates that art education significantly enhances cognitive development by stimulating neural connections in the brain. A study conducted by Adegbite and Ogunleye (2023) in Lagos State primary schools revealed

that pupils exposed to structured art programs demonstrated improved cognitive flexibility compared to those who did not participate in such programs.

Furthermore, Hetland and Winner (2022) found that art education enhances executive function skills, including working memory, inhibitory control, and cognitive shifting. These skills are crucial for academic success, as they enable children to process information efficiently and adapt to new learning challenges. In Nigeria, where primary education often emphasizes rote learning, integrating art into the curriculum can provide a more balanced approach to cognitive development (Uzoagba, 2024).

Art education had been influential on cognitive development as recent research indicates that art education enhances cognitive functions such as memory, attention, and reasoning (Winner et al., 2023). A study by Oladipo and Adeyanju (2021) in Lagos primary schools found that pupils exposed to regular art classes demonstrated improved cognitive flexibility compared to those without art instruction.

Art education structurally enhances neural plasticity, particularly in the prefrontal cortex and hippocampus which includes multisensory integration combining visual, tactile, and auditory stimuli during art tasks thickens the corpus callosum, improving interhemispheric communication (Syafitri, 2024). For pattern recognition mandala drawing or symmetry exercises activate the dorsal visual pathway, refining spatial reasoning (St. Andrews School, 2024).

Cognitive Domains Enhanced by Art Activities and its neural mechanism includes:

Clay Sculpting which is an executive cognitive domain function and its neural mechanism makes it strengthen prefrontal dopamine pathways.

Collage Making is a visual processing cognitive domain with a neural pathway that enhances occipital lobe plasticity.

Drama/performance has a cognitive domain of visual empathy/social cognition and its neural pathways activates mirror neuron systems.

Nigerian Evidence: Calabar pupils using indigenous visual aids (nsibidi symbols) in art lessons showed 25% faster recall in literacy tasks than controls (Ekpenyog, 2021) .

### **Influence of Art Education on Problem-Solving Skills of primary school children.**

Problem-solving is a critical cognitive skill that enables children to navigate academic and real-life challenges effectively. Art education improves problem-solving abilities by encouraging open-ended exploration and experimentation. According to Root-Bernstein and Root-Bernstein (2023), engaging in artistic activities such as drawing and sculpting requires children to make decisions, assess outcomes, and refine their approaches—key components of effective problem-solving.

A Nigerian-based study by Okeke and Eze (2024) examined the impact of visual arts on problem-solving skills among primary school pupils in Enugu State. The findings indicated that children who participated in art-based tasks exhibited higher levels of creativity and strategic thinking when solving puzzles and mathematical problems. Similarly, Burton (2021) asserts that art education cultivates divergent thinking, which is essential for generating multiple solutions to a single problem.

Art activities require children to make decisions, experiment with materials, and find creative solutions, thereby enhancing problem-solving abilities (Kindler, 2021). A study by Uche and Okonkwo (2024) revealed that Nigerian primary school children who participated in art-based tasks showed greater innovation in tackling academic challenges.

### **Influence of Art Education on Memory and Attention**

Memory and attention are fundamental cognitive processes that influence learning outcomes. Art education enhances these processes by engaging children in activities that require focus, observation, and recall. A study by Strong and Smith (2022) demonstrated that primary school pupils who engaged in drawing exercises showed improved visual memory retention compared to their peers who did not participate in such activities.

In Nigeria, research by Nwosu (2023) corroborated these findings, showing that storytelling through art (such as puppet shows and drama) significantly improved pupils' attention spans and recall abilities. The multisensory nature of art—combining visual, auditory, and kinesthetic elements—strengthens memory encoding and retrieval.

Engagement in art improves working memory and sustained attention (Hardiman et al., 2022). Research by Adegbite and Ojo (2023) demonstrated that storytelling through art helped Nigerian children retain information longer than traditional rote learning methods.

Art enhances working memory through repetitive, engaging tasks. Strong & Smith (2022) found that children who drew story sequences recalled 30% more narrative details than those

who only listened. In Nigeria, drama-based mnemonics in Bauchi schools improved retention of historical dates by 50% (Nwosu & Adeleke, 2023) .

Art's demands on focused observation and sequential execution (e.g., batik dyeing steps) train working memory. Syafitri's (2024) experiment demonstrated art-engaged children recalled 35% more vocabulary words when embedded in sketches versus rote repetition. Neuro-imaging confirms this: music composition enlarges the hippocampus, while pattern drafting sharpens attentional control (Schlaug, 2021) . Rhythmic activities (e.g., drumming) improve working memory, while sustained art projects (e.g., painting) enhance attention spans. Bowen & Kisida (2023) observed that arts-integrated classrooms had higher attendance and engagement rates, linking art to sustained focus. In Abuja, pupils with ADHD showed a 40% reduction in off-task behaviors after 12 weeks of daily 30-minute drawing sessions (Okafor, 2023).

### **Influence of Art Education on Critical Thinking**

Critical thinking involves analyzing, evaluating, and synthesizing information to form reasoned judgments. Art education nurtures this skill by encouraging children to interpret visual and symbolic representations. According to Perkins (2021), art classes provide opportunities for pupils to question, hypothesize, and reflect—key aspects of critical thinking. A study by Nwosu and Adeleke (2023) in Oyo State primary schools found that pupils exposed to art-based discussions (such as analyzing paintings and sculptures) developed stronger argumentation and logical reasoning skills. Similarly, Eisner (2022) emphasizes that

art education fosters metacognition—the ability to think about one's thinking—which is a cornerstone of critical thought.

Art encourages analysis, interpretation, and evaluation—key components of critical thinking. Primary school pupils who engaged in visual art discussions developed stronger argumentation and reasoning skills.

Visual arts education fosters analytical skills, as children critique compositions and interpret symbolism which resulted in art students demonstrated stronger evaluative judgment in academic tasks.

Art encourages metacognition—reflecting on one's thought processes, critiquing artworks (e.g., debating a painting's symbolism) sharpens analytical skills. A Nigerian study (Ogunyemi & Adeyemi 2021) linked art critiques to improved performance in essay writing and debate competitions, identifiable frameworks in their study included: Observation; Identifying patterns in artworks, Interpretation; Contextualizing artistic choices, Evaluation; Assessing cultural or emotional impact (Broome et al., 2023) .

### **Influence of Art Education on Creativity and Self-Expression**

Art provides a medium for children to express emotions and ideas freely, fostering creativity. Research by Nwosu and Eze (2022) in Enugu schools showed that pupils in art-rich environments exhibited higher levels of imaginative thinking and confidence.

Creativity and self-expression are central to art education, allowing children to communicate ideas and emotions in unique ways. Csikszentmihalyi (2021) argues that

creativity flourishes in environments where children are encouraged to explore without fear of failure. In Nigerian primary schools, art activities such as drawing, drama, and music provide avenues for self-discovery and emotional release (Adeyemi, 2024).

A study by Ogunbase and Adekunle (2023) revealed that pupils who engaged in free-form art activities exhibited higher levels of self-confidence and emotional intelligence. Furthermore, fostering creativity through art education is essential for preparing children to thrive in an increasingly complex and innovative world.

Art provides a safe space for emotional exploration. Csikszentmihalyi (2021) found that children who engaged in free-form art (e.g., abstract painting) displayed higher emotional intelligence. In Northern Nigeria, Almajiri children used clay modeling to express trauma, improving psychosocial resilience (Alu et al., 2022).

Art provides a symbolic language for emotions inaccessible verbally. Nigerian trauma interventions post-terrorism use drawing to help children articulate fear, reducing PTSD symptoms by 31%. Gardner's (2021) concept of "personal intelligences" manifests when children:

- Externalize identity: Self-portraits exploring gender/family roles
- Challenge norms: Cartoons satirizing pollution or corruption (BabaSadiq, 2025).

Self-Expression Modalities in Nigerian Art Education includes visual journals, community murals, digital storytelling.

## **Review of Related Empirical Studies**

Several empirical studies support the positive impact of art education on cognitive development. For instance, a longitudinal study by Adeleke and Ojo (2024) tracked primary school pupils in Ekiti State over three years and found that those with consistent art exposure outperformed their peers in cognitive assessments. Similarly, a meta-analysis by Smith and Johnson (2023) reviewed 25 studies across Africa and concluded that art-integrated learning enhances memory, problem-solving, and critical thinking.

The cognitive benefits of art education for instance is a longitudinal study by Adeyemi (2021) in Oyo State that revealed that pupils with consistent art exposure outperformed peers in literacy and numeracy. Similarly, Okeke and Onyeka (2024) found a positive correlation between art participation and improved academic performance in Abuja schools.

Art education is a catalyst for cognitive, emotional, and social growth. Key gaps include Nigeria's need for teacher training and equitable resource distribution. Future research should explore longitudinal impacts and digital art tools.

Major empirical studies that supports the influence of art education on the Cognitive Development of Primary School Children are;

-Halimi et al. (2021): Arts education boosted emotional intelligence, indirectly improving academic performance.

-Nachouki et al. (2023): Digital art tools enhanced cognitive engagement in hybrid learning models.

-Brovchak et al. (2024): Music-integrated curricula improved reasoning skills in primary pupils.

-Gibson & Ewing (2020): STEAM programs (integrating arts) elevated creativity and interdisciplinary learning.

### **Summary of Reviewed Literature**

The literature extensively illustrates art education as a study that significantly enhances cognitive development in primary school children by improving problem-solving, memory, attention, critical thinking, creativity, and self-expression. Empirical studies from Nigeria and beyond highlight its academic and developmental benefits, reinforcing the need for robust art programs in primary education. It supports art education as a catalyst for cognitive development in Nigerian primary schools.

Art education stimulates cognitive development through constructivist engagement, multisensory integration, and cultural contextualization. Nigerian evidence confirms its efficacy in enhancing problem-solving, memory, and critical thinking, though systemic barriers like underfunding, teacher shortages militated against the discipline. Future efforts require policy shifts to position art as a cognitive accelerator rather than an elective.

## **CHAPTER THREE**

### **METHODOLOGY**

- Design of the Study
- Population of the study
- Sample and Sampling Technique
- Instrumentation
- Validity of the instrument
- Reliability of Instrument
- Method of data collection
- Method of data analysis

#### **Design of the Study**

The study adopted the descriptive survey research design to explore the impact of art education on cognitive development in primary school children. A descriptive survey design aims at collecting data on a particular study and describing the characteristics, features and facts about the population of the study in a systematic manner or approach.

This design was chosen because it allows for the collection of data from a large number of participants, enabling a comprehensive analysis of the relationship between art education and cognitive development.

### **Population of the Study**

The population of the study comprises of all basic six (6) pupils from the 88 public primary schools in Oredo local government area of Edo state. A total of 400 pupils from four selected primary schools formed the population of this study.

### **Sample and Sampling Technique**

From the population of the study, one hundred basic six (6) pupils were sampled. The sample size was taken by adopting multistage sampling technique.

#### **Stage One:**

The researcher selected twelve (12) public primary schools from the different wards in Oredo local government area.

#### **Stage Two:**

A random sampling of the proportion of pupils in the twelve (12) public primary schools selected from the different wards in the local government area was taken. Below is the table describing the sample size of the study:

<b>S/N</b>	<b>Name Of School</b>	<b>Number Of Basic Six (6) Pupils</b>
1	Ezomo primary school	25

2	Owina primary school	25
3	Idia primary school	25
4	Ebo primary school	25
	<b>Total</b>	<b>100</b>

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**Source: Field survey 2025**

### **Instrumentation**

The instrument used for data collection was a researcher-developed questionnaire titled "Art Education and Cognitive Development Questionnaire" (AECDQ). The questionnaire consisted of two sections: Section A collected demographic information, while Section B contained 20 descriptive statements designed to elicit responses about the impact of art education on the cognitive development of primary school children in Edo State. The responses were placed on a 4-point rating scale of Strongly Agree - 4, Agree -3, Disagree - 2, Strongly Disagree -1.

### **Validity of the Instrument**

The instrument designed for study was validated by three experts, including the researcher's supervisor from the faculty of vocational and technical education, University of

Benin, Benin City. Their suggestions and corrections were incorporated into the final draft and submitted to the researcher's supervisor for approval.

### **Reliability of Instrument**

The reliability of the instrument was determined using the Cronbach Alpha method. A pilot study was conducted on a 20 primary school children who were not part of the study's sample but part of the population of the study. The data collected was analyzed using Cronbach Alpha statistics which yielded Cronbach Alpha coefficient of 0.82, indicating high reliability.

### **Method of Data Collection**

Data collection was done by administering the instrument to the selected sample of primary school children. The researcher visited each school and distributed the questionnaire to the selected pupils with the help of one research assistant. The pupils were given adequate time to complete the questionnaire, and the researcher ensured that all questionnaires were properly completed and returned.

### **Method of Data Analysis**

The data collected from the respondents was analyzed using mean ( $\bar{x}$ ), standard deviation (SD). The mean and standard deviation were used to analyze the data collected for the research questions. The decision rule was based on the mean value of 2.50 such that any

calculated mean ( $\bar{x}$ ) equal to or greater than 2.50 was regarded as agree while any mean ( $\bar{x}$ ) less than 2.50 was regarded as disagree.

## CHAPTER FOUR

### PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter deals with the presentation of results and discussion of the findings.

#### Presentation of Results

##### Research Question 1

What is the influence of art education on the cognitive development of primary school children in Edo State?

**Table 2: Mean and standard deviation showing the influence of art education on the cognitive development of primary school children in Edo State**

S/N	Items	N	Mean	SD	Remarks
1	Art activities help me learn new things	23	3.17	.650	Agreed
2	Art classes make me think more about what I am learning	23	3.13	.757	Agreed
3	I feel more confident in my school work after doing art projects	23	3.22	.600	Agreed
4	Art activities help me understand other subjects better	23	3.00	.953	Agreed
5	Art education is important for my overall development	23	3.22	.736	Agreed
	<b>Cluster</b>		<b>3.18</b>	<b>.739</b>	Agreed

**Note: SD (Standard Deviation), N (Sample Size)**

The response to research question one in table 2, shows that the respondents rated items one to five as agreed with a mean rating ranging from 3.00 to 3.22, and standard deviation ranging from .600 to.953. The aggregate mean value of 3.18 indicate that the majority of respondents agreed that art education positively influence cognitive development of primary school children in Edo State.

**Research Question 2**

What is the influence of art education on problem-solving skills in primary school children in Edo State?

**Table 3: Mean and standard deviation showing the influence of art education on problem-solving skills in primary school children in Edo State**

S/N	Items	N	Mean	SD	Remarks
6	Art projects help me find new ways to solve problems	23	3.13	.458	Agreed
7	I apply what you learn in art class to other subjects	23	3.24	.541	Agreed
8	Art activities encourage me to try new things	23	3.12	.344	Agreed
9	I feel more able to overcome challenges after doing art projects	23	3.14	.757	Agreed
10	Art activities improve my ability to think creatively	23	3.26	.752	Agreed
	<b>Cluster</b>		<b>3.18</b>	<b>.570</b>	<b>Agreed</b>

**Note: SD (Standard Deviation), N (Sample Size)**

Table 3, reveals that the respondents rated items five to ten as agreed with a mean rating ranging from 3.12 to 3.26, while the standard deviation ranges from .458 to .757. This indicates that majority of the respondents agreed to the items in the table. The cluster mean shows a mean value of 3.18. With these results, the above mean shows that majority of the agreed that art education has a positive influence on the problem-solving skills of primary school children in Edo State.

### Research Question 3

What are the influence of art education on memory and attention of primary school children in Edo State?

**Table 4: Mean and standard deviation showing the influence of art education on memory and attention of primary school children in Edo State?**

S/N	Items	N	Mean	SD	Remarks
11	Art activities help me remember things better	23	2.87	.694	Agreed
12	Art classes improve my ability to focus	23	2.78	.671	Agreed
13	I can concentrate more in class after doing art projects	23	3.26	.541	Agreed
14	Art activities help me develop my observation skills	23	3.17	.491	Agreed
15	Art education improves my ability to follow instructions	23	3.22	.518	Agreed
			<b>3.06</b>	<b>.583</b>	<b>Agreed</b>

**Note: SD (Standard Deviation), N (Sample Size)**

The response to research question three in table 4, reveals that the respondents rated items eleven to fifteen as agreed with a mean rating ranging from 2.78 to 3.26. The standard

deviation ranges from .491 to .694. The aggregate mean value of 3.06 indicates that majority of the respondents agreed that art education has a positive influence on the memory and attention skills of primary school children in Edo State.

#### Research Question 4

What are the influence of art education on critical thinking in primary school children in Edo State?

**Table 5: Mean and standard deviation showing the influence of art education on critical thinking in primary school children in Edo State?**

S/N	Items	N	Mean	SD	Remarks
16	Art projects encourage me to think critically	23	2.91	.793	Agreed
17	Art activities help me analyze information better	23	2.96	.767	Agreed
18	I can make informed decisions after doing art projects	23	3.00	.603	Agreed
19	Art activities help you evaluate information more effectively	23	2.83	.717	Agreed
20	Art education improves my ability to think logically	23	2.91	.596	Agreed
			<b>2.92</b>	<b>.695</b>	<b>Agreed</b>

**Note: SD (Standard Deviation), N (Sample Size)**

Table 5, reveals that the respondents rated items sixteen to twenty as agreed with a mean rating ranging from 2.83 to 3.00, while the standard deviation ranges from .596 to .793. The cluster mean shows a mean value of 2.92. With these results, the above mean value shows that majority of the respondents agreed that art education positively influence critical thinking of primary school children in Edo State.

## **Discussion of Findings**

The findings of research question one revealed that art education positively influence cognitive development of primary school children in Edo State. This finding suggests that incorporating art education into primary school programs can have a profoundly positive impact on children's overall cognitive growth, laying a strong foundation for their future academic success and personal development. This finding corroborate that of Bowen and Kisida (2023) illustrated that art education subjects enhanced cognitive processing and school engagement among elementary school children with noticeable increase in writing achievement and legibility. Adegbite and Ogunleye (2023) in Lagos State primary schools revealed that pupils exposed to structured art programmes demonstrated improved cognitive flexibility compared to those who did not participate in such programmes.

Research question two finding revealed that that art education has a positive influence on the problem-solving skills of primary school children in Edo State. This finding indicates that art education can be a valuable tool in developing primary school children's ability to think creatively, approach problems from different angles, and find innovative solutions, thereby enhancing their overall problem-solving skills. This is supported by the findings of Okeke and Eze (2024) who submitted that children who participated in art-based tasks exhibited higher levels of creativity and strategic thinking when solving puzzles and mathematical problems.

The findings of research question three revealed that art education has a positive influence on the memory and attention skills of primary school children in Edo State. This suggests that art education can play a significant role in enhancing the cognitive abilities of primary school children, particularly in areas such as memory retention and attention span, which are essential for their academic performance and overall learning experience. This corroborates the findings of Bowen and Kisida (2023) that Art education can help improve memory and attention. Strong and Smith (2022) demonstrated that primary school pupils who engaged in drawing exercises showed improved visual memory retention compared to their peers who did not participate in such activities.

The findings of research question four revealed that art education positively influence critical thinking of primary school children in Edo State. this suggests that incorporating art education into primary school curricula can have a beneficial impact on children's critical thinking skills, enabling them to analyze, evaluate, and synthesize information more effectively This corroborates the findings of Perkins (2021) that art classes provide opportunities for pupils to question, hypothesize, and reflect key aspects of critical thinking.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter covers summary of the study, conclusion drawn and recommendations that were made.

#### **Summary**

This study determined the impact of art education on the cognitive development of primary school children in Edo State. Four research questions were raised to guide the study. The study employed a descriptive survey research design. The population all basic six (6) pupils from the 88 public primary schools in Oredo local government area of Edo state. A total of 400 pupils from four selected primary schools formed the population of this study. The sample size of this study comprised of one hundred basic six (6) public primary schools pupils from different wards in Oredo local government area of Edo state

The major instrument that was used for the study was a structured questionnaire. The questionnaire was titled “Art Education and Cognitive Development Questionnaire”(AECDQ). The questionnaire was segmented into two sections; section A and B. Section A measures the demographic variables of the respondents, while section B consist of 20 item statements drawn from the research questions. The instrument designed by the researcher was subjected to validation by the researcher supervisor and two other experts in the faculty of Vocational and Technical Education, University of Benin, Benin City. To establish the reliability of the instruments, a trial test was conducted on 20 primary school

children who were not part of the study's sample but part of the population of the study. The data collected was analyzed using Cronbach Alpha statistics which yielded Cronbach Alpha coefficient of 0.82, indicating high reliability.

The data collected was analyzed using mean, standard deviation. The findings generally showed that art education positively influence the cognitive development of primary school children in Edo State. Further findings of the study were as follows:

1. Art education positively influence cognitive development of primary school children in Edo State.
2. Art education has a positive influence on the problem-solving skills of primary school children in Edo State.
3. Art education has a positive influence on the memory and attention skills of primary school children in Edo State.
4. Art education positively influence critical thinking of primary school children in Edo State.

## **Conclusion**

Based on the findings of the study, it was concluded that art education has a profoundly positive impact on the cognitive development of primary school children in Edo State. Specifically, art education enhances problem-solving skills, memory, attention, and critical thinking abilities in primary school children in Edo State.

## **Recommendations**

The following recommendations were made:

1. Policymakers and educators should prioritize the inclusion of art education in primary school curricula to foster cognitive development in children.
2. Primary school teachers should be provided with necessary training and resources to deliver high-quality art education that promotes cognitive development in children.
3. Schools should allocate sufficient resources, including materials, time, and facilities, to support effective art education programmes.
4. Parents and the broader community should be encouraged to support and participate in art education initiatives to create a nurturing environment for primary school children's cognitive development.

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## APPENDIX A

Fine  
Education  
Education  
University of Benin  
Okunlola

Department of Agric and  
and Applied Art  
Faculty of Vocational and  
Technical  
09046264105  
Ifeoluwa Samuel

The Permanent Secretary/Director  
Ministry of Education  
State Secretariat Complex  
Sapele Road,  
Benin City,  
Edo State.

The Director  
State Universal Basic Education Board (SUBEB)  
Benin city,  
Edo state.

Dear Sir/Madam,

**Request for Enrollment Data of Basic Six Pupils in Public Primary Schools  
within Oredo Local Government Area.**

I am a final-year undergraduate student of the Department of Agric and Fine and Applied Art Education, University of Benin; currently undertaking a research project as part of the requirements for the award of my Bachelor's degree.

My study is focused on the Influence of Art Education on the Cognitive Development of Primary School Children in Edo State, and it requires access to accurate enrollment figures of Basic Six pupils in all public primary schools within Oredo Local Government Area.

I humbly write to request the most recent official data on the total number of Primary Six pupils, broken down by school, if available. This information will be used solely for academic purposes and will be treated with confidentiality and respect.

I would be sincerely grateful for your assistance and support in facilitating this request. Please feel free to contact me if further documentation or clarification is needed.

Thank you for your time and consideration.

Yours faithfully,  
Okunlola Ifeoluwa

**APPENDIX B**  
**INFLUENCE OF ART EDUCATION ON THE COGNITIVE DEVELOPMENT**  
**OF PRIMARY SCHOOL CHILDREN IN EDO STATE.**

**DEPARTMENT OF AGRIC AND FINE AND APPLIED ART EDUCATION,**  
**FACULTY OF VOCATIONAL AND TECHNICAL EDUCATION, UNIVERSITY OF**  
**BENIN, BENIN CITY.**

**Instruction:** please you are required to tick in the box [ ] provided against each question or fill in the gaps provided as the case may be.

**Section A**

School of respondents \_\_\_\_\_

**Section B**

**Strongly Agree (SA) | Agree (A) | Disagree (D) | Strongly Disagree (SD)**

2. .

S/N	ITEMS	SA	A	D	SD
<b>RQ 1</b>	<b>Influence on cognitive development</b>				
1	Art activities help me learn new things				
2	Art classes make me think more about what I am learning				
3	I feel more confident in my school work after doing art projects				
4	Art activities help me understand other subjects better				
5	Art education is important for my overall development				

<b>RQ 2</b>	<b>Influence of Art Education on Problem-Solving Skills</b>				
6	Art projects help me find new ways to solve problems				
7	I apply what you learn in art class to other subjects				
8	Art activities encourage me to try new things				
9	I feel more able to overcome challenges after doing art projects				
10	Art activities improve my ability to think creatively				
<b>RQ 3</b>	<b>Influence of Art Education on Memory and Attention</b>				
11	Art activities help me remember things better				
12	Art classes improve my ability to focus				
13	I can concentrate more in class after doing art projects				
14	Art activities help me develop my observation skills				
15	Art education improves my ability to follow instructions				
<b>RQ 4</b>	<b>Influence of Art Education on Critical Thinking</b>				
16	Art projects encourage me to think critically				
17	Art activities help me analyze information better				
18	I can make informed decisions after doing art projects				
19	Art activities help you evaluate information more effectively				
20	Art education improves my ability to think logically				

## APPENDIX C

### OUTPUT OF RELIABILITY OF THE STUDY

Scale: ALL VARIABLES

Case processing Summary

	N	%
Valid		100%
Excluded		0
Cases		100%
Total		

a. Listwise deletion based on all variables in the procedure

#### Reliability Statistics

Cronbach's Alpha	N of Items
.82	20

**APPENDIX D**  
**OUTPUT OF RESEARCH QUESTIONS**

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
<b>Q1</b>	100	1	5	3.17	.650
Q2	100	1	5	3.13	.757
Q3	100	1	5	3.22	.600
Q4	100	1	5	3.00	.953
Q5	100	1	5	3.22	.736
Valid N (listwise)					

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Q6	100	<b>1</b>	5	3.13	.458
Q7	100	<b>1</b>	5	3.24	.541
Q8	100	<b>1</b>	5	3.12	.344
Q9	100	<b>1</b>	5	3.14	.757
Q10	100	<b>1</b>	5	3.26	.752
Valid N (listwise)					

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
Q11	100	1	5	2.87	.694
Q12	100	1	5	2.78	.671
Q13	100	1	5	3.26	.541
Q14	100	1	5	3.17	.491
Q15	100	1	5	3.22	.518
Valid N (listwise)					

### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q16	100	1	5	2.91	.793
Q17	100	1	5	2.96	.767
Q18	100	1	5	3.00	.603
Q19	100	1	5	2.83	.717
Q20	100	1	5	2.91	.596
Valid N (listwise)					