

# Effect of the use of Instructional Materials on Academic Performance of Pupils in Ikwuano Abia State

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**Abstract --** The study was aimed at finding out the effect of instructional materials on the academic performance of pupils. The study area was Ikwuano Local Government Area of Abia State, Nigeria. The study population comprised of all the students from the public and private primary schools in Ikwuano Local Government Area of Abia state. The simple random samplings technique was used for the selection of the sample and 300 pupils made up the sample for the study. The instruments for data collection were a questionnaire and the result of a post-test. Data collected were analysed using simple mean and percentage. The findings were that the children who were taught with instructional materials performed better than those who were not. It was recommended that teachers should be made to undergo seasonal trainings to acquaint themselves of the modern trends in instructional technology; they should make out time for improvisation of instructional materials; an instructional material bank should be located within the reach of the teacher for easy access; there is the need to explore and expand the scope of instructional materials from charts, and pictures to overhead projectors, slides and web-based instruction which will require satellite receiver, computer, television, electronic boards etc.

## I. INTRODUCTION

Learning involves the acquisition of new knowledge, ideas, skills, values and experiences which enable the individual to modify and or alter his actions (NTI Manual, 2006). Learning is a gradual process and presenting any learning concept to learners must be done to appeal to students of varied interests and abilities -moving from the known to the unknown and encouraging active class participation. The teacher cannot be said to have achieved his instructional objectives until there is the desired change in the pupils' behaviour. The teacher is therefore expected to use instructional materials to make the learner learn profitably. Abdu-Raheem (2016) defines instructional materials as essential and significant tools needed for teaching and learning of school subjects to promote teachers efficiency and improve students' performance. Isola (2010) defines instructional materials as objects or devices that assist teachers to present their lessons logically and sequentially to the learners. This means that they serve as a guide to the teaching and learning processes through the logical and sequential preparation and presentation of lessons. Instructional materials can be collectively said to be all the things that are used to support, facilitate, influence or encourage acquisition of knowledge, competency and skill (Abiodun-Oyebanji and Adu 2007). Instructional materials therefore are those things that a teacher or the learner uses in the course of teaching/learning to make learning simple, easy to understand, aid retention and recall whenever it is necessary.

Instructional materials can be divided into three major categories based on their sensory appeal, namely; audio, visual and audio-visual. Audio instructional materials are those that appeal to the auditory sense such as radio, audio tapes. Visual instructional materials appeal to the sense of sight and they come in the form of pictures, prints, real objects (models), CDs to mention but a few. Audio-visuals appeal to both the auditory and visual senses of the learner and stimulate interest to learn. Such materials take the form of films, television, audio-visual tapes, CDs, VCDs, DVDs and other high definition electronic devices. ICT has delivered several packages that can aid teaching and learning to achieve desirable learning objectives. These packages are found in mobile devices like smart phones, personal computers, internet facilities and the likes. ICTs provide a lot of learning experiences to learners with varied interest and capabilities. Pictorial illustrations are valuable assets. Projected visuals are able to convey information and specific experiences that are needed for the development of workable concepts. Films can modify motivations, interest, attitude and opinions. Relia (real objects) or three-dimensional models can be effective in teaching/learning as the learner learns a great deal by examining and manipulating a model.

Onuekwusi (2005) accounts of what audio-visual materials can do are as follow: they heighten motivation for learning because of their concreteness; foster continuity of thought when words are coupled with explanations in pictures and sounds; provide freshness and variety; appeal to students of varied interests and abilities. Others include: encourage active participation, give need reinforcement, widen the range of students' experience, assure order and continuity of thought and improve the effectiveness of other materials. Effective teaching and learning therefore requires a teacher to teach the students with instructional materials and use practical activities to make learning more vivid, logical realistic and pragmatic (Akinleye, 2010).

## II. IMPORTANCE OF INSTRUCTIONAL MATERIALS TO PUPILS

Jean Piaget's theory of child development places the child aged 7-11 years under the concrete operational stage (Obinaju, 1996). This implies that for this child to learn he has to see and if possible touch the objects of the lesson for concrete experience. Instructional materials allow pupils to have relatively uniform attention and opportunities to practice and acquire skills. They make teaching experiences flexible and rich enough to meet individual pupil's learning styles. Olumiran, Ajidagba and Jakeyinf (2010) noted that instructional materials have direct contact with the sense organs. Pupils are able to use a combination of senses (smell, hearing, touch, taste and sight) for easier and better acquisition of concepts and facts they are being taught. Instructional

materials enable pupils to see as a whole certain relationships that are difficult to conceptualize in parts. For instance, pupils in the kindergarten learn to identify and differentiate the shapes more accurately when they see the real objects. It allows them to compare and contrast the shapes and make a mental note of their similarities and differences. By means of instructional resources, pupils could learn about things too dangerous, too small or not just expedient to bring to the classroom e.g. a lion or a waterfall or a mountain. Any of these can be effectively taught to the pupils in the classroom by the use of appropriate instructional materials (Omojuwa, 2000).

Instructional Materials help the teacher in providing the means of widening his pupils learning experience, providing his pupils with meaningful source of information; provide the teacher the means of exposing the pupils to a wide range of learning activities and increase the efficiency of the teacher by providing tutorials and response guidance for individual pupils and small groups. Other benefits of instructional materials to pupils are the fact that they bring experts and learning resources to the classroom, and allow members of a group or class to share equally from the same teaching experience.

Instructional materials can facilitate learning by arousing the learners' interest, sustain attention, provide the learners with opportunities of interacting with their social and physical environment (e.g. during excursion), offer opportunity for independent and individualized learning, create concrete basis for conceptual thinking, offer opportunities for learners to develop their abilities and skills (NTI Manual, 2006).

The need for the utilization of instructional materials cannot be over emphasized. It is the life wire of the instructional process and has far-reaching successful outcomes. Abdu-Raheem (2011) attributes the ineffectiveness of the school system and poor performance of students in schools to the non availability and inadequacy of instructional materials. The contention is that availability of instructional materials in the right quantity improves pupils' learning achievement. Adequacy of instructional materials alone however, may not guarantee learners' achievement. These materials need to be utilized effectively to achieve the desired objective. Hence there is the need to find out the effect of utilization of instructional materials on academic performance of pupils.

## V. RESULTS

Table 1: Distribution of pupils based on their demographic characteristics

Variable	Frequency	Percentage
Age		
6 – 8	165	55
10 – 12	130	43.3
14 – 16	5	1.7
Total	300	100
Sex		
Male	153	51
Female	147	49
Total	300	100

Table 1 shows the distribution of pupils based on their demographic characteristics. Ninety-eight per cent of the sampled pupils were within 6 and 12 years of age with 51%

## III. HYPOTHESES

The following null hypotheses are stated to guide the study:

1. There is no significant difference in the mean achievement of pupils taught English studies using instructional materials and those taught without instructional material.
2. There is no significant difference in the mean achievement of pupils taught Mathematics using instructional materials and those taught without instructional material.
3. There is no significant difference in the mean achievement of pupils taught Social studies using instructional materials and those taught without instructional material.

## IV. RESEARCH METHOD

The study area was Ikwuano Local Government Area of Abia State, Nigeria. Ikwuano is located approximately 50 25' 60'' degrees North of the equator and about 70 34' 0'' degrees east of the Greenwich meridian. It is bordered by Olokoru and Ibeku communities in the north and north-west, and by Bende in the East, Nkalu in the south-east; Obot Akara in the South and Ohuhu-Nsulu in the south and south-west (Osondu, 2012)

The study population comprised of all the pupils in the public and private primary schools in Ikwuano Local Government Area of Abia state. There are 57 private and public primary schools in the area. A simple random sampling technique was used for the selection of the sample. At first, 10 primary schools were randomly selected then 5 pupils were also randomly selected from the six streams bringing the sample size to 300 pupils ( $10 \times 5 \times 6 = 300$ ).

The instruments for data collection were teacher-made tests. The tests were on English studies, Mathematics and Social studies. To find out the effect of the utilization of instructional materials on pupils academic performance, the 300 pupils in the sampled population were divided into two groups and given a pre-test to ascertain their entry performance. Thereafter one group was taught for two weeks with instructional materials and the other group was also taught the same lessons for two weeks without instructional materials by the same teacher. At the end of the two weeks, a test based on what was taught, was given to the two groups. The scores of the post-test were collected and analysed using the mean ( $\bar{X}$ ). The hypotheses were tested using the t-test at 0.05 level of significance.

being males and 49% as females. Obinaju (1996) supports the theory of Jean Piaget that the child within this age bracket

requires instructional materials to make learning concrete and real.

scores of pupils who were taught Mathematics, English Language and Social studies with instructional materials are 62.4, 64.5 and 67.2 respectively.

Table 2 shows the scores of pupils who were taught with Instructional Materials. The result indicates that the mean

Table 2: The scores of pupils taught with Instructional Materials

Scores	mid-point X	Mathematics		English Language		Social Studies	
		F	Fx	F	Fx	F	Fx
10 – 20	15	4	60	2	30	2	30
25 – 30	30	8	240	7	210	5	150
40 – 50	45	30	1350	25	1125	15	675
55 – 65	60	43	2580	48	2880	58	3480
70 – 80	75	48	3600	46	3450	37	2775
85 -95	90	17	1530	22	1980	33	2970
Total		150	9360	150	9675	150	10080
M			62.4		64.5		67.2

Table 3: The scores of pupils taught without Instructional Materials

Scores	mid-point X	Mathematics		English Language		Social Studies	
		F	Fx	F	Fx	F	Fx
10 – 20	15	18	270	15	225	12	180
25 – 30	30	23	690	27	810	33	990
40 – 50	45	48	2160	49	2205	41	1845
55 – 65	60	39	2340	33	1980	35	2100
70 – 80	75	17	1275	20	1500	22	1650
85 -95	90	5	450	6	540	7	630
Total		150	7185	150	7260	150	7395
M			47.9		48.4		49.3

Table 3 shows the scores of pupils who were not taught with instructional materials. The result indicates that the mean scores of pupils who were not taught Mathematics, English Language and Social studies with instructional materials are 48, 48.4 and 49.3.

instructional materials and those taught without instructional materials. The null hypothesis is therefore rejected.

The table 4, the calculated t-value of 7.64 is higher than the critical value of t which is 1.960 at 299 degrees of freedom and 0.05 alpha level. This shows that there is significant difference in the mean achievement of pupils taught English studies with

From the table 5, the calculated t-value of 6.93 is higher than the critical value of t which is 1.960 at 299 degrees of freedom and 0.05 alpha level. This shows that there is significant difference in the mean achievement of pupils taught Mathematics with instructional materials and those taught without instructional materials. The null hypothesis is therefore rejected.

Table 4: t-test of difference in pupils’ mean achievement in English studies

Variable	X	SD	N	Df	t-cal.	t--critical	Decision
With Instructional material	4.30	1.13	150	299	7.64	1.960	Null hypothesis rejected
Without Instructional material	3.23	1.28	150				

Table 5: T-Test Of Difference In Pupils’ Mean Achievement In Mathematics

Variable	X	SD	N	Df	t-cal.	t--critical	Decision
With Instructional material	4.16	1.19	150	299	6.93	1.960	Null hypothesis rejected
Without Instructional material	3.19	1.27	150				

Table 6: T-Test of Difference In Pupils’ Mean Achievement In Social Studies

Variable	X	SD	N	Df	t-cal.	t--critical	Decision
With Instructional material	4.48	1.19	150	299	8.50	1.960	Null hypothesis rejected
Without Instructional material	3.29	1.30	150				

From the table 6, the calculated t-value of 8.50 is higher than the critical value of t which is 1.960 at 299 degrees of freedom and 0.05 alpha level. This shows that there is significant difference in the mean achievement of pupils taught Social studies with instructional materials and those taught without instructional materials. The null hypothesis is therefore rejected.

### DISCUSSION

The study established that instructional materials make huge difference in learning achievements across subject lines. The National Policy on Education (2004) indicates that children in primary schools are within the age bracket of 6-11 years this is also confirmed by the data in table 1 on the distribution of pupils based on their demographic characteristics. Cognitive psychologists like Jean Piaget had established that children within this age bracket need a lot of cognitive exposures, learning experiences must be concretised before they can be meaningful to them. For this reason, they need so much of instructional materials that will appeal to their sense of touch, sight, smell, taste and smell. Without these, learning becomes an uphill task that just a few would attain. Akinleye (2010) affirms that effective teaching and learning requires a teacher to teach the students with instructional materials and use practical activities to make learning more vivid, logical realistic and pragmatic.

Instructional materials when used in teaching and learning aid understanding, retention and recall. It can therefore be said that it helps in increasing pupils learning experiences and subsequently improve their academic performance. This result gives credence to the submission of Abiodun-Oyebanji and Adu (2007) that instructional materials support, facilitate, influence or encourage acquisition of knowledge, competency and skills.

### CONCLUSION

Primary school pupils are within 6 and 12 years of age as indicated in the National Policy on Education and children within this age bracket need to be taught with instructional materials for them to learn effectively. The principle of presenting any learning concept to a learner from the known to the unknown and from the simple to complex has been as old as the first learning institution. Instructional materials make the teacher's work easy, strategic and result orienting. Sourcing, preparing and utilizing instructional material is a vital aspect in lesson preparation and presentation.

### RECOMMENDATIONS

Based on the findings of this study, the following recommendations are made.

1. Teachers should be made to undergo seasonal trainings to acquaint themselves with modern trends in instructional technology.
2. There should be an instructional material bank within the reach of the teacher so that he/she could easily access one

at any point in time. This can be handled by the local, state or National Education Resource Centres.

3. There is the need to explore and expand the scope of instructional materials from chart, pictures etc to overhead projectors, slides and web-based instruction which will require satellite receiver, computer, television, electronic boards etc.

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