Evidence of gender equity in pupils' achievement in phonics, when exposed to adult and children-generated illustrations

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Abstract
The study examined evidence of gender equity in pupils achievement in phonics, when exposed to adult and children-generated illustrations in Njikoka Local Government Area of Nigeria. The study employed a non-equivalent quasi-experimental 2 x 2 factorial research design. Some 158 primary two pupils from 4 schools were used for the study. The English Achievement Test (EAT) was used to collect data. Three hypotheses were tested. The data were analysed using descriptive statistics and Analysis of Covariance (ANCOVA). The results showed that there was a significant main effect for the mode of illustration on pupils' achievement in phonics $F(1,153) = 21.315$, $p=.000$; there was no significant main effect of gender $F(1,153) = 1.082$, $p =.300$, and there was no significant interaction effect of mode of illustration and gender $F(1,153) = .701$, $p =.404$. The study recommended that since the children-generated illustrations were more effective in teaching phonics and enhancing pupils achievement in phonics, the Ministries of Education should ensure that textbook authors incorporate children-generated illustrations in the instructional materials for pupils in primary schools. Mode of illustration had no differential effects on male and female pupils achievement in phonics.

Keywords: Evidence, Gender, Equity, Pupils, Phonics, Illustrations

Introduction

The first thing that pupils are exposed to in their first English language lesson is phonics. Phonics is the sound system of the letters of a language, and letter and word associations. According to Tolbert, phonics is a method of teaching reading in which pupils are taught the letters of the alphabet and their sounds first [1]. Next, children are taught to blend the sounds phonetically to form words, and then to certainly build vocabulary, and increase effortlessness and understanding. Children can start reading within three to six months using the phonics method.

Reading is the way a person gets information from written letters and words. A person can read using sight, or touch, such as when a vision-impaired person reads Braille. Reading is a complex, multi-part process. Reading refers to activities as varied as a first grader's struggles with simple sentences in a storybook, or a scholar's attempting to understand the meanings of a poem. Reading exposes people to the accrued wisdom of human development. Established readers bring to the text their knowledge, capabilities, and interests; the text, in turn, allows them to expand those experiences and abilities and to find new interests. To reach maturity in reading, an individual goes through a series of stages, from readiness to adult reading ability.

Phonics is a system of teaching reading and spelling that stresses basic symbol sound relationships and their application in decoding words; a system used especially in beginning instruction. According to Ankrah, Nyanta, and Opoku, phonics is a method of teaching basic reading and spelling grounded on the phonetic clarification of normal spelling [2]. It is a method of teaching beginners to read and pronounce words by learning to associate letters or letter groups with the sounds they represent. It is also a method of teaching beginners to read and pronounce words by learning the phonetic value of letters, letter groups, and especially syllables [3]. Phonics, therefore, is all about sounds, and more prominently, about the procedure involved in applying letters, letter groups and syllables to phonetic values for beginners.

Phonics, therefore, is all about writing, reading, recognizing and producing the phonetic values of a language, at a beginning level for learners of a second or foreign language [4]. Phonics could be considered a holistic approach which at higher/older levels is

generally broken into more specific considerations which fall into formal categories like pronunciation, reading and writing [3]. Phonics can also be regarded as phonetics.

Phonics comprises the teaching of how to connect the sounds of the English language with letters or groups of letters. For instance, the sound /k/ can be represented by c, k, ck, ch, or q spellings and pupils have to be taught how to blend the sounds of letters to produce approximate pronunciations of unknown words. Children begin learning to read using phonics usually around the age of five to six years. Teaching the reading skills in the English language using phonics requires pupils to learn the connections between letter patterns and the sounds they represent. In the first grade, children begin to learn the printed equivalents for the spoken words they know. Some schools and reading textbooks teach the child to recognize whole words and stress the meaning of the text. Others first emphasize the study of phonics that is, the sounds represented by individual letters and the development of independent word recognition skills. Nearly all current programmes combine both techniques; they try to teach a child to recognize words and to learn phonics. For more than 60 years, research has shown that early, systematic phonics instruction produces high reading achievement, at least until the third grade.

Children learn the sounds of individual letters first, then the sounds of letters in combination and simple words. Phonics instruction requires the teacher to offer pupils a core body of information about phonics rules or patterns. Some of the phonics rules are that vowels letters are "a,e, i,o, and u"; and also sometimes "y" and "w". This also includes the diphthongs which is a mixture of two sounds, each with two different spellings. Here are some examples: /aʊ/ as in how, bow, allow; /əu/ as in foam, go, so, bone and /ɔi/ as in boy, joy.
 The rules also include the vowel sounds which are
/ɪ/ bit
/ɪ:/ beat
/e/ bet
/æ/ bat
/ɒ/ lot
/ɔ:/ caught
/ʊ/ put, foot
/u:/ boot
/ʌ/ cut, blood
/ɜ:/ nurse
/ə/ ago
/ɑ:/ cart
The consonants are all the other letters which stop or limit the flow of air from the throat in speech. They are: "b, c, d, f, g, h, j, k, l, m, n, p, qu, r, s, t, v, w, x, y, z. And consonant sounds include /p/, /b/, /t/, /d/, /h/, /r/, /s/, /ʃ/, /dʒ/, /k/, /l/, /m/, /v/, /w/, /j/, /f/, /ʒ/.

Consonant clusters or blends are the names given to two or three consonants that appear together in a word. Each consonant retains its sound when blended. The term cluster refers to the written form and the term blend refers to the spoken form. Consonant clusters consist of four major categories: r-clusters; s-clusters; l-clusters; and 3 letter clusters.

Pupils can be taught consonant clusters as soon as they have learnt the single consonant sound-spellings for instance r-blends: br, cr, dr, fr, gr, pr and tr;

> s-blends: sc, sk, sl, sm, sn, sp, st and sw
> l-blends: bl, cl, fl, gl, pl.
> 3 letter blends: str, spr, thr, chr,shr.

The consonant clusters thr, chr, phr, and shr, are made up of consonant digraph and a consonant. Every syllable in every word must have a vowel. English is a "vocal" language; every word must have a vowel. The consonant letter "C" when followed by "e, i or y" usually has the soft sound of /s/. Examples: "cyst", "central", and "city". The consonant letter "G" when followed by "e, i or y" usually has the sound /dʒ/. Example: "gem", "gym", and "gist". When 2 consonant letters are joined together and form one new sound, they are a consonant digraph. When a syllable ends in a consonant and has only one vowel, that vowel is short. Examples: fat, bed, fish, spot, luck. When a syllable ends in a silent /e/, the silent /e/ is a signal that the vowel in front of it is long. Examples: "make, gene, kite, rope, and use. When a syllable has 2 vowels together, the first vowel is usually long and the second is silent. Examples: pain, eat, boat, res/cue, say, grow. It is important to stress that diphthongs do not follow this rule; in a diphthong, the vowels blend to create a single new sound. The diphthongs are: /ɔɪ/, /au/, /uə/, . When a syllable ends in any vowel and is the only vowel, that vowel is usually long. Examples: pa/per, me, I, o/pen, u/nit, and my. When a vowel is followed by an 'r' in the same syllable, that vowel is 'r'-controlled sounds. It is neither long nor short. /r/ controlled sounds, have a vowel and the /r/ sound. For instance 'or' as in more; 'ar' as in-car; 'er' as in her; and 'air' as in fair Sometimes the rules do not work. There are many exceptions in English because of the vastness of the language and the many languages from which it has borrowed numerous words. The rules do work, however, in the majority of the words [5].

 It has been found that phonics is the most difficult content area in primary English [6]. This was evidenced in the preliminary study conducted by this researcher. There is evidence of mother tongue interference among pupils in the area of this study. The pupils often pronounce some words like rice as lice, road as load, red as led, radio as ledio and love as rove. The importance of phonics calls for a more effective way of preparing common instructional materials like a textbook for primary school pupils.

Textbooks are print media. According to Okwo, print refers to instructional materials that are produced on paper, and this includes textbooks, workbooks, teacher guide books, photographs, charts, flashcards, handbills, posters, cartoons, and comics [7]. Textbooks are the main print materials used in primary schools. Some consid-

erations involved in the design of English textbooks for primary pupils include the nature of illustrations, colour usage in illustrations and art development of the pupils.

Illustrations can be regarded as a drawing, picture or diagram for instructional purposes. Redmond defined illustration as a picture or the provision of the picture that compliments the text [8]. It is a drawing, picture, photograph, or diagram that accompanies and compliments a printed, spoken, or electronic text. An illustration is a drawing, painting or printed work of art that explains, clarifies, illuminates, visually represents, or merely decorates a written text, which may be of a literary or commercial nature. Images, photographs, drawings, and even cartoons powerfully make an impact on the viewer and convey meaning, and can evoke a visceral emotional reaction [9]. Therefore, the illustration could be regarded as a pictorial material appearing with a text and amplifying or enhancing it. Although illustrations may be maps, charts, diagrams, or decorative elements, they are more usually representations of scenes, people, or objects related in some manner, directly, indirectly, or symbolically to the text they accompany. It is observed that pictures lure children to read and interact with the text and provide mental images, allowing them to understand the written text more easily and remember it longer [10,11]. Illustrations may also increase comprehension and retention of the text material [12-14]. Illustrations are a vital part of visual image-making.

In Nigeria, a new impetus was given to Children's English language textbooks publishing in the late seventies and early eighties by indigenous publishers such as Onibonje Press, and by indigenized multinational publishers such as Macmillan with its Winner series, Longman with its Palm Library and Leopard series, and University Press with its Rainbow series and new picture books for the pre-school child. However, Okeke postulated that too often, the illustrator imposes his adult visual ideas on children or gets carried away by his fluency in drawing and painting or mere technical ability [15]. In Nigeria, this poses a lot of problems in that the designers are not knowledgeable enough to be able to ascertain the importance of illustrations produced by children. This can easily be noticeable in the types of illustrations made for children in Nigeria as compared to foreign illustrations. Salisbury (2004) pointed out those successful children's book illustrators' start by understanding the author's flight of fancy, then rendering the ideas and actions imaginatively in pictorial terms. Fiona in a response to what makes a good children's book noted that it is the same combination of factors that make any good book: is it original, well written and with the intended reader in mind? Of course, unlike adult books, you also have to consider the illustrations [16]. Fiona elaborated more on quality illustrations by pointing out that illustrations are what makes children's books magical. But Fiona fear that many adult buyers are wooed simply by pretty pictures [16]. Do the pictures complement the text and vice versa? Does the text over-clutter the illustrations or do the two elements work together to tell the story? On the other hand, beware of too much visual detail in stories for younger children. Simpler lines and bolder co-

lours may not be aesthetically pleasing to an adult eye, but they are easier to engage with for a child under four. From four upwards the illustrations may be more sumptuous. However, this trend may be reversed as children approach nine where the 'cooler' minimalist, cartoon-style illustrations are more in vogue. Most of these English textbooks meant for children have adult-generated illustrations without integrating artistic ideas or illustrations generated by the children themselves.

Andrews, Scharff and Moses conducted a study on the Influence of Illustrations in Children's Story Books. The purpose of the study was to obtain empirical data to determine the relationship between illustrations and reading comprehension [17]. It was also to get a better idea about the specific styles of illustrations that children prefer. A pilot study was conducted to gather some general preference information from K-3 level school children. Subjective data was gathered on preferences for eight books with illustrations. The significant finding was that the children tended to like illustrations in books that depicted brightly-coloured, cartoon-like characters.

New attitudes toward children and their education began to develop in the late seventeenth century when many educators appealed for greater consideration of children's distinctive needs and when the notion of pleasure in learning was becoming more widely accepted. Most indicative of this evolution of ideas are the writings of philosophers John Locke (1632-1704) and Jean-Jacques Rousseau (1712-78) as reported by Witkin [18]. In 1693 Locke wrote that "children should be treated as a rational creature. They must not be hindered from being children, nor from playing and doing as children, but from doing ill". Rousseau regarded childhood as a pure and natural state-one distinct from adulthood-and believed that a central goal of education should be to preserve the child's original nature. Locke also believed that it is essential for teachers to see things as children do. The use of children-generated illustrations especially in the production of pupils' textbooks is justified based on the philosophical outlook of John Lock and Jean-Jacques Rousseau. There is, therefore, the need to determine which of these modes of illustrations, adult or children-generated will be more effective in pupils learning phonics from texts.

It is highly desirable that illustrators of children's books, especially English textbooks, should be familiar with the developmental stages of artistic production with the complementary modes of expression. Often the stage of expression that a child has reached will give clues not only to the type of subject matter that may interest him but also to the tools, materials and activities with which he may cope successfully. Knowing his stage of expression will also help the illustrator to determine what kind of illustration, stimulation, assistance and general educational treatment the child requires. It is, therefore, pertinent to take note of the stages and modes, or "form concepts" of children's artistic expression, including the peculiarities of design in illustrating their texts and also putting the consideration of gender of the pupils. Gender has been seen to be related to the choice of illustration of children's books, especially in colour usages.

Gender refers to the socially constructed roles, behaviour, undertakings and characteristics that a particular society considers suitable for men and women. The distinct roles and behaviour may give rise to gender inequalities, that is differences between men and women that systematically favour one group. Gender is a set of characteristics distinguishing between male and female, particularly in the cases of men and women which depending on the context, may vary from sex to social role to gender identity [19]. It is a sociological concept that ascribed certain roles for males and females. Gender role expectations affect how males or females perform in educational settings. Gender is a set of characteristics distinguishing between males and females. It refers to the socially constructed roles, behaviour, activities and attributes that a particular society considers appropriate for men and women [20,21]. Traditionally, gender stereotype has over the years continued to limit females' capabilities and constrain their ability to participate in all aspects of human endeavour. Gender issues themselves affect all aspects of society to the extent that access of women to certain professions/competencies in higher institutions is constrained by these same sex-role stereotypes. Gender is a sociological concept which indicates those responsibilities or tasks that are amenable or at least perceived are such to males and females [20]. According to Munger, girls seem to prefer the colour pink and boys blue. From early to older ages, choice of illustration and colour differ [22]. This has to be put into consideration in illustrating English textbooks for primary school pupils for more effective instruction. Gender has been seen to be related to language learning. Many researchers are of the view that the gender of a learner is significant in assessing his/her achievement in a language class. Offorma found that girls achieved more than boys in foreign language acquisition [19]. Some other studies have shown that females show some superiority over males in language achievement [20,21]. Ogo noted that female secondary school students tended to be more relaxed in a language class than males [22].

In the field of children's artistic development, there are some controversial assumptions. One is the universality of children's drawing patterns in their early years regardless of their gender or culture, which means no matter where children are born, their patterns of artistic development do not differ in the early stages of so-called primitive art. Characteristic and universal patterns such as representational graphic patterns, spatial patterns, and so on, emerge with their cognitive development and physical growth at an early age [22,15]. The issue of concern here is whether gender has any influence on pupils learning phonics from the illustrated text.

Hypotheses

Ho_1 There is no significant difference in the mean scores of pupils taught phonics using adult-generated illustrations and children-generated illustrations.

Ho_2 There is no significant difference in the mean achievement scores of male and female pupils in phonics.

Ho_3 The interaction effect of mode of illustration and gender on pupils' mean achievement scores in phonics is not statistically significant.

Design of the Study

This study employed a quasi-experimental 2 x 2 factorial research design. Intact classes were used for the study. The design was represented thus after Fraenkel, et al.,who noted that a quasi-experimental factorial design is a quasi-experimental design modified to permit the investigation of additional independent variables [30]. The treatment variable is an illustration at two levels: Children (x1) and Adult generated illustrations (x2), while the moderator variable is gender at two levels: Male (y1) and Female (y2). Consequently, the design is a 2 x 2 pretest-posttest non-equivalent control group factorial design.

E	O_1	x_1	y_1	z_1	O_2
C	O_1	x_2	y_1	z_1	O_2
E	O_1	x_1	y_2	z_1	O_2
C	O_1	x_2	y_2	z_1	O_2

Where O_1 and O_2 are pretest and posttest scores respectively.
E = Experimental Group; C = Control Group

Participants

I enrolled 158 primary two pupils in the experiment. The age range was narrow: from six (75 pupils) to seven (83 pupils) years old. There were 77 males and 81 females. I divided the participants into two groups of 75 and 83 participants each without any criteria of choice. I experimented with four primary schools in Njikoka Local Government Area, Anambra State, Nigeria. I used the purposive sampling technique to select the six primary schools from 15 public primary schools in Abagana. The selection was based on

a. schools with only one stream of primary 2 classes;
b. schools close to each other to make the supervision of the experiment easier; and
c. schools that are comparable in terms of facilities.

Materials

Two different materials, namely, the instructional materials, that is, the booklet for the experiment and the instruments for data collection, were developed. The instrument for data collection was a researcher-made English Achievement Test (EAT) designed to assess pupils' achievement in phonics. Face validity was established for the instrument by two experts in English language education at the University of Nigeria, Nsukka, Nigeria and a primary two teacher from a school in Ukpo, Anambra State, Nigeria. The experts scrutinised the instruments in terms of relevance, general format, suitability, structure and adequate timing. A clear concept of phonics was covered. Questions on spellings and sounds were included. I modified the instructions along the line the experts recommended to make them clearer to the pupils. Content validity was established through the agreement of experts on the table of specifications that guided the development of EAT. The 30-item EAT comprises Matching, Filling the gap, and Crossword puzzle questions. The time allowed for the test was 40 minutes. I prepared

a marking scheme I used to score the test. The reliability of the EAT was .91determined using Kuder-Richardson formula 21 on test scores of 30 primary two pupils used for the pilot study.

Development of the pamphlets

Some 187 primary two and 178 primary five pupils were provided with papers, pencils and colour pencils and the names of items to draw, and were asked to generate illustrations on the items. The selected pupils generated 365 different drawings. Another set of pupils at the same level but from different areas validated the drawings by selecting their most preferred ones. I scanned the selected drawings on the computer and used them to develop the children-generated illustrations pamphlet. I obtained adult-generated illustrations from the conventional English language textbook of primary two pupils. I attach the two versions of some illustrations of the booklets for the experiment.

Experimental procedure

The researcher considered logistical ethical issues before starting the experiment. I got consent from the headteachers of the schools used for the study. I also required and got the permission of the parents of the pupils used in different features of the study. I held a conference with research assistants who were class teachers of the pupils that I used for the study. At the conference, I informed the teachers on how to carry on with the experiment.

At the beginning of the experiment, the research assistants (teachers) gave the subjects for both the treatment and control groups the EAT as a pre-test. Their class teachers distributed the instructional materials (pamphlets) to the pupils. The teachers randomly assigned the two versions of the pamphlets to the two groups for the study. Thereafter the teachers began the experiment adhering strictly to the lesson procedure developed for the groups. The teachers guided the pupils on how to use the pamphlets, which were collected back at the end of each lesson. The teachers ensured that the pupils read the pamphlets during the experiment. The teachers experimented during the normal lesson periods as provided in the timetable. By the end of the experiment, which lasted for one week and four days, the class teachers shuffled the items from the pre-test and administered them to the pupils as a post-test. I analysed the data the research assistants collected and used it to answer the research questions and test the hypotheses.

Method of data analysis

I used mean, standard deviation, and Analysis of Covariance (ANCOVA) to analyse the data using the IBM Statistical Package for the Social Sciences (SPSS) Version 25. I answered research questions using mean and standard deviation, while I tested the hypotheses using the Analysis of Covariance (ANCOVA) at an alpha level of 0.05. To interpret the strength of the different effect size statistics, I used Partial eta squared proposed by Cohen [31]. The following were the breakdown of the guidelines: .01, .06 and .138 are regarded as small, medium and large respectively.

Results

I presented the results in Tables 1, 2, 3, and 4

Table 1: Mean ($\bar{x}$) and Standard Deviation (SD) achievement scores of pupils taught using adult-generated illustrations and children-generated illustrations

GROUP	N	PRETEST		POSTTEST		ADJUSTED POSTTEST
		$\bar{x}_1$	SD_1	$\bar{x}_2$	SD_2	$\bar{x}$
Adult	75	14.58	4.01	21.76	4.70	22.43
Children	83	16.96	2.59	25.55	2.30	24.95

The data on adult and children-generated illustrations in Table 1 revealed that the adjusted mean score for pupils taught using children-generated illustrations was 24.95 while that of pupils taught with adult-generated illustrations was 22.43. Pupils taught phonics using children-generated illustrations, therefore, performed better than pupils taught with adult-generated illustrations.

Table 2: Mean ($\bar{x}$) and Standard Deviation (SD) achievement scores of pupils according to gender

GROUP	N	PRETEST		POSTTEST		ADJUSTED POSTTEST
		$\bar{x}_1$	SD_1	$\bar{x}_2$	SD_2	$\bar{x}$
Adult	77	15.86	3.46	23.96	4.11	24.02
Children	81	15.79	3.64	23.56	4.11	23.50

Table 2 revealed an adjusted mean score of 24.02 for male pupils, while the female pupils had an adjusted mean score of 23.50. Male pupils, therefore, performed slightly better than their female counterparts in phonics

Table 3: Mean ($\bar{x}$) and standard deviation (SD) achievement scores by mode of illustration and gender

MODE		CHILDREN			ADULT	
	N	x	SD	N	x	SD
Pretest						
Male	38	17.05	2.40	39	14.69	3.93
Female	45	16.89	2.76	36	14.42	4.14
Posttest						
Male	38	26.11 (26.07)	1.90	39	21.87 (21.79)	4.60
Female	45	25.09 (25.17)	2.52	36	21.64 (21.73)	4.88
Total						
Observed mean		25.55	2.30		21.76	4.70
Adjusted mean		24.95			22.43	
Note: adjusted means are in parentheses						

Table 3 revealed a higher adjusted mean score of 26.07 for male pupils who were taught with children-generated illustrations, while their female counterparts had an adjusted mean score of 25.12. Male pupils who were taught with adult-generated illustrations had an adjusted mean score of 21.79 while their female counterparts had an adjusted mean score of 21.73. The results do not suggest the ordinal interaction effect between mode of illustration and gender on pupils achievement scores in phonics. This was because, at all levels of gender, the adjusted mean scores were higher for the children-generated illustrations than for adult-generated illustrations; and the difference in the adjusted mean scores of male and female pupils in each group was negligible.

Table 4: Analysis of covariance of pupils phonics achievement scores by illustration, and gender

		Hierarchical Method					
		Sum of Squares	df	Mean Square	F	Sig	η^2
Posttest Covariates	Pretest	880.557	1	880.557	88.164	.000	
Main Effects	(Combined)	223.697	2	111.848	11.199	.000	
	Illustration	212.887	1	212.887	21.315	.000	.126
	Gender	10.810	1	10.810	1.082	.300	.006
2-WayInteractions	Illustration*Gender	6.999	1	6.999	.701	.404	.005
Model		1111.253	4	277.813	27.816	.000	
Residual		1528.120	153	9.988			
Total		2639.373	157	16.811			

Ho$_1$ There is no significant difference in the mean scores of pupils taught phonics using adult-generated illustrations and children-generated illustrations.

Data in Table 4 showed a statistically significant main effect for a mode of illustration F (1,153) = 21.315, p =.000. The null hypothesis, therefore, was rejected, indicating that there was a significant difference in the mean scores of pupils taught using adult-generated illustrations and those taught using children-generated illustrations. The adjusted mean score for adult-generated illustrations was 22.43, while that for children-generated illustrations was 24.95. The difference was in favour of children-generated illustrations. Children-generated illustrations, therefore, were superior to adult-generated illustrations in phonics instruction. The effect size η^2 of .126 indicated that this difference was important (.126>0.50).

Ho$_4$ There is no significant difference in the mean achievement scores of male and female pupils in phonics.

Table 4 revealed no significant main effect of gender F(1,153) = 1.082, p =.300. The null hypothesis was not rejected, indicating that there was no significant difference in the mean achievement scores of male and female pupils in phonics. The effect size $\eta2$ of .006 indicated that this difference was not important (.006>0.50) since it has a small effect.

Data in Table 4 indicated no significant interaction effect of mode of illustration and gender F(1,153) = .701, p =.404. The null hy-

pothesis was not rejected. The interaction effect of mode of illustration and gender on pupils mean achievement scores in phonics was, therefore, not statistically significant. The effect size η2 of .005 indicated that this difference was not important (.005>0.50) since it has a small effect.

Discussions
Effects of mode of illustrations on pupils mean achievement scores in phonics
The children-generated illustrations were superior to the adult-generated illustrations in facilitating the achievement of the learners in phonics. The differences in performance might have been as a result of the type of illustration presented to them. The children-generated illustrations were at the level of comprehension of the learners. When illustrations were generated by the children, they seemed to understand their drawings better than the ones the adult produced for them. Consequently, those exposed to children-generated illustrations performed better in phonics than those that were presented with adult-generated illustrations. The children-generated illustrations were more effective because the illustrations were characterized by their type of drawings thereby capturing their interest and maximizing comprehension of the subject matter. Even though children's illustrations may not be aesthetically pleasing to an adult eye, they are more attracted to their drawings more than the ones generated by adults. This is in line with the observations of Fiona , who in describing how illustrations made by children look, noted that they lack visual details, are mainly simpler lines and bolder colours; but they still attract them especially when they are used to produce their books [21]. The addition of children's illustrations in the instructional materials has greater benefits and the results have validated the theories that propose benefits for illustrated text. The children's type of illustration attracted them to a book, the characteristics of which enhanced their maximum comprehension of the text. This might be the driving force that motivated them in phonics instruction and thereby enhanced their performance in the achievement test.

It should be noted that children's styles of illustrations are self-initiated and self-directed modes of artistic expression. Learners determination of how the illustrations should be made, therefore are expected to be critical to the achievement of objectives of the lesson more than the traditional method by which the adult generate illustrations for children. The adult decides the type of illustrations to be produced based on the artistic principles and set standards and not necessarily on pragmatic consideration for learning. Learners, therefore, benefited more from children's generated illustrations than adult-generated illustrations in learning phonics.

The findings of this study are in line with that of a similar study by Andrews et al on the Influence of Illustrations in children's storybooks [21]. Their finding was that the children tended to like illustrations in books that depicted brightly coloured, cartoon-like characters. These are typical characteristics of children's drawings.

Influence of gender on the mean achievement scores of pupils in phonics
Results showed that male pupils performed better than their female counterparts in phonics. The different socialization processes of male and female persons in which the male persons are expected to explore their environment while the female ones are to conform or maintain their existing environment notwithstanding, male pupils did not significantly perform better than female pupils. The finding did not support that of Offorma and others that girls achieved more than boys in foreign language acquisition, and that female learners show some superiority over male learners in language achievement. The finding agreed with the results of some studies such as [22].

Interaction effects of mode of illustration and gender on pupils mean achievement scores in phonics
The interaction effect of mode of illustration and gender was not significant. However, male pupils performed better than female pupils irrespective of the mode of illustration. The differences in the mean scores were not significant. Burkitt et al found that children draw human figures taller than the baseline. In particular, boys tended to make larger positive drawings than girls, but there were no gender differences between their drawings [26]. It does appear that there were also no gender differences in the interpretation of the drawings. Thus, the depictions may not necessarily reflect a different stage of intellectual development. This may be the reason why there was no significant interaction effect of mode of illustration and gender on pupils achievement in phonics. At this stage of artistic development, children are the same irrespective of gender. The mode of illustrations, therefore, could be freely used without any bias in terms of gender to facilitate achievement in phonics.

Conclusions
It was found that children-generated illustrations were superior to adult-generated illustrations in the learning of phonics. Pupils taught phonics using children-generated illustrations performed better than their counterparts that were taught using adult-generated illustrations. However, gender did not significantly influence pupils achievement in phonics, even though the posttest mean scores of male pupils were slightly higher than those of their female counterparts. There was also no significant interaction between mode of illustration and gender, indicating that treatment did not have differential effects on male and female pupils achievement in phonics [27-33].

Implications
The findings of this study have implications for language education particularly in teaching reading and phonics in primary schools. The implications of this study border on the development of more virile instructional materials for teaching phonics. The study revealed that children-generated illustrations were superior to adult-generated illustrations. In addition, the findings

of this study have implications for textbook review. With these findings on the efficacy of children-generated illustrations in facilitating reading and phonics instruction among primary pupils, it has become obvious that the current textbooks recommended by the Ministry of Education are inadequate to meet the needs of the pupils and consequently need to be reviewed. This will, without doubt, enhance pupils achievement in phonics. The findings also have implications for instructing pupils who differ in gender.

Recommendations

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

A. Because the children-generated illustrations were more effective in teaching phonics and enhancing pupils achievement in phonics, the Ministries of Education should ensure that textbook authors incorporate children-generated illustrations in the instructional materials for pupils in primary schools.

B. English language teachers should be trained on how best to involve pupils in illustrating their instructional materials to facilitate phonics instruction. This could be achieved through seminars and workshops for teachers in primary schools.

C. Mode of illustration had no differential effects on male and female pupils achievement in phonics. As such the present system of teaching both males and females in the same class should be encouraged.

D. Authors and publishers of children's books should engage pupils' in illustrating their books. This may even lower the cost of production of these books.

E. Teachers should desist from imposing their adult ideas of illustration on pupils especially during lesson planning, implementation and evaluation. This is because teachers may be seeing children's illustrations as a caricature without knowing the efficacy of such illustrations.

Declarations

Ethical approval

I got both verbal and written approval from the participants. The parents/ guardians of the pupils delivered both verbally and in written accord on their behalf. Their involvement was voluntary. Postgraduate Studies Review Board, University of Nigeria, Nsukka, accepted the study technique.

Before participants' oral agreement, I informed them about the objective of the research and I made them understand that participation was intentional and denial to take part in the study attracts no consequence. I assured the privacy of the study participants of confidentiality and I detached individual identifiers in the summary data to guarantee discretion.

Consent

I agreed with all individual participants involved in the study.

Competing interests

I affirmed I do not have competing interests.

Data Availability

The data set I produced during and/or analyzed during the present study are not overtly available because of privacy matters but can be collected from the author if demanded.

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