WORLD INITIAL TEACHING ALPHABET VERSUS TRADITIONAL ORTHOGRAPHY:

The Contrastive Behavioural Products of Two Coding Systems in English for Nigerian Pupils

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S Y N O P S I S

BACKGROUND:

The nature of spoken and written Language and the various methods used in the teaching of reading were examined (Chapter I). This led to a consideration of the difficulties inherent in the complexities of traditional English orthography and some of the solutions suggested by various writers (Chapter II), including the Initial Teaching Alphabet (i.t.a.) and World Initial Teaching Alphabet (w.i.t.a.) both of which have been proposed by Sir James Pitman for use as transitional alphabets in order to postpone children's confrontation with the irregularities of Traditional Orthography (Chapter III).

THE INVESTIGATION:

World Initial Teaching Alphabet was introduced experimentally in 1966 for teaching young children to read English in some schools in Ibadan and Lagos areas of the Western and Lagos States of Nigeria, respectively, in order to discover the effects of using w.i.t.a., as compared with T.O. as an initial teaching medium. Experimental groups learnt to read through w.i.t.a. and then changed to T.O., while control groups read T.O. all the time (Chapter IV). By means of tests, observations, and the analysis of teachers' reports it was possible to compare the progress and attitudes of experimental and control groups, as well as the influence of sex and intellectual ability on the pupils' progress. The comparisons were made at four important stages, namely at the beginning of the experiment (Chapter IV), just before the experimental groups transferred to T.O. (Chapter V), about six months after the transition (Chapter VI), and about one year after transition (Chapter VII). Teachers' opinions on the effects of using w.i.t.a. were also analysed (Chapter VIII).

RESULTS:

The results obtained indicate that the teachers were favourably inclined towards the use of w.i.t.a. (Chapter VIII); that where pupils started learning to read through w.i.t.a. before they had had considerable contact with T.O., it gave them some advantages over those who used only T.O., whereas it gave no such advantages in cases where appreciable contact had been made with T.O. before w.i.t.a. was introduced; that the peformances of the experimental, relative to those of the control groups, did not differ markedly after they had transferred to T.O. from their performances before the transition; that the differences between the performances of w.i.t.a.-taught and T.O.-taught pupils appeared to be greater in the rural than in the urban areas; and that w.i.t.a. had salutary effects on the English reading skills of the teachers themselves (Chapter IX).

RECOMMENDATIONS:

Recommendations are made both on further use of w.i.t.a. and other important areas of needed research into the teaching and examining of English (Chapter X).

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CHAPTER I

INTRODUCTION

A. THE SYMBOLISATION THEORY OF LANGUAGE

The investigation here reported is concerned with some aspects of the teaching of 'literacy' in English to young school children in a 'second language' situation. By 'literacy' is meant the ability to communicate both receptively and expressively through the medium of written language, that is, by means of reading and writing; while a 'second language' is conceived as one which is later learned and is widely used for ordinary social intercourse by the members of a community besides the mother tongue.[1] The aim of the teaching of literacy is the broadening of the scope of communication through the medium of written language. Even Charles Jeffries[2] goes so far as to say, "The point of reading and writing is to make communication possible." The writer therefore considers it necessary to explain at the outset what he regards as the proper relationships between language, writing and meanings in human communication.

Any language is a system of vocalised 'codes'

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1. Further discussion of the role of English as a second language in Nigeria is contained in Section E of this chapter.

2. Jeffries, Charles (1967) Illiteracy: A World Problem. London, Pall Mall Press, p. 10.

known to a number of people and used by them for symbolising meanings. By 'meanings' is meant the objects, ideas, relationships, situations, operations and feelings which the human being is capable of perceiving or imagining. Such meanings exist independently of the codes used to represent them in a particular language. According to Jeffries[1], "A language, however defined, consists of a set of articulate vocal sounds which are conventionally accepted within a particular group of human beings as having particular meanings."

The smallest unit of sound in a particular language is a 'phoneme'. These phonemes are organized into certain characteristic structures which are known to all users of the language to a greater or less extent. One phoneme, or more usually, a sequence of phonemes, constitutes a structural unit known as a word which is the smallest linguistic unit[2] that can exist freely to symbolise a unit of meaning[3] in the language. Also one word, or several words organized and combined according to certain rules

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1. Jeffries, Charles (1967), op. cit. p. 15.

2. Of course, the smallest linguistic unit that has meaning is the morpheme, but this usually does not exist freely. For instance, both 'boy' and 'boys' are separate words. But in the word 'boys' there are two morphemes, viz. 'boy' and '-s', the former expressing the concept of 'young male person' and the latter expressing the idea of 'more than one': neither of the morphemes is adequate to convey the full meaning of the word. Thus, a word may consist of any of the following, (i) a single morpheme, e.g. 'boy', (ii) a combination of distinguishable morphemes e.g. boy/s, (iii) morphemes so fused as to become an unanalysable unit which is either, (a) minimally related to the root word, e.g. 'feet' (plural form of 'foot') and 'bought' (past tense of 'buy'), or (b) completely undistinguishable from the root word, e.g. 'sheep' (plural form of 'sheep') and 'hit' (past tense of 'hit'). See Yuen Ren Chao (1968) Language and Symbolic Systems. C.U.P. p. 51

3. A word also stands out as a structural unit in writing or printing; and a phrase, or a group of words, may also represent a unit of meaning.

which are peculiar to the language, form what is known as a 'sentence', that is, a linguistically complete and meaningful utterance which can be made for the purpose of communication in the language.

One often 'hears' the sounds of a foreign language without understanding what is said because both the structural organization of those sounds into words and sentences, and the manner in which the words and sentences are used to symbolise meanings are unfamiliar to the hearer.[1] There are therefore three important, closely related, and interdependent elements of a language which must be mastered before one can use the language for communication. These are, (i) the system of vocal sounds or the Phonemic System, (ii) the system of relationships between sound-patterns and meanings or the Semantic System, and (iii) the combinatorial patterns governing the building of basic units into larger structures for the expression of meanings, or the Morpho-Syntactic System. The learning of the phonemic units, or the word-meaning relationships or the morpho-syntactic structures alone cannot produce facility in the use of the language. The interdependence of these three basic elements is further demonstrated by the fact that a change in one very often causes a change in the other constituent elements.

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1. That is, assuming that the concepts expressed are familiar.

According to Sledd[1], "..... since differences between phonemes distinguish one morpheme (or meaningful linguistic unit) from another, a difference between phonemes often signals a *difference in meaning*. *For instance, the difference between* /b/ and /f/ distinguishes 'bat' *from* 'fat'."

The use of an organized system of vocal sounds to symbolise meanings, a process which may be described as 'auditory symbolization', is the basal level at which human language operates. Theoretically, the listener's mind works on the series of sounds produced by the speaker in order to grasp the structural units of the language prior to extracting the meanings symbolised by them. When a language has been thoroughly learned, however, the hearing of the sounds, the perception of the structural units, and the full awareness of the meanings expressed take so short a time that the process is hardly perceptible. That is why Lado[2] says,

> "These habits (i.e. language habits) are deeply set in the nervous system of the individual and in his muscular, intellectual, and emotional processes..... when a speaker says something to a listener he puts together some cultural sequences of meanings through linguistic meanings and on to the sentences, phrases, words, morphemes and phonemes. He does this mostly without thought and a listener of the same language reacts to it with the same speed and equally without awareness of the process."

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1. Sledd, James (1959). A short Introduction to English Grammar. Chicago, Scott, Foresman & Co., p. 237.

2. Lado, Robert (1961). Language Testing. London, Longmans. pp. 13-14.

In another context, R. Lado[1] also says,

> "To account for this process we must assume a memory store within the nervous system of the speaker-listener where each unit and pattern of expression and content is retained for instant use ..... The units and patterns are available to the speaker under a speaking-listening attitude or attention posture that we shall call speech set." (italics his). .....The expression is available in association with content and the content in association with the expression; one elicits the other!"

It is this strong association in the user's mind between the linguistic expression and its contents, or the meanings symbolised by it, that accounts for the relative facility in the encoding and decoding processes involved in the use of a thoroughly-learned language. Spoken language is an 'auditory coding system' at the primary level, because in it, meaning is directly symbolised by means of sounds which are to be heard and interpreted.

Visual symbols are also frequently used to express meanings. Gestures of the hand and flashes of light of varying intensity and/or duration may be used directly to symbolise meanings. These are examples of primary visual symbolisation. But the most frequently used method of visual symbolisation is to write down the symbols. When such visual symbols directly represent meaning we have primary visual symbolisation. The common mathematical signs,

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1. Lado, Robert (1964). Language Teaching. A Scientific Approach, New York, McGrawHill, p. 33

such as =, -, +, and ×, which are used directly to symbolise arithmetical operations and relationships are examples of primary visual symbolisation. Other examples are the pictographic writing of the ancient Egyptians known as hieroglyphs and the logographic writing of classical Chinese. In such primary visual coding systems the written symbols represent basically objects, ideas, relationships, operations or feelings; that is, they do not seek to represent the sound symbols used to express these meanings in spoken language.

At a higher level, written symbols are used to represent the sounds made in speech. This is secondary visual symbolisation. The writing systems of many modern languages, such as the syllabary of Japanese, and the alphabetic writing of English, French, Arabic and Yoruba are examples of secondary visual coding systems. In such writing systems written signs symbolise sounds which themselves symbolise meanings. According to Yuen Ren Chao[1] "Writing is a system of visual signs with which language is symbolised. If language symbolises ideas, writing is the symbol of symbols."

Stones expressed a similar idea when he said, "The spoken word, then, is a symbol. We now take the spoken

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1. Chao, Yuen Ren (1968): op. cit. p. 8 (See footnote 2, p.2.
2. Stones E.S. (1966): An Introduction to Educational Psychology. London, Methuen & Co. Paperback p. 202

word and give it concrete form; we write it down. The arbitrary squiggles which we commit to paper are symbols of symbols. The written word is an abstraction twice removed from reality since it reconstitutes in graphic form spoken symbols which themselves are abstracted from reality."

In alphabetic writing, written symbols represent units of sound or a succession of these, so that it is possible to decode the written symbols to arrive at the sounds symbolised by them without being able to take the second step of extracting the meanings. A double-step decoding is thus essential in trying to derive meaning from a secondary visual coding system: the first step is from the written symbols to the sounds they represent, and the second step is from the sound symbols to the meanings symbolised. This is in sharp contrast to logographic, ideographic, and pictographic writing systems which do not claim direct links with sounds, since it is impossible to extract from them the vocalised expression of the meanings they represent by analogy with other words containing similar sounds.

Learning to read and write a primary visual coding system such as we have in Chinese is a formidable task of committing to memory and developing skills, both in recognising and in reproducing all the symbols whose number is limited only by the size of the vocabulary of the language.

Such a coding system; although helping the development of literacy, that is the skills of reading and writing, may not facilitate the development of oracy, that is the skills of listening and speaking, because its visual symbols do not provide direct links with the sound symbols used in the language. A secondary visual coding system, on the other hand, has the advantage that only a limited number of symbols needed for representing the sounds or phonemes used in the language are required, so that the learning task is considerably reduced. Furthermore, since meaning is indirectly symbolised through the sounds, a secondary visual coding system helps both 'literacy' and 'oracy'. It provides clues for deducing the auditory symbols used in the language, although different writing systems do so to different degrees. The advantages of secondary over primary visual symbolisation is evidenced by the fact that most languages in the modern world use alphabetic writing and most languages for which writing systems are being developed for the first time also use alphabetic writing.

It is thus clear that the reading of a written language is the decoding of a visual symbolisation system to extract meanings. This may be either single-step decoding as in the case of primary visual symbolisation such as ideographic writing, or double-step decoding as in the case of secondary visual symbolisation such as alphabetic writing.

Arguments have arisen, however, as to whether a person who has learnt merely to connect the visual written patterns with the sound patterns they represent can be said to be able to read, or that he should be able to get at the meanings symbolised, with or without producing the sounds, before he could be said to be reading. A selection of the different views which have been expressed on this is presented in the next section.

B. WHAT IS READING?

The question to be answered here is similar to that asked by Harry Levin[1]. He related the story of a man who, having received a letter written in a language which he spoke very well but could not read, took the letter to a person who could vocalise the sounds represented in writing but did not understand the language. The latter then made the sounds which gave the former the message. Levin then asked, "which one was reading?"

There are those who believe that reading means merely reproducing the sounds represented by the written or printed symbols. For instance, the ability of many a Nigerian to 'read' the Holy Koran in the Arabic script is limited to a

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1. Levin, Harry (1966): Reading Research; What, Why, and for Whom? Elementary English. Vol. 43, p. 140.

mere vocalisation of the sounds without any understanding of what is read. Harris[1] says, "The child reads when he is able to say the words which are represented by the printed marks. The child may say the words out loud, or he may say them to himself; in either case, reading means saying the correct words." Harris was in fact thinking of a situation in which the child is reading a language which he already knows very well in speech, but since it is possible even in such a situation to vocalise the words without understanding what is read, it must be presumed that Harry regarded reading as merely saying the words. Holmes[2] had remarked, long before, that:

> " ..... if each word is said separately, the same degree of accentuation will fall to the share of each separate word, sense being thereby changed into nonsense, and a sentence into a string of words."

In spite of the possibility of this happening when a fluent speaker of the language reads, Harris believed that the child could read when he was able to 'say the words which are represented by the printed marks.'

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1. Harris, A.J. (1947). How to Increase Reading Ability. N.Y., Longmans Green & Co. p. 7
2. Holmes, E.G.A.(1882). H.M.I. for the District of Kent - Report for 1882, apud A.H. Diack - In Spite of the Alphabet. London, Chatto & Windus. 1965. p. 77

Another writer who remarked that reading consists merely in reproducing the sounds represented in writing is the Russian psychologist D.B. Elkonin.[1] He said,

> "Reading is the reconstitution of the sound forms of a word on the basis of its graphic representation. Understanding, which is often considered as the basic content of the process of reading, arises as a result of correct recreation of the sound forms of words. He who, independently of the level of understanding of words, can correctly recreate their sound forms is able to read."

In sharp contrast to the view expressed above is the belief that reading is essentially thought-getting, that is extracting the author's meaning from the passage being read. Those who hold this belief say that the mere sounding of the words, or 'oral reading', is 'word-calling'. Some of these insist on a direct association between visual symbol and meaning. In other words, reading, to them, is a 'see and comprehend' process. One of the great propoments of this idea was J.E. McDade[2], who proposed and tried a method of beginning reading which completely discarded the sounding out of the words being read. Earlier, G.L. Farnham had expressed, in the preface to his 'The Sentence Method of

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1. Elkonin, D.B. (1963). The Psychology of Mastering the Elements of Reading. Quoted by Downing, John (1966): An Experimental Study of Orthography and Reading Attainments in English. Ph.D. Thesis. London.

2. McDade, James E. (1937). A Hypothesis for Non-Oral Reading: Argument, Experiment, and Results. in Journal of Educational Research. Vol. XXX, March, 1937, pp. 489-503.

Teaching Reading' essentially the same idea, thus:

> "It is scarcely possible to exaggerate the importance of correct 'eye-reading' - of the ability to look over the written or printed page, and, with the least possible consciousness of the words used, to fully comprehend the thoughts expressed ..... ;..... The object in teaching reading should be to make every pupil an eye-reader - to give him the ability to look directly through the written expression to the meaning."[1]

Farnham also stated that the process of verbalising the reading passage either by saying it aloud or thinking of the pronunciation, and then forming the thought in the mind not directly through the written language, but indirectly after the written words had changed into oral expression, was a slow and laborious process, which became painful when long continued. He maintained that naming letters and words, no matter in what order, and remembering them is not necessarily reading. He did however accept[2] that oral

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1. Quoted by Diack, Hunter (1965). In Spite of the Alphabet. London. Chatto & Windus. pp. 80-81

2. See Fries, C.C. (1962). Linguistics and Reading. N .Y., Holt Rinehart and Winston, Inc. pp. 10-11, and 23

reading has a place, though a subordinate one to that of 'eye-reading', for he remarked that the 'two-fold function of reading' should be recognised; that is, silent reading which he regarded as 'the fundamental process', and oral reading or reading aloud which he regarded as 'entirely subordinate' to silent reading.

The idea of directly extracting meaning from print without vocalisation was also emphasized by E.B. Huey[1] who described it as 'thought-getting'. He argued that it was not necessary that the child should be able to pronounce correctly or pronounce at all, at first, the new words that appeared in his reading provided he grasped approximately the total meaning of the sentence in which the new word appeared. Admitting, however, that there would always be an 'inner saying' of the words, Huey remarked,

> "Both the inner utterance and reading aloud are natural in the early years and are to be encouraged but only when thus left free, to be dominated only by the purpose of getting and expressing meanings; and until the insidious thought of reading as word-pronouncing is well worked out of our heads, it is well to place the emphasis strongly where it really belongs, on reading as <u>thought getting</u> independently of expression."[2]

Thus, McDade, Farnham, and Huey emphasized the importance of reading for meanings. They are agreed that meaning should be extracted directly from the visual symbols

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1. Huey, E.B. (1908). <u>The Psychology and Pedagogy of Reading</u>. N.Y., Macmillam Co.
2. Quoted by Diack, Hunter (1965). op. cit. p. 51

and not indirectly through the sounds represented by these symbols. While Farnham and Huey recognised that oral reading had a place, though a subordinate one, at least in the early years, McDade would not tolerate it at all.

Most writers on the subject of reading, however, believe that reading embraces both the sounding out of words or 'oral reading' and the extraction of meaning or 'thought getting'. One of the most straight-forward expressions of this view is that made by Leonard Bloomfield[1] thus, "The task of the reader is to get the sounds from the written or printed page. When he has done this, he must still, of course, perform a second task: he must understand the meaning of these sounds." Anderson and Dearborn[2] also believed that both oral reading and silent reading - for thought-getting - are important. They remarked, "The advantage of the oral approach is, of course, that the spoken word already carries meaning for the child. The whole object of learning to read is to get the same meaning from the printed symbols. Ruling out the oral cue as McDade has done, does not jibe with the normal course of language development, which is from the oral to the silent."

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1. Bloomfield, Leonard (1942). Teaching Children to Read - Linguistics and Reading. Elementary English Review. Vol. 19. pp. 125-130, 183-186; Quoted by Diack, Hunter (1965) op. cit. p. 148
2. Anderson, I.H., & Dearborn, W.F. (1952): The Psychology of Teaching Reading. N.Y., The Ronald Press Co., p. 173

The main difference in modern ideas about reading is on whether both aspects of reading are equally important from the beginning or oral reading should be regarded as more important at first. The linguists, Leonard Bloomfield and Fries[1] believe that oral reading is more important at first and they emphasize at the initial stages the teaching of the relationship between visual symbols and sounds - albeit in meaningful words but without the use of context clues and illustrations. F.J. Schonell[2] held the same view, and he wrote,

> "Although a considerable proportion of the time devoted to early instruction in reading must of necessity be concerned with the mechanics of reading, that is, developing each pupil's powers of word recognition and his reading vocabulary, yet we must never lose sight of the fact that the ultimate aim of reading instruction is to enable pupils to read silently with adequate speed and to be able to understand and interpret what they read."

According to Jeanne S. Chall[3] who analysed twenty-two modern basal reading programmes, all writers of the basal reading programmes had as their ultimate goal in teaching reading the ability to get meaning from the printed

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1. Fries, C.C. (1962). Linguistics and Reading. Holt, Rinehart and Winston. Inc. New York.
2. Schonell, F.J. (1961). The Psychology and Teaching of Reading London, Oliver and Boyd. p. 155
3. Chall, Jeanne S. (1967). Learning to Read: The Great Debate. N.Y., McGraw-Hill Book Co., pp.336-355

page. Although the emphasis tended to vary at the beginning, the large majority - about 77% - concentrated in the early stages on getting children to learn the sound-symbol correspondences: they therefore employed as motivational appeal the child's desire to master the mechanics of reading rather than his interest in content. Chall pointed out, however, that all the beginning reading programmes she analysed were concerned with both components of reading, i.e. 'decoding'[1] and meaning; it is only the emphasis at the early stages that varied. Any reading which is not aimed at the apprehension of meaning is apt to be labelled as 'barking at print', or, in the words of Horace Mann[2], "a barren action of the organs of speech upon the atmosphere".

It may be said, therefore, that, in modern times, the most widely accepted view is that the ultimate goal of reading is the apprehension of the author's meaning, although the majority of people also tend to give comparatively greater emphasis to the mastery of symbol-sound connections or 'reading aloud' and the development of correct intonation patterns at the early stages of learning to read. Ability to reproduce the sounds and intonation becomes progressively less important till it is finally neglected, so that it is considered only in so far as it may occasionally aid the apprehension of meaning.

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1. Chall used 'decoding' to describe the one step of breaking the written code to arrive at the speech sounds only.
2. Horace Mann, Secretary to the Board of Education, Massachusetts: Report for 1837 - Quoted by Hunter Diack (1965), op. cit. p. 48

C. READING AS BEHAVIOUR

Since reading, as already noted, is the process of decoding a system of visual symbols to arrive at the meanings symbolised, it may be said that the teaching of reading is aimed at the origination, or modification, of the learner's behaviour in interpreting a particular visual coding system. Any observer of the reading behaviour (R) resulting from the teaching will be interested in, among others the rate of progress in learning to decode, the ease and speed of decoding, the quality and accuracy of the sound patterns and meanings decoded, and the learner's attitude or emotive reaction to the entire 'reading' activity.

Obviously, the complex reading behaviour (R), resulting from the teaching, is a function of, the following factors:

(i) factors present in the teacher ..... t

(ii) " " " " learner l

(iii) " " " " the visual coding system ... c

(iv) " " " the general teaching-learning situation .....s

The resultant reading behaviour (R) may therefore be defined mathematically thus:

$$R = f(tlcs).$$

The factors - t - present in the teacher include such things as his general physical appearance and state of

health, the extent and quality of his knowledge of the language, the suitability of his methods and techniques, the quality of his voice and language, as well as his attitudes, manner, and emotional reactions to his pupils; that is whether he is enthusiastic, friendly, patient and sympathetic or otherwise.

The factors - l - present in the learner include his general readiness and ability to learn as determined by suitable mental and physical maturity and state of health, appropriate social and experiential background, as well as his attitudes, motivational and emotional states.

The factors - c - present in the coding system include such things as whether it is complex or simple, bold or light, regular or irregular, consistent or inconsistent, and whether it is presented in an attractive and stimulating context or not.

The factors - s - present in the general teaching-learning situation include the conditions of the locality, such as whether the classroom is quiet, peaceful and stimulating or noisy, disorderly and drab; whether the physical and psychological environment of the school provides encouragement and other conditions conducive to learning generally, and whether the social context is such as would encourage and promote the learning of that particular form of behaviour or not.

Reading is thus a complex behaviour (R) which can be measured and described in terms of its quantity, quality and rate of development, as well as the types of attitudinal concomitants. This complex pattern of behaviour has also been defined as a function of several factors, one or more of which may be experimentally varied, while the others are controlled, for the purpose of observing the differential effects on behaviour of the experimentally varied factors. Often, one is interested in comparing the effectiveness of different methods of teaching, or the effects of different social settings on the learning of a particular form of behaviour, or the effects of the same method on groups of children who differ in certain specific ways. Often too, the effects of different coding systems on learning to read are studied - as was done in the investigation described in this report. While other factors were held constant, two different coding systems - c_1 and c_2 - were used in teaching reading to matched groups of pupils, and the resultant contrastive reading and other associated forms of behaviour - R_1 and R_2 - were observed and compared.

The question to be answered in this comparative study of behaviour was: What is the relationship between R_1, i.e. the entire resulting behaviour of the learners when one coding system - c_1 - was used, and R_2, i.e. the

entire resulting behaviour of a similar group of learners when a second coding system - c_2- was used? The two contrastive forms of behaviour are defined mathematically thus:

$$R_1 = f(tlc_1s)$$

$$R_2 = f(tlc_2s)$$

The other factors t, l, and s were supposed to be constant. The purpoted constancy of these factors, however, involves big assumptions which are discussed later together with the steps taken to ensure similarity or comparability of these factors across groups. Although coding systems have sometimes been varied in this way for this type of comparison, the methodological component of the 't' factors i.e. those present in the teacher - has most frequently been made the subject of experimental investigation. The main methods used in the teaching of reading are discussed in the next section in relation to the psychology of reading as a background to the investigation here reported.

D. THE PSYCHOLOGY AND METHODS OF TEACHING READING

Reading, as has been remarked in section (c) above, is a form of behaviour; and for this reason, psychologists have tried not only to explain how this behaviour is brought about but also to discover how it may most easily and effectively be established in the individual. The principles

and theories which have been developed in relation to the general learning process have been applied specifically to the processes of reading and learning to read. The areas to which attention have been directed are as follows:

(i) Study of the influence which some relevant characteristics of the learner, especially those subsumed in the idea of Readiness, may exert on his behaviour in learning to read;

(ii) Study of the perceptual mechanisms involved in reading, with a view to determining the most appropriate unit of presentation of the learning task;

(iii) Consideration of the thought processes which are supposed to underlie reading activity in relation to the characteristic structuring of the reading material.

The thinking of psychologists in each of these areas is discussed briefly below.

1. Influence of the learner's personal characteristics on learning to read

It is important that the appropriate physiological functions required in reading should be adequately developed. Firstly, since reading involves visual discrimination, the learner's visual capacity must be adequately developed to enable him make necessary discriminations between different

shapes and sizes of written and printed symbols. A learner's lack of progress in learning to read may be due either to inadequate development of the ability for visual discrimination by reason of age, or to defective vision. Among the visual defects which may adversely affect progress in learning to read are myopia, astigmatism, and strabismus. Either inadequate maturation or defective functioning of the visual-perceptive organs will cause difficuly for the child when he is required to make discrimanatory responses to written symbols and this in turn will give rise to anxiety, lack of confidence and antipathy towards the reading activity.

Secondly, the learner of reading must be able to make the auditory discriminations involved in reading. In order to make satisfactory progress therefore the learner must be sufficiently mature and he must not suffer from hearing loss so much as to interfere with the making of the auditory discriminations required in reading. Closely related to this is the ability to articulate the various sounds which are used in the language to be read. Adequate maturation as well as normal functioning of the organs of speech is essential if the learner is to make satisfactory progress. Speech defects such as lisping, stammering or stuttering often result in reading failure either because they constitute real blocks in producing appropriate speech sounds or

because they give rise to anxiety, or both.

It is clear from the foregoing that the attainment of a suitable maturational level as well as normal or non-defective functioning of the organs of speech, sight, and hearing is important if smooth progress is to be made in learning to read.

Quite apart from normal functioning of the appropriate physiological processes, the Learner's experiential background must be such as would have given him suitable practice of some of the linguistic and perceptual skills called for in learning to read. The attainment of an adequate maturational level alone does not ensure the acquisition of such skills. Specifically, it is believed that learning to read is considerably facilitated if the learner has had practice in handling books, trying to discriminate between different shapes and sounds, and in using words for denoting the common ideas, objects and situations which occur in his environment. Of great advantage in learning to read are the abilities to speak and understand the language and to make appropriate auditory and visual discriminations. Pre-reading activities, especially for young children, are therefore usually directed towards the development of such abilities.

The attitudinal orientation of the learner is also important, because the development of an attitude of mind

that is favourable, not only to reading as an activity but also to the reading of the particular language in view, greatly facilitates progress in learning to read. The learner's attitudes to the learning situation, such as the school and classroom, to the materials used such, as books, illustrations, and other aids, and to the teacher himself, have great bearing on his reading behaviour. The learning of reading, like any other learning activity, is thus directly influenced by the learner's temporary and permanent emotional states such as those of fear, anxiety, anger, disappointment, pleasure, expectation, or elation. This underlines the importance of Motivation in learning to read; that is, the quality and rate of progress in learning is affected by the extent to which the learning activity is identifiable with the learner's immediate interests and long-term goals.

Finally, the learner must possess suitable mental capacity which will enable him not only to learn the auditory and visual discriminations, but also to establish the habit of making the high-speed symbol-sound-meaning connections involved in skillful reading. Since differences in the level of mental capacity are known to be dependent on hereditary, maturational, and experiential factors, all these factors must have functioned in such a way as to produce in the learner the required minimum of intellectual

ability for successful reading. Age, parental and environmental backgrounds are therefore considered very important in this connection.

The personal characteristics of the learner which are important in learning to read therefore are the functioning of his organs of speech, sight and hearing, the quality of his mental capacity, his experiential and social background, and his motivational and attitudinal orientations.

Educationists and psychologists have concerned themselves with, and expressed opinions on, the optimum physical, mental and emotional states which must be attained by the child before he can be said to be ready to read. This complex state has been described as the state of Readiness for reading, and it embraces the various characteristics of the learner as already described above. Taking into consideration the rate of maturation of the child's audio-visual-perceptual functions and mental capacity, and his experience, some psychologists have suggested the ages at which they believe the average child should be 'ready' to read.

At the one extreme end is the view expressed by Dewey[1] that the age of nine or ten years was about the best for children to begin to learn to read. Writing ten years

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1. Dewey, John (1898). New York Teachers' Monographs. November, 1898.

later, Edmund Huey[1] also stated that little was lost and often much gained if the child was not taught to read until age eight years or later. Later still, Morphett and Washburne[2] expressed the opinion that a child was not ready to read until he had attained a mental age of six years six months, and in 1937, Dolch and Bloomster[3] concluded, following an experimental investigation, that phonic readiness was not attained until a mental age of seven years was reached. There was thus a shift from chronological age to mental age. It was then thought that this readiness for reading came about as a result of growth only and depended on mental ability. Later investigations indicated, however, that mental age was not the only important factor in reading readiness. Olson[4] asserted that reading achievement was a function of general maturity, and suggested that 'organismic age' was more closely related to reading achievement than mental age. Anderson and Dearborn[5] also stated that reading

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1. Huey, Edmund B. (1908). The Psychology and Pedagogy of Reading. New York, Macmillan.
2. Morphett, M.B. and Washburne, C. (1931). When Should Children Begin to Read? - Elementary School Journal. xxxi, March 1931, pp. 496-503
3. Dolch, E.W. and Bloomster, M. (1937). Phonic Readiness. Elementary School Journal, XXXVII, Nov.1937, pp.201-205
4. Olson, W.C. (1940). Reading as a Function of the Total Growth of the child. Supplementary Education Monographs. No. 51, Chicago. University of Chicago Press. pp.233-237
5. Anderson, I.H. and Dearborn,W.F. (1952). The Psychology of Teaching Reading. N.Y., The Ronald Press Co. p. 48

is an aspect of total growth, adding that the reason why some intelligent youngsters got off to a slow start was that they were immature in other ways. While accepting this view, Schonell[1] further observed that vocabulary development, environmental background, motivation, physical maturity, particularly of vision and hearing, mental maturity and emotional stability are all involved in producing reading achievement. He thus emphasized the influence of the child's verbal background, home experiences and emotional attitudes in conjunction with that of 'organismic age'. His conclusion was that for normal pupils, the more formal approach to reading should not begin before a mental age of about six years is reached, although he remarked that there would be many exceptions.

The idea of reading readiness was however violently criticised by Flesch[2] who pointed out that children did learn to read at and before the age of six. Gates[3] had indeed found that some children with mental ages of five could cope successfully with first-grade reading.

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1. Schonell, F.J. (1961). The Psychology and Teaching of Reading. Edinburgh & London. Oliver and Boyd.
2. Flesch, Rudolf (1955). Why Johnny Can't Read. Harper, New York.
3. Gates, A.I. (1937). The Necessary Mental Age for Beginning Reading. Elementary School Journal XXXVII. pp. 497-508.

Durkin[1] confirmed that younger children do learn to read and added that it was probably better to start earlier than later. One of the most extreme opinions expressed by people in this camp was that by Moore[2] who stated that the best time to start reading was at age two or three. It must be noted however, that Moore used one teacher or machine for one child in his Responsive Environment Program. Like Moore Doman[3] insists that young children of two years can learn to read, and that the younger a child is the easier it is for him to learn to read. But it may be seen that what the children in Doman's experiment achieve is not really reading, for it is a mere association of a 'name' with a large printed pattern, exactly in the same way as children might associate the name 'dog' with a creature having a certain type of physical configuration. According to Diack[4], "children will appear to be able to read long before they are actually able to do so in the full sense of the word".

It thus seems that modern views about the age of readiness for beginning reading depends on the methods used and what is regarded as important in early reading, that is,

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1. Durkin, D. (1963). Early Readers - Reflections after Six Years Research. The Reading Teacher. Vol. 18. pp. 3-7
2. Moore, Omar K. (1964). Autotelic Responsive Environments and Exceptional Children. Responsive Environments Foundation, Conn.
3. Doman, G. (1965). Teach Your Baby to Read. London. Jonathan Cape.
4. Diack (1965). op. cit. p. 184

either mere word recognition or comprehension and interpretation. In this connection, Chall[1] stated thus:

> Each proponent's view on readiness was closely related to his definition of reading and to his 'method'. Those with a complex definition of beginning reading tended to have a larger conception of readiness and to advocate a later start. Those who defined beginning reading in terms of learning to decode tended to favour an earlier start and had a more specific conception of readiness ....
>
> The Language Experience proponents, as well as the basal - reader proponents, on the other hand, placed great emphasis on mature reading right from the start. In their view, the child needs to be more mature intellectually, perceptually, emotionally and socially to benefit from these methods. Furthermore, since the LE approach is less systematic than the basal reader approach, it requires a greater degree of readiness for success."

Nigerian children enter primary school between the ages of five and six years. Since very few of them go to nursery schools before attaining primary school age and not many parents teach their children to read at home, only a negligible proportion learn to read before they enter the regular primary classes at age five or six. In view of the exigencies of the social and linguistic environment, the average size of classes, and the quality of both the teachers and their school equipment, the writer considers it proper that most Nigerian children do attain at least the age of five before they are given formal instruction in reading.

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1. Chall, Jeanne S. (1967). Learning to Read: The Great Debate. N.Y., McGrawHill. pp. 59-60.

Holmes[1] has rightly pointed out the importance of the teacher and the amount of time he can devote to each child thus: "other things being equal, the earliest age at which a child can be taught to read is a function of the amount of time or help the teacher can give the pupil." But the pupil himself must possess the requisite abilities to benefit from the teacher's efforts.

2. The Perceptual Mechanisms involved in Reading

Some psychologists have also concerned themselves with trying to discover the manner in which print is perceived visually when we read, in order to determine the optimum form of presentation of reading material to the beginner. In particular, the important cues in word and letter perception and the patterns of eye movements in reading have been investigated.

With the aid of a tachistoscope, that is a machine for the brief exposure of words, Cattell[2] found that while a reader could perceive in 1/100 of a second of exposure time a short sentence of four words (containing approximately twenty-four letters), he could perceive only three or four

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1. Holmes, J.A. (1962). When Should and Could Johnny Learn to Read? (I.R.A.) Scholastic Magazines, Volume 7. pp. 237-241

2. Cattell, J.M. (1885). See Anderson & Dearborn, op. cit. pp. 136, 184-185

unrelated letters in the same exposure time. This showed, according to Cattell, that the unit of perception in reading is not the individual letters but whole words, for otherwise the reader could not have perceived a sentence of twenty-four letters in the time required for perceiving only three or four unrelated letters. Cattell's conclusion was that the cue for recognition was the 'total word picture'. Erdmann and Dodge[1] who also used the brief exposure technique confirmed that familiar words containing about twelve letters could be recognized in the same exposure time required for recognising only four or five unrelated letters. They too concluded that the cue for recognition was the 'general word shape'.

This 'word-picture' or 'word-shape' as a factor in recognition was identified with the outline or configuration of the word. Ascenders and descenders, that is, letters having upward and downward projections, were said to give words their characteristic shape. Anderson and Dearborn[2] also showed that mutilated words, in which the individual letters are unrecognisable, could be read because of their total patterns or shapes, and they therefore concluded that the total pattern or shape of the word was very important.

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1. Erdmann, B, and Dodge R. (1898). Ibidem (p. 213). (i.e. footnote p. 30).

2. op. cit. pp. 189 and 191.

They further demonstrated this by showing that when the usual pattern of words is disturbed by the use of a mixture of capitals and small letters such words become more difficult to read; for the same reason words printed entirely in capital letters are less fluently read than those printed in the usual way. Woodworth[1] however, criticised the experiments based on timed exposure of words on a tachistoscope, and said that in normal reading we see the words at close range so that the letters become more important than the bare outline of the words, and the characteristic pattern of curved and vertical letters in the word aids recognition. Anderson and Dearborn[2] agreed that "a clear view of at least some of the letters of the word is necessary before it can be recognised with confidence". It may be said therefore that the mere outline of the word is not enough for its recognition; its total structure, including the 'pattern' of curved and vertical letters, constitutes the cue for recognition. There were others, however, like Korte, Zeitler and Goldscheider who believed that the recognition of a word follows from an identification of its constituent elements, and therefore attached little importance to the outline.

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1. Woodworth, R.S. (1938). Experimental Psychology, Henry Holt. & Co. New York.
2. op. cit. p. 187.

The position of letters in a word also confer relative importance on them in the recognition of the word. Letters at the beginning and end of words are said to attract attention because they are free on one side from the masking effects of adjoining letters. Capitals also tend to stand out because they are larger, while ascenders and descenders tend to be conspicuous in the outline. Finally, it has been shown that the upper half of words constitute a more important cue than the lower half since words are more easily read when the lower half is masked than when the upper half is masked.

The relative emphasis on the 'total pattern' or 'shape' of a word as a cue in its recognition led to the demand that words should be taught as wholes and not as the synthesis of letters. Diack and others have pointed out, however, that childish reading is different from adult reading, because children tend to pay more attention to letters, especially those at the beginning and the end, than to the general shape of words. Referring to work done by J.C. Daniels and himself, Diack[1] said, "our basic idea was that in the perception of words a process of visual analysis is necessary. The logical deduction was that the visual analysis should be into letters and not such features as the dots on i's and the tails on y's." He maintains that a reader sees particular

1. Diack, Hunter (1965). op. cit. p. 112.

details before seeing the whole word, and that in skillful reading, we see only a part but say the whole of a word, because the context leads us to expect that word, even though it may not be present in all its details. This is an instance of 'cue-reduction' in reading, that is, less of the pattern of sensory stimulation is required for the full recognition of words.

In any case, it seems that the main difference between the adult reader and the learning child is that the former uses a large number of cues to identify the word while the latter uses relatively few. The adult uses the total pattern and context cues when reading familiar words, but reverts to more careful analysis into letters when confronted by new ones. On the other hand, the cues used by the child at the early stages depend on what the teacher emphasizes. If look and say method is used the child is likely to concentrate on the 'picture' of the word at first until he has to discriminate between words which are comparatively more alike in shape, then he gradually adds on some other minor characteristics of the words to distinguish them. But if a letter-based synthetic approach is used, the learner may tend to concentrate on one or two dominant letters if he is required to make a quick recognition of the word. These cues are gradually built up until a unified picture emerges.

Anderson and Dearborn's[1] conclusion seems to be a good synthesis of the various ideas on the perceptual cues in word recognition. They said, "Familiar words are perceived primarily in terms of their total structure. The perception of unfamiliar words requires greater attention to the detailed composition of the word. Children who are just beginning to read typically ignore the pattern, principally because all words are relatively unfamiliar to the inexperienced reader. The rank beginner is prone to identify words with certain compelling 'dominant' letters. The pattern materializes only through practice. What seems to happen is that, with practice, the response of recognition gradually enlists more and more of the detail until finally the word is organized as a unit and the perception of it is complete". The essential factors in the recognition of words may therefore be listed as: parts of the detail, the general structure or pattern, and contextual clues. These ideas have important bearing on the methods used in teaching reading as will be seen later.

Another aspect of perception in reading which has been investigated is the type of eye-movements made in reading. From crude observations of readers' eye-movements in early times by means of the 'peep-hole' method and mirror reflections, more sophisticated methods have been developed

1. Anderson & Dearborn (1952). op. cit. p. 202.

for making photographic and electrically controlled records of eye-movements. Such records are said to serve as reliable and valid indicators of reading achievement.

It has been found that in reading, the eyes do not move in a continuous sweep across the page, but they make a series of stop-and-go movements. The eyes are focussed at a point near the beginning of a line and remain there for some time (fixation); they then move on to another point ahead (inter-fixation movement); on reaching the end of the line after several such fixations and inter-fixation movements, the eyes sweep back to another point near the beginning of a new line (return sweep). Sometimes the eyes go back to read again what has just been read; this is known as regression. Often after making the return sweep, the eyes do not locate accurately the beginning of the new line, so that one or more additional movements, very much like the regression movement, are made to locate it; this is known as re-fixation. Specially designed sophisticated machines, such as the ophtalmograph and eye-movement cameras, are used to record all these aspects of eye-movement on rolls of photographic paper. A person's 'reading rate' can be calculated by dividing his total reading time by the number of words in the passage; and this is usually expressed in words per minute. The average number of fixations per line, average number of regressions per line, and average duration in time per fixation, are also calculated. These measures

are said to be directly related to the reader's level of reading achievement.

Good readers are said to make fewer fixations and regressions per line, and to have shorter fixation time than poor readers. Earlier investigations, like those of Gray[1], Schmidt[2] and Buswell[3], had indicated that eye-movement habits become fixed between the second and the sixth year in school, that is, as soon as the techniques of reading have been mastered. But later and more careful investigation by Ballantine[4] has shown that reading growth in terms of decreasing average numbers of fixations and regressions per em, continues until about the eighth year in school, while reading rate, in ems per minute, continues to improve until about the tenth year.

It is known that when the eyes are in motion, vision is temporarily blurred so that no reading takes place during

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1. Gray, Clarence T. (1917). Types of Reading Ability. Supplementary Education Monographs, No. 5. University of Chicago Press, 196 pp.
2. Schmidt, W.A. (1917). An Experimental Study in the Psychology of Reading. Supplementary Educational Monographs No. 2 University of Chicago Press 126 pp.
3. Buswell, G.T. (1922). Fundamental Reading Habits: A Study of Their Development. Supplementary Educational Monographs. No. 21. University of Chicago Press. 150pp.
4. Ballantine, F.A. (1951). Age Changes in Measures of Eye-Movements in Silent Reading, in Studies in the Psychology of Reading (pp. 65-111). Monographs in Education, No. 4. AnnArbor: University of Michigan Press.

the inter-fixation movements. All the reading is therefore done during the fixation periods. The duration in time of the inter-fixation movement is said to be fixed for each individual and since it is reflexively controlled it cannot be changed at will. Although the frequencies of fixation and regression have been shown to change with age and reading ability, there are wide differences between individuals, so that the eye-movement pattern of an individual at any one stage is peculairly his own, and it seems to depend on age, genetic factors as well as the extent of training in reading. Longitudinal studies are however required to establish the relative influence of these factors.

Attempts have been made to increase the perceptual span of readers by means of eye-pacing devices such as the brief exposure of progressively longer words and phrases on the tachistoscope. The aim is to reduce the number of fixations per line. But since eye-movement patterns are also closely related to age and genetic background, and since the size of the perceptual span tends to be related to the degree of meaningfulness of the reading material to the reader, Anderson and Dearborn[1] think that the time spent in trying to increase the perceptual span in reading by means of short-exposure methods might better be spent on promoting growth in comprehension. It is true that the visual perceptual span

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1. op. cit. p. 136

in reading is limited by what the mind can comprehend but it is possible that some people habitually encompass visually less than what they are capable of comprehending in the given time; in such cases, attempts to improve the perceptual span might be beneficial.

It has also been observed that in oral reading, the eyes are always ahead of the voice, so that oral reading tends to reduce reading rate especially when the passage is relatively easy. The distance between the eyes and the voice at any instant is known as the 'eye-voice span'. This span tends to be shorter at the end of sentences than at the beginning; it is wider for good readers than for poor ones; and it is wider for easy passages than for relatively more difficult ones. Both oral reading and poor comprehension thus have adverse effects on reading rate.

In spite of Anderson and Dearborn's conclusion on eye-pacing techniques already mentioned, it seems that most readers do not always read at their optimum speed, partly owing to the methods originally used in teaching them to read. Work done at the reading centre of the University of Ibadan[1] has shown that University students can and do

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1. See McKillop, A. And Yoloye, E.A. (1962). The Reading of University Students. Teacher Education. Volume 3, No. 2. November.
and Unoh, S.O. (1968). The Relationship Between Reading Speed and Comprehension. Unpublished Seminar Paper.

increase their reading speeds as a result of training which leads them to eliminate undesirable reading habits such as vocalization (since oral reading tends to be slower than silent reading, as evidenced by the eye-voice span), lack of concentration, and word-by-word reading. It would appear therefore that eye-movement patterns and reading rate are dependent upon acquired reading habits, level of the reader's comprehension of the reading material, his age, and some genetically determined personal characteristics.

3. The thought processes underlying reading activity

It is thought that learning to read is a process of forming associations between written symbols and sounds which already have meaning for the child, since he has previously learnt the language in speech. Learning to read has therefore been described as a process of conditioning in which the association between sound and written word develops as a result of their simultaneous occurrence in time. Since the sound of the word is already associated with the meaning, the sight of it also eventually acquires the potential to recall the meaning by conditioning. It was emphasized that what the child reads must be meaningful to him. So that learning to read at the beginning is regarded as a look, say, and comprehend process; but later, when the mechanics of reading is mastered, reading becomes silent and it is then a look and comprehend process, in

which the sound is omitted. This idea is discussed later. Meanwhile one may try to answer the question how and in what conditions this association is formed.

First, it is believed that for a strong association to be formed between the written word and speech sounds, their simultaneous occurrence must be repeated several times. This is related to Thorndike's Law of Exercise. The idea was that any child would learn to read if given sufficient practice in associating words as printed with words as spoken. It was found, however, that this was not the case; there were and are still, many children who were either non readers or remained very poor in reading after long and determined efforts to teach them to read. Consequently, the child's motivation came to be emphasized. He must have the intention to learn i.e. a learning attitude, for merely repeating the words while looking at them in print does not necessarily ensure that they would be learnt if there is no intention to do so. The idea therefore developed that what the child is learning to read must not only be meaningful to him and he must not only have good practice on it, but must also be interested and have the intention to learn.

Another idea later developed that since the aim of learning to read is to associate print with meaning, there should be no need for an intermediate association between sound and print at the beginning stages of learning to read.

The argument was that making the sounds in reading, i.e. oral reading, results in vocalization or sub-vocalization later on when one should be reading silently, and that such vocalization interferes with the rate of reading as well as comprehension. Such was the idea behind McDade's[1] non-oral method. Reading was conceived as a see and comprehend process.

It is felt, however, that reading should aid both speech and the extraction of meaning from print. Experiments have in fact, not confirmed that the use of non-oral method at the initial stages completely eliminated vocalization or sub-vocalization later on, nor has it been shown that mistakes of either recognition or comprehension are increased by the use of vocalization. The eye-movements in oral and silent reading are found to be highly correlated, word recognition errors made in oral and silent reading are highly correlated, and so are errors of comprehension in oral and silent reading. The idea has developed therefore that oral and silent reading are the overt and implicit expressions of the same fundamental process[2]. It seems that implicit speech accompanies silent reading, so that the sound is

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1. McDade, J.E. (1937). A Hypothesis for Non-Oral Reading: Argument, Experiment, and Results. Journal of Educational Research. Vol.30. pp.489-503 (March).

2. See Anderson and Dearborn. op. cit. p. 160.

'heard' from print in much the same way as it is heard in speech. Reading is a type of verbal thinking, and since it has been shown by Jacobson[1] that implicit speech accompanies verbal thinking, it would probably of necessity accompany silent reading. Oral reading should therefore be regarded as useful at the beginning although it should not be used exclusively, as the children would tend in such a case to verbalise without grasping the meanings of what they read.

Another angle to the problem of learning to read is that the learner is active. That is, he should not be regarded as a pavlovian dog making mechanical responses to printed symbols as a result of conditioning. The learner thinks and organizes his experiences. It is believed therefore that his learning task must be presented in such a way that he can reason about it and generalize or 'transfer' his skills to other situations. The implication of this is that just teaching children to read by forming associations between different words and their meanings, either through the speech forms or directly, is unsatisfactory. It is argued that the basis of symbolisation in writing, that is, the letters of the alphabet, must be learnt, either by selecting recognition words which will facilitate the deduction of this principle through their embodiment of

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1. Jacobson, Edmund. (Oct. 1932). "The Electrophysiology of Mental Activities. American Journal of Psychology. Volume 44, 677-94.

certain similar letters and sounds, or by teaching the sounds and the letters respresenting them, so that the learner can both build up his own words and analyse new ones. This argument forms the basis for the phonic-word and phonic methods. In the ensuing section, the methods used in teaching reading are discussed in relation to the foregoing ideas on the psychology of reading.

4. The Methods of Teaching Reading

The different approaches used at the initial stages of teaching reading can be grouped into two main categories, viz. the synthetic and the analytic approaches. Included in the first category are those approaches which begin by teaching the small basic units of writing which are then gradually built up into larger units, while in the second category are those which start with larger units that are later broken or analysed into smaller units. The Alphabetic and Phonic approaches are Synthetic while the Word, Phrase, Sentence and Paragraph approaches are analytic. When the initial stages have been passed, however, all approaches tend to include elements of both synthesis and analysis. These approaches are examined briefly.

The Alphabetic Method. This is the oldest of all the methods of teaching reading and it is very rarely if ever used in modern times. The learner started by learning to

recognize and name serially all the letters of the alphabet, both the capitals and the small letters. After this, he learnt the syllables which consists of combinations of each of the vowels with each of the consonants. Later he learnt simple words which were then built into sentences. It was a laborious task requiring a lot of effort and repetitions on the parts of both the teacher and the taught. This type of teaching procedure obviously has little motivational appeal since it contains nothing to arouse the interests of the learner. The first words and sentences read had little or no meaning. It encouraged oral reading without attention to the sense of what is read. Great emphasis was placed on spelling out the words.

In order to provide some motivation, some people started to provide ginger bread hornbooks in the eighteenth century. The learner ate that part of the book which he had mastered. Basedow in Germany, also in the eighteenth century, was said to have started the idea of baking bread in the shapes of letters which the learner would eat when he had learnt each letter. Further suggestions were made in the nineteenth century for easing the learner's task. Among these were those of Professor Pillans[1] a professor at the University of Edinburgh who described and endorsed the method used by one

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1. See Mather, M.M. (1966). Teaching to Read Historically Considered. University of Chicago Press. p. 55 & pp. 72-73.

Mr. Wood, suprintendent of the Edinburgh Sessional School. In this method, a few letters of the alphabet were taught at a time, then combined into words, thus omitting the syllabic combinations, and then a few more letters were taught. The intention here was that the child should begin to read meaningful words as soon as possible. A similar suggestion was that by Dr. Andrew Thompson[1] who also said that letters should be learnt in groups, then combined into words, and the words discussed and explained so that they become meaningful.

The Alphabetic Method was unsatisfactory and it came under severe criticism in the nineteenth century, as will be seen shortly. It however persisted until very recently in Nigeria, and there are still many parents who feel that the first reading task for their children is to be able to recite and recognise all the letters of the alphabet.

The Phonic Method

In this method the concentration is on teaching the sounds and how they are represented in print, that is, the emphasis is on the sounds and not the names of the letters. The main point of difference between the alphabetic and the Phonic Methods is that the former teaches the Names of the letters and then the sounds they represent in words, while

1. See Diack, Hunter (1965). op. cit. p. 16.

the latter teaches the sounds and their representation in writing. It is because of the close relationship that Diack[1] remarked, "of alphabetic and phonic methods it can indeed be said that 'thin partitions do their bounds divide.'"

There are in fact two types of procedures in which the sounds of words are taught, and both are described by some writers as the phonetic or the phonic method. But there is in fact a slight difference between the two. The phonetic method is concerned with the representation of different sounds in print, so that characters not included in the regular alphabet or other devices, such as diacritical markings and regularised spelling may be used in order to distinguish different sounds. The phonic method on other hand emphasises the sounding out of words without changing the normal way in which they are printed.

It is said that one teacher - Kay - who had used a phonic method in the last few years of the eighteenth century published a book in Newcastle in 1801 called 'The New Preceptor' in which the emphasis was on teaching the sounds of letters. Kay noted that the double letters ch, ph, sh, th and wh should be named as single characters and given their usual sounds. The Phonic Method received official approval in 1840 when work being done by Dr. Kay-Shuttleworth at Battersea training College was commended.

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1. Ibidem. p. 21

He had been experimenting in some schools with the 'phonic method' and teaching teachers who took the method to the schools. No book was used at the beginning; the child needed only a slate and slate-pencil for writing the letters which he named by their sounds.

A book was however, published in 1857 - Reading Without Tears - which graded words according to their spelling regularity and excluded irregularly spelt words, so that phonic teaching could be easier. At the same time, some people were proposing new ways of teaching sounds. Isaac Pitman produced a phonetic print known as 'phonotypy' in 1842, and A.J. Ellis who had cooperated with Pitman published 'The Alphabet of Nature' in 1845. A 'Pronouncing Book' which used colours to indicate different vowel sounds was published in 1862. Such new phonetic procedures were not much used in England but they were used in America. Phonetic and Phonic approcahes to teaching reading dominated the scene till the end of the nineteenth century.

Before the end of the century, however, it had been receiving severe criticism. It is said that the method produced 'word-callers', so that reading 'becomes too largely an exercise in mere word pronunciation'. As early as 1832, Dr. J.M. Keagy, in an address to the American Lyceum on Early Education, said that the child should not be taught letters or spelling at first, but whole words. He went on to say

that if this method was adopted, "we should soon get rid of the stupid and uninteresting mode now prevalent."[1] Also in an address delivered before the American Institute of Instruction in 1837, Thomas H. Palmer is reported to have criticised the synthetic methods used in teaching reading at the time, and said, "An inverterate habit of mechanical reading is formed ..... which is nothing but a mere utterance of sounds".[2] Another person, Horace Mann, in his report on Education in Massachusetts in 1838 criticised the alphabetic Method, claiming that it produced reading which was "too often a barren action of the organs of speech upon the atmosphere", as already indicated on page sixteen. He supported a word method. As a result of these criticisms some methods based on words, rather than letters or sounds, started to be used; but the phonic method remained dominant until the early years of the twentieth century.

From the 1950's, however, there has also been a call for the greater use of phonics or a phonic-word approach instead of the word and sentence methods which dominated the first half of the twentieth century. These are discussed in the next section.

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1. Quoted by M.M. Mathews (1966). op. cit. pp. 65-66. from American Annals of Education, II (1832), 462-82

2. Also quoted by Mathews. p.68 from American Institute of Instruction, Lectures, VIII (1838), 216 ff.

The Analytic Approaches to the Teaching of Reading

The Whole-Word, Phrase, Sentence, and other associated methods are better discussed together because they are based on the same rational. The experiments conducted late in the nineteenth century on word perception by Cattell, and Erdmann and Doge in Germany, as mentioned on page 31, led people to argue that if the unit of perception is whole words, then teaching must start with whole words and not single letters or sounds. The Whole Word method therefore received its major support from this argument. Another common type of argument in favour of word methods runs thus, "children begin to talk with words and why should they not begin to read with words? It is nature's method."[1] The words of Horace Mann and the efforts of Francis W. Parker in the Quincy School had done a lot to spread the practice of the Word Method. So that by the time Cattell and others published the results of their investigation which indicated that the cue for the recognition of words was the "total word picture" or the "general word shape" the whole word method had been spreading gradually. It received further impetus, when Edmund B. Huey, writing in 1908, supported the word method to which John Dewey had given his blessing in his 'Laboratory

1. Credited to Cyrus Pierce in a lecture delivered before the American Institute of Instruction in April 1843 - in American Institute of Instruction Lectures, XIV(1844) 160, and quoted by Mathews, M.M., op. cit. p. 71.

School' at Chicago University. It was also later supported by the idea of the Gestalt Psychologists that a whole - in this respect a word - is more than the sum of its constituent elements.

The emphasis was laid on starting children with something that is meaningful, that is, a whole word, which the children look at as a whole and pronounce without first analysing it into its constituent letters or sounds. It is also therefore known as the 'look-and-say' method. The description of the Word Method given in 1857 by Andrew J. Hickoff, Suprintendent of the Cincinnati Public Schools, and quoted by Mathews, gives an idea of how it was used. He said,

> "The Word Method requires that the pupils be taught to recognize and call words at sight, without spelling them, or even learning the names or sounds of the letters ..... Those who have adopted it, differ materially with each other, as to the extent to which it should be carried before the names, or sounds of the letters should be introduced. Some would have the letters of every word taught as soon as the word is learned. Others would have this deferred till one or two of the first reading books are completed. Almost all well informed Teachers have adopted the word method, followed more or less immediately by the alphabetic or phonic."

Although this method was very widely used in the early half of the present century, evidence of its weakness was gradually built up. Among the weaknesses are: (i) that it leads to inaccuarate word perception, because children tend

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1. op. cit. p. 99

to pick on some details such as a letter or two, e.g. cannot was read as 'come' by a pupil because of the 'c', (ii) that pupils taught by this method have little ability for word analysis, and are therefore helpless and frustrated when they meet unfamiliar words, so that their reading vocabulary is limited. (iii) that the method produces bad spellers, and (iv) that the children pronounced their words one by one without meaning or expression; that is, they were word callers. More on this later.

In spite of such faults, many twentieth century writers have supported the use of word methods followed by word analysis. Schonell[1] said that children should first acquire a reading vocabulary of from seventy to hundred words and be able to read simple material fluently before they are given any phonic training. Anderson and Dearborn[2] hold a similar belief.

The Phrase Method developed out of the word method, because it is said that we read in phrases, and that some words usually go together. The words are learnt by analysing the phrase. Young children however do not read in phrases, as analysis of eye-movements show, and a child who learns

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1. Schonell, F.J. (1961) The Psychology and Teaching of Reading, Oliver and Boyd. 4th Edition p. 109 and passim.
2. Anderson, I.H. & Dearborn, W.F. (1952) op. cit. p.257 and passim.

a phrase may not recognize its constituent words in a similar setting. It is useful only after the child has learnt to read a number of words, and the teacher wants to promote fluency by discouraging word-by-word reading.

The sentence Method was introduced as an attempt to encourage meaningful reading or 'thought-getting' by eliminating word-by-word reading. It is based on the principle that 'the sentence is the unit of expression' as G.L. Farnham[1] pointed out. In this method, the first unit of presentation is a complete sentence. This is later broken down into its constituent words and then into the letters of words.

As early as 1881 G.L. Farnham, a suprintendent of schools in the U.S.A. is said to have published a book entitled 'The Sentence Method of Teaching Reading'. He referred to experiments, the results of which had indicated that a word method was better than phonetic method because the former produced greater reading fluency, but that the reading was still poor since the words were pronounced as independent units. He went on to say that the unit of thinking is a thought, that things are 'cognised by wholes before knowledge of parts is acquired', and that teaching should therefore be by whole sentences. He also said that 'eye-reading', for the direct extraction of Meaning from print, rather than

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1. apud Anderson & Dearborn, op. cit. p. 240.

oral Reading, was the best thing. The idea of teaching the sentence as a unit was also in keeping with the idea of a 'Gestalt' as conceived by the Gestalt psychologists, that since the whole is more than a sum of its parts, the sentence is more than a sum of its constituent words. Farnham condemned phonic analysis; but Deeroly who used the sentence method in Brussels, analysed sentences into phrases, words, letters and finally sounds. It was through A. Hamaide's report on Deeroly's work entitled the 'Decroly Class' and published in England in 1925, that the sentence method gained wide influence in England, and Decroly's procedure was therefore used there. The sentences are usually well illustrated to convey the meaning.

Although the sentence Method encourages reading for meaning, it also encourages memorisation in which the learner pays little attention to the individual words, so that attack on new sentences becomes difficult. Lessons on word recognition are therefore necessary afterwards.

The Story or Paragraph Method is, like the sentence method, designed to lay emphasis on the learner's deriving meaning and interest from what he reads. The unit of teaching is a story, which is supposed to encourage meaningful reading. By constant repetition, the sentences and words are learnt. But it has been found that this method too encourages memorisation of the story with little or no attention paid to the words. The experience approach in

which the children are helped to write and read 'stories' arising from their own experiences has also been proposed and used by some. Its main limitation is that too many new words may have to be learnt within a short time.

It was the weaknesses in the analytic approaches that brought the violent attacks on such methods in the second half of this century. Their weaknesses are that they led to inaccurate word perception, poor word analysis and inaccurate spelling. Rudolph Flesch[1] (1955) delivered a diatribe on the reading methods of his time, that is the analytic approaches, and blamed them for the wide incidence of functional illiteracy. He recommended that the children should begin to read by learning the letters and associating them with their sounds. Terman and Walcutt[2] also criticised, but less violently, the little and inefficient teaching of phonic analysis. Hunter Diack[3] too criticised the little use of phonic teaching which had resulted from too much emphasis on words and sentences. He recommended a 'phonic word' approach, based on the idea that a printed word is 'a time-chart of sound', and that the child should be brought as quickly as possible to gain knowledge about

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1. Flesch, R. (1955) Why Johnny Can't Read. New York. Harper & Brothers.
2. Terman, S, and Walcutt, C.C. (1958). Reading: Chaos and Cure, New York, McGraw-Hill Book Co.
3. Diack, Hunter (1955) op. cit.

letters, what the various letters look like and how they are used. These criticisms led gradually to a change towards greater emphasis on the teaching of phonics.

An evidence of the recent emphasis on the teaching of sounds is the use of Pitman's Initial Teaching Alphabet, one instance of which forms the main subject of this report. Another evidence is that provided by Chall[1] who, from her analysis of the most widely used basal-readers in America, found that basal readers of the late 1950's and early 1960's concentrated on teaching words by sight, so that phonics and the alphabet were much less emphasized. She said, "Indeed, one has to look rather hard to find any phonics (or code-learning) exercises." But her comparison of the 1962 edition of one of the two leading basal series with the 1956 edition showed "a trend towards a heavier code emphasis"; that is, phonics was taught earlier and more practice was devoted to it.

Comments on Methods

No single method has been found to be better than all other methods in every aspect of reading. An eclectic approach to the teaching of reading is therefore essential. A combination of methods that will encourage reading for

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1. Chall, Jeanne S. (1967). Learning to Read: The Great Debate, New York, McGraw-Hill Book Co., pp. 184-185.

meaning, promote interest, develop word-recognition skills, and help accurate phonic analysis so that correct spelling and tackling of new words may be facilitated, is better than any single method. Vocabulary in the beginning readers should be controlled and carefully graded so that the words are related to the children's interests and are within their level of understanding.

Evidence was sought in the investigation reported here on the values of some of these approaches to the teaching of reading at the early stages, and these are discussed in a later chapter.

E. ENGLISH LANGUAGE IN NIGERIA

As part of the legacy inherited from the period of the colonial administration of Nigeria by Britain, the English language is used in the country as the official national language. It is used in the judicial, legislative and administrative arms of the government, in industry, and education, as well as for international intercourse. This is rather fortunate because the English language is one of the unifying forces which bind together the diverse elements in the country. The 56 million people in Nigeria are said[1] to speak about two hundred different languages, although it has also been estimated thatten major ethnic groups, each

1. Survey Team sponsored by the NUC and Federal Ministry of Education, Nigeria. (1966): English Language Teaching in Nigeria. Mimeo. p. 9

numbering between half-a-million and fourteen million people, constitute about eighty per cent of the population. According to Chief Obafemi Awolowo[1], "..... there are ten principal national groups in Nigeria which constitute about eighty per cent of the entire population ....." These ten and the other national groups, who are still to be identified separately, are diverse in their origins, and speak different languages." (underlining mine)

The English language therefore provides a means of communication not only between the different ethnic and linguistic groups within the country but also with the other millions of people all over the world who use the English language. Another advantage in the use of the language is that, although it has to be second language because almost all Nigerians have a mother-tongue other than English, it does not engender the same type of emotional feeling which the introduction of one of the Nigerian languages as the lingua franca might arouse in many of the other Nigerians who do not speak that particular language. The incidence of violent riots in some parts of India over the introduction of a national language indicates what could happen in Nigeria in similar circumstances. For whichever of the three main languages - Hausa, Yoruba or Ibo, each of which

1. Awolowo, Chief Obafemi (1966). Thoughts on Nigerian Constitution. Ibadan, O.U.P. p. 24

is spoken by more than seven million people - should be chosen as the lingua franca, would not only be a foreign language to quite a large proportion of the country's population, but it would also not have that advantage of international usability which is the special attraction offered by the English language. English language is therefore likely to retain its position for a long time to come.

There are great differences, however, in the amount of contact which different people in Nigeria do have with the English language. In a very few homes, especially those of highly educated parents, the children are exposed from a very early age to the use of the English language and many of them may go to Primary or even nursery schools where English is used exclusively as the medium of instruction. Such children have maximum contact with the language both at home and in school, as well as through children's books which are usually made available to them in both places. These children however, constitute a negligible, though increasing, proportion of the population.

Next to the group just described are those children who, even though they may neither speak English at home nor attend primary schools in which English is used as the medium of instruction from the beginning, yet live in urban areas where they make frequent contacts with people who speak

the language, have opportunities to listen to radio broadcasts and, in a few cases, watch television. They also tend to have comparatively better qualified teachers than the next group of pupils to be described. The third group of pupils estimated [1] at about fifty per cent of the primary school population in Western Nigeria which is believed to contain the highest proportion of urbanized peoples in the country, live and attend school in the rural areas. In the villages, most probably only the teachers can speak English: but unfortunately the teachers themselves tend to have a rather shaky control of the English language. Tomori[2] has expressed the problem thus, "it cannot be too strongly emphasized that the main problem in the teaching of English in Nigeria is the paucity of qualified teachers; in most rural areas, the village teachers are the models of spoken English for miles around, except for what comes on through broadcasting." In an earlier work, he had also remarked, "the spoken and written English of many teachers was very

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1. Calcott, D. (1968). Some Trends and Problems of Education in Western Nigeria, 1955-66, Part III. West African Journal of Education, Vol. XII, No. 2, June; p.107.
2. Tomori, H.O. (1967). A Study in the Syntactic Structures of the Written English of British and Nigerian Grammar School pupils. Ph.D. Thesis. London. (Ibadan University Library) p.185.

poor ..... In addition to stylistic mistakes there were grave errors of pronunciation."[1] In addition these children in the rural areas make little or no contacts with spoken English through radio broadcasts and they have in most cases no suitable children's story-books. The result is that the children's chief source of contact with the language, quite apart from the teacher, is their reading books which they do not always possess, either. In this connection, Tomori's[2] comment on what the situation was like in a town not untypical of towns in Western Nigeria is illuminating: he wrote, "About one out of every three pupils lacked class Readers, exercise books, or rulers either because their parents were too poor to provide them or because the pupils had lost them." It is even worse in the village schools!

There is therefore a great disparity among the different groups of children in the quality of their knowledge, and proficiency in the use, of the English language by the time they leave primary school which marks the end of formal schooling for most of them.

English is usually the medium of instruction at least in the last two years of primary schools in post-primary institutions. But the knowledge of the language possessed

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1. Tomori, H.O. (1963). An Investigation into the Standards of written English of final year pupils in some Western Nigerian Primary schools. M.A. THESIS. London. p.82.

2. Ibidem, p.81.

by most secondary school entrants tends to be rather poor. For this reason, some secondary schools struggle feverishly in the first year or so of their course to develop the pupils' skills in the reading, writing and speaking of the language. Fundamental weaknesses no doubt, exist in the instruction in English at the primary level. One careful survey of the English language problem in Nigeria has produced the following remark, "since the common practice is to assign teachers with the lowest levels of training ..... to the lower classes of primary, most Nigerian boys and girls are exposed to extremely poor English at the start and either they fail to learn the skills necessary to use it as the language of learning, or they form bad habits which interfere seriously with learning of the language at later stages of schooling."[1] It is not surprising therefore that a desire for and pleasure in, the extraction of information from books, which results from the acquisition of the capacity for intelligent reading, are not common characteristics of primary school leavers in Nigeria.

Quite apart from the limitations attributable to the unstimulating environmental conditions in which many Nigerian children have to learn English, and the inadequacy

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1. Survey Team sponsored by the NUC and Federal Ministry of Education, Nigeria. (1966)::<u>English Language Teaching in Nigeria</u>. (Mimeo). p.9.

of their teachers' qualifications, it seems that the conventional orthographic system of the English language may be an added source of difficulties for Nigerian children learning to read English. Reading, which should normally aid through usage the development and consolidation of the children's proficiency in the language, is a rare occurrence among Nigerian pupils, to most of whom it has become rather a drudgery than a source of pleasure.

Thus, the concatenation of several factors, such as poor teachers, inadequate guidance from the irregular spelling of English sounds, the transfer of linguistic habits associated with the mother tongue to English, and the severe limitation in opportunities for using and listening to the language, produces in Nigerian children a poor ability for the correct enunciation of English sounds. Tomori[1] has rightly observed that "the average Nigerian grammar school pupil, even when he is in the highest class, has considerable difficulty in understanding the type of speech normally used by educated British speakers. This difficulty of oral comprehension is not much less when the speaker is a Nigerian who has an appreciable competence in English intonation." There is therefore a pressing need for research and information regarding the special problems confronting the Nigerian learner of English and on how such problems might best be

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1. Tomori, H.O. (1967). op. cit. p. 13.

solved. The present investigation is aimed at providing answers to some of the problems.

F. TEACHING ENGLISH AS A SECOND LANGUAGE

As already noted above, the English language is a 'second language' in Nigeria. A second language is one which is not the mother tongue, but is learnt later for use for communication in the community. According to A.H. Marckwardt[1] "When the term English as a Second Language is used, the reference is usually to a situation where English becomes a language of instruction in the schools, as in the Philippines, or a lingua franca between speakers of widely diverse languages, as in India." English is used in both of these ways in Nigeria.

Teaching English in a second language situation demands a different approach from that used in teaching it to native speakers of the language. The Nigerian learner of English hopes to acquire the abilities to understand it when spoken by others, to speak it intelligently himself, to read it for extracting knowledge and information, and to use it in writing for conveying his own thoughts and feeling. Thus the learner must reach a reasonable standard in the articulation of English sounds, the control of syntactic

1. Marckwardt, A.H.: English as a Second Language and English as a Foreign Language, in Allen, H.B. (Ed.) (1965): Teaching English as a Second Language. New York, McGraw-Hill Book Co., p.4.

structures, and of rhythm and intonation, the acquisition of suitable written and spoken vocabulary, and the mastery of spelling.

As in all learning, the first important thing in second language learning is that the learner's interest must be aroused and maintained. The teacher has the responsibility of supplying motivation by using suitable materials and creating appropriate situations in which the pupils will be keenly interested in learning the language. The aural-oral aspect, that is, the practice of listening to and speaking the language, is believed to be of primary importance, because that is what one first learns in a first language situation. This has been emphasized by Fries[1] and other writers on language teaching. Reading and writing, it is believed, follow only after some knowledge of the spoken language has been acquired. If the ultimate aim of reading is the extraction of meaning from print, true reading consists in reading words and sentences which already have meaning to the reader. For this reason, Gray[2] insists that the words used in early reading lessons should be those which already have meaning in the life of the reader.

In the investigation which forms the main topic of this report attention was paid to some of the problems associated with the teaching of English as a second language in Nigeria,

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1. Fries, C.C. (1945) Teaching and Learning English as a Foreign Language. Ann Arbor, University of Michigan Press.
2. Gray, W.S. (1956). Teaching of Reading and Writing. Paris Unesco (Monographs on Education, No. 10). P.67

G. SUMMARY

This chapter has been designed to serve as an introductory back-ground to the investigation into the comparative values of Pitman's World Initial Teaching Alphabet and the Traditional Orthography of English as coding systems for teaching English reading to beginners in Nigeria. It has been concerned partly with trying to show the nature of language and its relationships with writing and meaning, partly with the nature of reading and the methods of teaching reading, and finally, with the general situation regarding both the use, and the procedures in the teaching of English reading in Nigeria so as to indicate some of the problems. An attempt is made in the next chapter to define the particular problem with which this investigation is concerned.

CHAPTER II

THE PROBLEM

A. DIFFICULTIES ARISING FROM TRADITIONAL ENGLISH ORTHOGRAPHY

For centuries the problems posed by the irregularities in English spelling have been recognised. John Hart[1] as early as 1551 referred to "the vices and faultes of our writing which causes it to be tedious and long in learnying: and learned hard, and evill to read." In recognition of such irregularities, Adamson[2] also wrote,

> "..... the English child who is learning to read is involved in the mazes of many notations, under the exasperating pretence of battling with one. The natural disposition of his mind to classify and generalize leads him to expect that the sign will change when the sound changes that it will help him to the sounds. The English notation disappoints all these expectations; in consequence, the process of learning to read English is not in itself educative."

More recently, another pertinent observation was made in this connection by Sir James Pitman[3] thus, "Unfortunately, English is very un-alphabetic. If you were to pronounce more than

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1. Hart, John (1551) The Unreasonable writing of our English Toung.
2. Adamson, J.W. (Ed.) (1907) The Practice of Instruction. National Society Depository. London.
3. Pitman, Sir James (1965). An English Teaching Alphabet, English by Radio and Television. November, 18th 1965.

two-thirds of the words in the English language as they are printed, nobody would be able to understand you at all. As many of you know, our spelling is the reverse of helpful. You learn to pronounce a-n-d as 'and' ..... and to pronounce s-h-a-l-l and h-a-v-e as 'shall' ..... and 'have' ..... and you then come across a-l-l and s-a-v-e and find they are not 'al' .... and 'sav' ... but 'aul' and 'saev' .... The character 'a' has yet different values again in 'father', 'was' and 'any'." It has also been reported that in the Daily News of 1875, Sir John Trevelyan described the English notation as "a labrynth, a chaos, an absurdity."[1]

The remarks just quoted above on the irregularity of English spelling may sound rather extreme, yet they call attention to the illogicality of English spelling. Other writers who may not agree that this illogicality is a source of weakness at least recognise its existence. For instance, one view which may also sound extreme in the opposite direction is that expressed by Jagger[2] in the following words: "English spelling as a means of indicating ideas directly is a beautiful institution whose disappearance or renovation everyone should lament .... our system of written words in structure and in the way that it is used by us, is mainly indicative of the

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1. apud Harrison, M. (1964) Instant Reading. London, Sir Isaac Pitman and Sons Limited. p. 8
2. Jagger, J.H. (1929). The Sentence Method of Teaching Reading London. Grant.

sense; it is indicative of sound in the secondary degree. The written form of each word is associated directly with its meaning and indirectly with its sound, in this resembling the word-ideograms of earlier times." It may be said therefore that although all writers recognize this phonic illogicality as a characteristic of English Orthography, they do not all agree that it is something to be regretted and rectified. A few investigations have been conducted to discover whether the irregularities of English spelling do in fact constitute a source of difficulty for those learning to read English.

As part of their investigation into the relative values of using phonic and Word Methods of teaching reading, J.C. Daniels and Hunter Diack[1] found that "irregularly spelt words were more difficult to read than phonically simple words." When this is viewed in conjunction with their earlier assertion in their pamphlet 'Learning to Read' published in 1953, that "many of the problems of teaching reading come from the fact that there are so many irregularities in English spelling"[2], it is clear that they regard the illogicalities of English spelling as a cause of difficulty for both the teacher and the learner. A number of investigators who used various forms of

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1. Daniels, J.C. and Diack, Hunter (1956). Progress in Reading. University of Nottingham Institute of Education. 71pp.
2. Quoted in Diack, H. (1965). In spite of the Alphabet, London, Chatto & Windus. p.112

regularised spelling in teaching children to read, as will be seen in the next section, also found that children learnt to read more quickly with some of these than with the traditional English orthography, thus indicating that regularised spelling was easier. In 1960, the National Foundation for Educational Research in England published a report on W.R. Lee's[1] investigation designed to discover whether spelling irregularity was a cause of difficulty in reading. This is described briefly.

Lee gave each word in the passages to be read a quotient of irregularity obtained by a special method which took into account whether the way each sound was represented in each word was the most frequent one. Those words having the lowest quotients (i.e. the more regularly spelt words) were grouped as category A, and those with the highest quotients (i.e. the more irregularly spelt words) were grouped into category B. In the reading of continuous passages, it was found that two of the three groups of children had more difficulty with B than with A words, whilst one group (the older children) had more difficulty with A than with B words. In reading a list of isolated words, consisting of twelve selected from each of categories A and B, however, the children aged seven to eleven years found more difficulty with irregularly spelt (i.e. group B) words.

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1. Lee, W.R. (1960). Spelling Irregularity and Reading Difficulty in English. (Institute of Education, University of London. Occasional Publications No.2) With the National Foundation for Educational Research in England and Wales.

Although this evidence is not sufficiently conclusive, it did indicate that irregularly spelt words might be a source of difficulty in reading. A discussion of some of the attempts made to solve the problems associated with the illogicality of English spelling follows in the next section. But meanwhile let us take a look at the main types of inconsistency of English Orthography.

The first type of inconsistency is that observable in the varying visual patterns of words. For instance, the patterns BEG, Beg, and beg all stand for the same word. Quite apart from the variations due to the use of lower and upper-case characters in print, there are further variations arising from the large number of individual predilections in handwriting, and the use of italics in printing.

The second type of inconsistency is the lack of systematic relationship between the letters used in words and the phonemes of which such words are composed. There are three distinct aspects of this. The first is that the 'names' given to the letters of the alphabet in many cases do not correspond to the sounds denoted by such letters in words. The greatest offenders in this respect are h, w, and y. One can hardly blame the child who, having spelt 'h-e-r', (i.e. aitch-ee-err) announced that this says 'a cheer'! Nor can one blame the child who spelt 'white' as 'y-t'. Even in those cases where the 'name' given to the letters correspond to the sounds they make in some words,

they do not always make that sound in all words. Which brings us to the second aspect of this type of inconsistency. That is, one letter or a group of letters does not always denote the same sound; but it may represent different sounds in different words. For instance, the letter u denotes different sounds in the words put, cut, and mute; while the combination 'ea' also denotes different sounds in bread, break, and bleak. Finally, the same sound is not always represented by the same letter. The sound denoted by 'oo' in 'food', for instance, is represented in very many different ways in different words, as may be seen from the following sample of words all of which contain the same vowel sound: you, do, true, shoe, crew, groom, two, through, bull, and fruit. It is no wonder then that English spelling has been described as a 'labrynth' and a 'chaos'.

B. ATTEMPTED SOLUTIONS

The various devices which have been suggested for solving the problem posed by the phonic illogicality of English orthography are of three main types. There are those which advocate a reorganization of English spelling so that it will become regular and phonetic: new letters or modified forms of existing ones, or new combinations of these being introduced where necessary, so that one letter or one group of letters can be used for each sound. There are also those which advocate the use of some devices to help younger learners to get over the initial

stages of learning to read. The aim here is to help children to identify the different sounds in each word without changing its conventional spelling or letters. Finally, there are those which advocate a temporary alphabet for beginners, so that once they have passed over the initial difficulties they will be prepared to face the difficulties of conventional spelling. A few of these suggestions are discussed.

1. Spellings Reform and New Alphabets.

In 1569, Sir Thomas Smith published his 'Dialogue Concerning the correct and Emended Writing of the English Language'. He criticised the irregularities of English spelling and said that it was wrong to use two different letters for the same sound, e.g. c and s, or to use one letter for different sounds, e.g. the letter y for different sounds in 'yes' and 'try'. He proposed a new thirty-four letter alphabet to replace the existing one so that words could be spelt as pronounced. Smith was closely followed in this line of thought by John Hart who proposed in 1569 'An Orthographie Contenying the due order and reason howe to write or paint thimage of mannes voice, most like to the life of nature'. He also published in 1570 'A Methode or Comfortable beginning for all unlearned, whereby they may be taught to read English in a very short time with pleasure'. He believed that the new alphabet which he proposed would make learning to read easier because it allowed for regularity in the spelling of sounds. But the times were not

ripe yet for the acceptance of such radical changes, so that several other scholars advocated similar innovations in vain.

William Bullokar published in 1580 his 'Booke at Large for the Amendment of English Orthographie' in London, and Charles Butler followed this in 1634 with his 'English Grammar' in which he too recommended a consistent alphabet, and claimed that children who used it could do in one year what previously could hardly be achieved in three years. Further attempts to solve the same problem were not wanting in the succeeding years. Since reformed alphabets had made no headway, one schoolmaster - Richard Hodges - seemed to have thought that a system using the conventional alphabet, but with diacritical markings placed above and below letters to distinguish the different sounds made by such letters, would be acceptable. He published in 1644 'The English Primrose' in which he described "The Easiest and Speediest Way, both for the true spelling and reading of English, as also for the True Writing thereof: that ever was publicly known to this day." This ... like the other proposals, failed to convince those who preferred to stick to the conventional alphabet even when they admitted it made learning to read a difficult task.

The system of writing, known as Phonotypy, developed by Sir Isaac Pitman with A.J. Ellis, Dr. Edwin Leigh's Prononuncing Orthography, and the Simplifyd Spelling of the Simplified

spelling Society are discussed in the third part of this section because although their advocates hoped they would eventually come into general use they were actually used only as transitional alphabets by learners before going on to read traditional orthography; and the authors actively encouraged their use in this manner.

More recently G.B. Shaw, following the long line of those who have suggested modification of English orthography, is said to have stated in a letter to Tit-Bits of 22nd March, 1946 that, "What is needed is a new alphabet of not less than forty-two letters, which is the lowest number sufficient to represent all the sounds of spoken English recognizable by a single symbol each."[1] Davis[2] of California has also recently produced a new alphabet which he has called the ten-vowel or t-v alphabet. This alphabet is discussed here because, although the author recognizes that it may be so used, he does not regard it as a transitional alphabet from which the learner goes on to learn traditional orthography, but as a permanent orthographic reform.

Indeed Davis[3] stated, "Under no circumstances should the children, who first learn to read and write with stable

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1. Quoted in Downing, J. (1967). Evaluating the Initial Teaching Alphabet. London, Cassell, p.3
2. Davis, Leo G. (1963). K-a-t spelz cat - A fonetik rEder. New York, Carlton Press.
3. Davis, Leo G. (1963). The davis speller. New York, Carlton Press. pp. 15-16

orthography, be required to learn or to use the inconsistent spellings of traditional orthography. What is best for the beginners, should be good enough for permanent reform." He has published the First McGuffey Reader, described as the 'granddaddy of all American textbooks', in his Fonetik alphabet.[1] Davis claimed, on page four of this Reader that "Because of its simplicity and conservative features, it seems logical to assume that the orthography, set forth in this text, would be far more acceptable to most people, than any other basically fonetik notation yet offered. It has no new letters, no new combinations, no silent letters, no diacritics and no unorthodox use of any symbol .... About forty per cent of the words retain their traditional spellings, and the modified spellings consistently follow a more familiar pattern than any other basically fonetik notation now in the field. Although it falls far short of perfection, it is probably as radical as the public would consider at this time." The main feature of this alphabet is that it uses both the upper case and lower case forms of the vowel letters, the first for the long sounds, e.g. 'A' for the vowel sound in day and break, and the second for the shorter sounds, e.g. 'a' for the vowel sound in hat, 'e' for that in get, but 'E' for that in read. He has also introduced a new letter 'a' for the vowel sound in 'what, not, taught and ought', which he does not accept as new because it

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1. Davis, Leo G. (1966) Davis McGuffey Fonetik First Reader. New York, Carlton Press Inc.

is sometimes used in print and in handwriting. He does not use duplicated consonants, but uses double consonants where necessary to distinguish the sounds e.g. th, zh, and sh. The other special features are that no capitals are used as such, and the punctuation marks for fullstop, question and exclamation are put both at the beginning and at the end of sentences, where appropriate.

As spelling reform, the Davis ten-vowel alphabet does not go far enough because it leaves too much room for confusion and uncertainty. But if it were recommended as a transitional alphabet it would offer the advantage of easy transfer to traditional orthography because it looks in many ways like the traditional spelling. Davis believes that by trying to teach children to read, adults too will learn to read in the new system so that change to the new system needs cause no difficulty to either children or adults. He continues to hope, like other spelling reformers, that a general spelling reform will eventually take place.

2. Devices for helping children over the initial difficulties of traditional orthography without changing the conventional alphabet or spelling.

The first attempt in this direction that comes to mind is that by the Edgeworths, Richard Edgeworth[1] and his daughter

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1. Edgeworth, R.L. & Edgeworth, M. (1798) Practical Education. London.

proposed a system of diacritical markings for distinguishing the different sounds made by letters. For instance, ordinary 'o' was used for the sound it has in 'vote', but it had a dot below it where it stood for the sound in 'hot'. The letter 'a' was used for the sound in 'date', but had a dot above and below it for the sound in 'ball', and a dot above it for the sound in 'hat'. The consonant 'c' had the sound in 'cat' but in a word like 'face' it had a dot below it. Diagraphs like th, sh, and ch had a horizontal line through them to show that they represented one sound, while silent letters had a 'mark of obliteration,below them. The Edgeworths claimed that it made learning to read quicker. But the result was slow word by word reading because of the laborious effort to decide the sounds in each pattern of print.

The next attempt to be discussed in this category is that by Nellie Dale[1] who proposed a system of colours for helping children to distinguish between different sounds. She classified consonants according to the points where they are articulated in the mouth. Voiceless consonants were written in blue while voiced ones were written in black (but white on a blackboard) and vowels in red. Silent letters were written in yellow. In teaching children to read Dale made them build up each word with the letters that represent its sounds in order of their

1. Dale, Nellie (1899) On the Teaching of English Reading. London, Philip.

appearance.

Dale's system was accepted by many people and her reading books sold well, but it did not last long because the climate of opinion at the time was one in which 'global' methods rather than synthetic ones were encouraged.

In recent times, a colour scheme has been proposed by Gattegno[1]. The scheme resulted in about two hundred and fifty coloured signs in forty-eight groups - twenty-nine of which are consonants and nineteen are vowels. A few vowels are introduced first and then a few consonants. These are then built into words. He used 'game-like activities' to ensure that the relationships between sounds and colour are learnt. The large number of colours used created a problem not only of discrimination by the learner but also of accurate reproducion by the printer. In this connection, the system used by J.K. Jones[2] has great advantages over that of Gattegno.

Jones used only three colours - red, blue, and green plus black. The letters are printed in colour according to their sounds: which means the colour of the letter will change when its sound changes. For instance, the t's in 'tent' are blue, but the 'th' group as in 'the' is red. There also are three-differently shaped and coloured backgrounds. These are

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1. Gattegno, C.(1963) Words in Colour, Educational Explorers Limited, Reading (England).
2. Jones, J.K. (1965) Research Report - phonetic colour New Education, Volume 1 No.4, February.

the circle, the square, and the triangle, which are either blue, red, or green. Letters are printed in black over these coloured backgrounds. Silent letters are printed in blue circles. The light sound known as a 'schwa' is printed in a red triangle whatever its spelling. The long vowel sound in 'heard' is printed in a red circle, while the long vowel sound in 'hard' is printed in a red square. In the same way green has its own system of combination with differently-shaped backgrounds to indicate the sounds. There are also several non-conforming letters. This colour-and-background scheme appears rather confusing. But the letters are introduced by nineteen interesting stories which the children are said to enjoy. After a three-year experimentation with the system in nineteen British schools, Jones' conclusion was, "The scores attained in the main investigation with the five and six-year-old children in the nineteen schools point strongly to the conclusion that children find it easier to learn to read and spell in black print when their early reading material is coded in colour, and the sounds are conceptualised in story form."[1] The colour scheme is none-the-less elaborate, and its main attraction is likely to be more as a guide to the teacher who requires some aid in deciding the sounds made by letters in different words.

The use of new alphabets as an initial teaching medium

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1. Jones, J.K. (1967). Colour Story Reading - A Research Report. London. Thomas Nelson, (Mimeo) p.61

before transition is made to the complexity of traditional orthography is discussed in the next section.

3. Transitional Alphabets

During the nineteenth and twentieth centuries, a number of new alphabets and/or spelling systems have been devised for teaching reading mainly at the initial stages before transition is made to traditional orthography. Although the original aim in most cases has been that sooner or later there might be a complete change-over to the new writing system, the ease with which those who had learnt to read in the new orthographies could also read material printed in the traditional orthography was emphasized.

Sir Isaac Pitman together with Ellis prepared in 1844 a new system of writing English according to sounds, which they called 'Phonotypy'. For each sound they provided one symbol known as a 'phonotype'. This system was presented in a little pamphlet by A.J. Ellis[1] in 1845. Phonotypy, by permitting the writing of English words according to their sounds, eliminated a lot of the irregularities of English spelling. It was a forty-two-letter alphabet which included all the letters of the conventional alphabet, except k, q, and x, plus nineteen new

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1. Ellis, A.J. (1845). A plea for phonotypy and Phonography. Bath, Isaac Pitman Phonographic Institute.

characters. This alphabet soon came to be used for teaching reading in the so-called 'phonetic Schools' all over Britain, and it is said that one Stephen Pearl Andrews introduced it into Massachussetts in the U.S.A. where an experiment involving about eight hundred pupils was said to have been conducted with it in the Waltham schools between 1852 and 1860. The State Normal of New York was also said to have taken up Phonotypy by 1853 while a committee of the legislature of Michigan State also recommended that it be adopted in the state. The 'First Phonetic Reader' produced by Benn Pitman, Sir Isaac Pitman's brother, in phonotypic alphabet was widely used. Children who learnt to read in this medium were helped to transfer to reading in traditional orthography after about six to eight months.

Claims in favour of phonotypy included considerable saving in the time needed for learning to read. It was variously estimated that children needed between half and one-twentieth of the time previously required with traditional orthography. It is also said that phonotypy improved pronunciation and spelling. Farnham[1] writing on the use of this medium in the schools of Syracuse, New York from 1858, stated, however, that

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1. Farnham, G.L. (1881). The Sentence Method of Teaching Reading, Writing and Spelling. A manual for Teachers. C.W. Barden. Syracuse, New York. Quoted in John Downing (1967) op. cit. p. 57.

although it saved time and improved pronunciation,[1] only a few of those who had used it became good spellers. In any case, it was shown that phonotypy had decided advantages over the conventional orthography or 'heterotypy'. Sir James Pitman who devised the Initial Teaching Alphabet in the present century based it on the phonotypy of his grandfather, Sir Isaac Pitman. The Initial Teaching Alphabet is discussed in a separate section. Some other transitional alphabets are examined meanwhile.

Dr. Edwin Leigh, a minister and physician, published in St. Louis in 1864 a pamphlet entitled 'Pronouncing Orthography' in which he presented a phonetic writing system which used "some seventy or seventy-five characters." Leigh had specifically aimed at easing the learner's transfer from his new writing system to conventional print. Initial trial of Leigh's orthography, into which the first reader of Sargent's Primer had been transliterated, was an immense success because it was found that considerable saving was made in the time required for learning to read, articulation of sounds was improved, and the logical power of the pupils' mind was said to be improved. Accordingly, the orthography was used in all the schools of St. Louis for about twenty years from 1886. It was also used in the schools of Boston. All these activities aroused further interest in the reform of English spelling.

An international convention for the Amendment of English

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1. i.e., according to a committee of the American Philosophical Society in 1899, it "corrected the brogue of the Irish children & the Yankee dialect of the American" Downing ('67) p.56

Orthography was held at Philadelphia in 1876 and there the Spelling Reform Association was formed. The Association soon produced a Spelling Reform Alphabet, which they claimed would help children to read quickly before they changed to the conventional alphabet. Together with the Simplified Spelling Board which was organized in New York in 1906, the Association however, concentrated more on getting spelling generally simplified, and in this they achieved little. The founding of the Simplified Spelling Society in London in 1908, and the subsequent printing of a number of Readers in 'Simplifyd Speling' (e.g. 'A Ferst Reeder in Simplifyd Speling' and 'Sekond Reeder') which they produced caused this transitional alphabet to be used longer in England and Scotland. It is said that between 1915 and 1924, fifteen British schools Experimented with Simplifyd Speling and it was found that not only was learning to read accelerated but change to traditional orthography presented no difficulty. Winch[1] who, for twenty years carefully tested look-and-say, phonic, and phonoscript methods of teaching reading in a few British schools, found that the phonoscript method was the best and that the children had little difficulty in changing from the transitional alphabet to traditional orthography, thus confirming the value of writing systems which

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1. Winch, W.H. (1925). Teaching Beginners to read in England. Bloomington, Illinois.

ensure phonic consistency. The new alphabets and writing systems, never-the-less received no more than experimental consideration. M. Harrison[1] has given a summary of some of these experiments all of which point to the advantages of using a regular orthography. In 1940, the Simplified Spelling Society published a revision of their writing system which was called Nue Spelling, and in the preparation of which they had taken account of the system earlier devised by Professor R.E. Zachrisson of Uppsala for teaching English in Sweden. Several books were published in Nue Spelling and efforts were thence-forward concentrated on using the system as an initial teaching medium, especially after the second World War.

The second World War opened people's eyes to the disturbing dimensions of functional illiteracy in Britain and America, thus giving rise to increased interest in improving the teaching of reading. In the wake of this, a Spelling Reform Bill was introduced into the British Parliament in 1949, and although it did not get through at the time this move was later to lead to the tremendous development of a new transitional alphabet - the Initial Teaching Alphabet. This alphabet which forms the main focus of this investigation is discussed in a separate section.

An interesting transition alphabet is that devised by

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1. Harrison, M. (1964) Instant Reading: the Story of the i.t.a. London, Sir Isaac Pitman & Sons Ltd. Chapter VIII & Appendix III.

Professor Lanham[1] of the University of the Witwatersrand for teaching English to Bantu-speaking children in South Africa. As the alphabet was specifically prepared for teaching pronunciation according to South African English speech, it is of limited applicability.[2] The main point of concentration was the teaching of the vowel sounds of South African English, with particular reference to those sounds which the Bantus had difficulty in differentiating owing to mother-tongue interference. Lanham's pronunciation spelling (p.s.) as the system is called, uses some symbols of the International Phonetic Association together with the conventional letters of English. According to his report[3], the results obtained after three years of experimentation (starting in 1964) with this medium in thirteen Johannesburg schools have shown that such a Phonemically consistent alphabet has great value in helping users of English as a second language to overcome the problems of mother-tongue interference in the articulation of English sounds. The use of some IPA symbols in Lanham's system, however, makes passages printed in it look different from one printed in traditional English orthography. This is a deviation from the modern tendency to produce new alphabets that will harmonize

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1. Lanham, L.W. (1967) Teaching English in Bantu Primary Schools. Final Report on Research. Publication No. 4 of the English Academy of Southern Africa.
2. See section F of the ninth chapter for a discussion of the question of a standard model for English pronunciation.
3. Lanham, L.W. (1967) op. cit.

as much as possible with the traditional orthography while at the same time solving the problems inherent in it. In this connection, Sir James Pitman's remark is pertinent. He said ".... Just as Shaw insisted that only a departure from the inherited disadvantages of the past could give a significant improvement in daily performance, so Follick and I insisted that only a retention of it could best help in the learning (sic) period - if it could be assumed that the old medium would inevitably continue and would thus for ever need be learned"[1]

Even an initial teaching medium recently produced by the Simpler Spelling Association, which is the result of a merger of the Simplified Spelling Board and the Spelling Reform Association in America, has as one of its advertised advantages the complete similarity of the letters used in the system to those of traditional orthography. This new initial teaching medium is known as World English Spelling (WES). It is "a substantially phonemic notation devised with special reference to its compatibility with traditional orthography, with the result that it is immediately readable without error and with little hesitation by those familiar only with traditional orthography, and traditional orthography is immediately readable without difficulty by those familiar only with WES."[2] ..... This

1. Pitman, Sir James - Quoted in Downing, J. (1967) Evaluating the Initial Teaching Alphabet. p. 69

2. Simpler Spelling Association (1964). A Summary of World English Spelling. New York. (Leaflet).

medium uses letters of the traditional alphabet both singly and as digraphs, so that it is possible to denote each sound by one letter or digraph only, and vice versa. WES has not been tried experimentally but it is claimed to have advantages over the other new alphabets because it can be easily printed or typewritten without recourse to any new letter-types or machines. The Simpler Spelling Association has offered the medium and materials printed in it for experimentation by those sufficiently interested. It may be, however, that in a transitional alphabet or initial teaching medium there is something to be gained by introducing some element of difference beyond a mere reorganization of the conventional letters to denote phonemes consistently, in order that children may easily recognize it for what it is - an initial step to something else.

Two other writing systems - those by Follick and Wijk, respectively - which have been devised recently deserve mention at least because, according to Downing's[1] report, their authors severally suggested that their own systems should be considered for experimental use at the time when an experimental investigation into the use of a simplified medium for the teaching of reading was about to start in Britain. Although Sir James Pitman is said to have described Mont Follick, M.P., as "an out-and-out spelling reformer - one who wishes to see the old

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1. Downing, J. (1967) Evaluating the Initial Teaching Alphabet. London, Cassell. pp. 68-75, & 93-98.

utterly superseded and indeed abolished",[1] Follick did consider the use of his new writing-system as an initial teaching medium. He used no new letters but used only twenty-three of the conventional roman letters which he reorganized both singly and in digraphs to denote the phonemes of English. Follick, in fact, had proposed the spelling Reform Bill (1949) and the Simplified Spelling Bill (1953) in the British Parliament, which were later to lead to the investigation into the use of a simplified medium for the teaching of reading. Wijk[2] too, did not use any new letters in the new writing system proposed by him which he called Regularized English. He criticized the new letters in Sir James Pitman's Augmented Roman (AR) alphabet - later known as i.t.a. - and contended that his own system was more suitable than AR for the investigation which was proposed to be undertaken at the University of London's Institute of Education. The Initial teaching alphabet (i.t.a.) which was eventually used is described in a later section of this chapter.

The various proposals for improving English spelling either by reorganizing the existing alphabet or by devising a new alphabet thus finally turned into attempts to use regularized spelling, with or without new letters, for teaching young children to read before they transfer to reading the more complex

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1. Ibidem. p.72
2. Wijk, A. (1958) Regularized English. Stockholm. Wiksell.

traditional orthography. Even the later move has not been accorded willing acceptance in English speaking countries. What explains this resistance to change? The main objections are considered in the next section.

C. MAIN OBJECTIONS TO CHANGE

The main objections to the modification or total change of English Orthography can be grouped into two main categories, thus:

1. That the traditional orthography of English has certain values which would be lost if a change were to be made to a new orthography, and
2. That changing from traditional orthography to a new and reformed one would involve so great difficulties that it would be easier and more economical to retain the old than to introduce the new.

An examination of the important arguments in each category is essential for the assessment of their relevance or validity.

1. That there are important values in the present system

One important argument here is that it would be wicked and profane to add to or take away from the roman alphabet because it is considered sanctified by reason of its having been used in the Latin placed alongside Hebrew and Greek above the head of Jesus Christ on the cross. This is an early argument

which was probably weighty during the sixteenth and seventeenth centuries, but it has so lost weight in modern times that there is hardly anyone who would adduce it as a reason for opposing orthographic reform.

There is also the argument, which is of academic interest to philologists, particularly etymologists, that English words as they are conventionally spelt provide clues to their etymological history, and that such clues would be lost if their spellings were to be changed. For instance, the spelling of the word 'debt' is said to reflect its derivation from a Latin word. In the same way, the spelling of 'know' and 'knight' is said to reflect their origin in Old English, and that the retention of the silent letter 'k' is reminiscent of the time when the words were sounded with an initial 'k' sound. Similarly too, the spelling of the words 'court' and 'course' is said to indicate their derivation from Latin through French, while the spelling of 'psalm' and similar words indicates their Greek origin.

The argument is, however, untenable for several reasons. Firstly, it is known that some words have come to be spelt in the way they are spelt as a result of analogy with other words having different historical backgrounds, so that, in fact, their spelling is likely to be a misleading guide to their source. Secondly, there are other more reliable ways of tracing the etymological history of words than that provided by their

spelling. The use of etymological dictionaries is one of these. There is ample opportunity to record the ways in which the sounds of words have changed over the years, instead of retaining the drudgery of the old spelling in order to indicate obsolete pronunciations at the risk of the words being mispronounced in current usage.

Another argument is that traditional English orthography has been associated with great literature, such as the Bible, the works of Shakespeare and other great poets. It is said therefore that if this orthography were changed, a passage from the Bible or one of Shakespeare's sonnets would not look the same again, and that their beauty would be spoilt. Such people appear not to realise that the spellings of many words have indeed been changed since the time of Shakespeare or since the Bible was first translated into English. In fact, Shakespeare would hardly recognize his own words as they are normally printed today: yet this has in no way detracted from the value or beauty of Shakespeare's works.

Finally, it is argued that English orthography, by reason of its complexity, constitutes an important educational tool because it serves as a source of discipline for learners of the English language. It is said that by enforcing concentration, it provides intellectual training, so that the mastery of it is a mark of excellence that distinguishes the intelligent from the less-intelligent and the educated person from the illiterate. This argument is insupportable in an age that

demands mass literacy and the provision of maximum educational opportunities for all. Why should an orthography have an in-built system of traps and stumbling blocks that is liable to condemn some people to perpetual illiteracy? An illogical system can hardly be expected to serve as a tool for sharpening the intellect, if that were possible, rather it causes the waste of a large proportion of the time and effort required in mastering its intricacies. This proportion could be more usefully devoted to something else. It seems that reasons for the retention of the conventional orthography of English must be sought in some other direction than in its intrinsic values.

2. That a change would entail great difficulties.

The arguments regarding the difficulties of a change of orthography revolve mainly round the economic implications of such a change. There is, for instance, the argument that the cost of transliterating all existing books into the new orthography would be so great that the financial loss could not be adequately compensated for by the gains in other directions. Printers would have to acquire new letter-types; new keys would have to be installed in typing machines; while a large number of road signs, commercial advertisements, street names, instructions on all sorts of machines, etc. would have to be changed. Adults too would have to be re-educated to read in the new medium.

While accepting this, exponents of improved orthographies state that the change does not have to be so abrupt and total. They argued that only children's books need be produced in the new medium at first. Thereafter, the new editions of books being produced will be in the new orthography. Adults too could learn to read the new medium, while children who have learnt to read in the new medium would also be able to read traditional orthography. In this way, there would be a long period of transition during which the old and the new would be used together, while the new would gradually displace the old. Such a procedure can be facilitated by devising a new orthography that is not too different from the traditional one while at the same time avoiding the disadvantages and limitations of the latter. For this reason, most modern orthographic innovations have been deliberately made to retain very close connections with the romanic letters and their systems of symbol-sound relationships have been based on the most typical relationships observed in traditional orthography.

Furthermore, it is argued that since language is living and dynamic, the pronunciation of words will change gradually, so that a time will come again when the orthographic representation of words will not correspond to their sounds in speech. Related to this also is the argument that since the pronunciation of English varies regionally there would be the problem of deciding which regional accent to asphyxiate in the phonemic

writing system. To take the second point first: the problem is in fact not a difficult one because the new orthography is not supposed to be strictly phonetic. At any rate, the speech of the educated people of Southern England has usually been taken as the model[1], and this could be continued, while a few local variations such as in American English would not be out of place. On the first point, it may be said that the mere fact of committing spoken words to writing in a phonemic alphabet is more likely than not to fix the sounds of these words, so that these sounds would become relatively stabilised.

Finally, it is argued that the skilful reader does not in fact proceed by analysing the words he reads into their constituent sounds, but he recognizes them as whole words. It follows therefore, according to some people, that laying emphasis on symbol-sound correspondence which a phonemically regular orthography facilitates, is likely to lead to slow synthetic word-by-word reading, which demands greater concentration on the sounds than on the meanings of what is read. It can be said in this connection that phonemic regularity does not necessarily lead to this type of reading. The deciding factor is the method used in teaching reading, and a fanatical synthetic approach needs not be used with a phonemically regular orthography.

If it is recognized therefore, that the traditional ortho-

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1. See discussion of the question of a standard model for English pronunciation in Section F of the nineth chapter.

graphy of English does constitute a source of difficulty for those learning to read and write the language, there is need for carefully controlled research to establish the best orthography which would both remove the ills of the traditional one and entail the minimum of transitional problems should it be necessary to change eventually to such an improved orthography. An alternative solution is to devise and try out a new orthography which will help children to read easily before they transfer to the traditional one and with maximum benefits. A number of such orthographies have been suggested as described in an earlier section of this chapter, and the W.I.T.A. approach which is discussed in the next section, is one of these.

D. THE W.I.T.A. APPROACH TO THE PROBLEM

World Initial Teaching Alphabet (W.I.T.A.) is a special variant of the Initial Teaching Alphabet (I.T.A.). Each of these has been developed by Sir James Pitman as an initial teaching medium aimed at making easier the early stages of learning to read and write[1] English before transition is made to traditional orthography (T.O.). This topic is discussed under three sub-headings, thus: (i) Background to the development of the I.T.A. (ii) What is the I.T.A.? and (iii) What is the W.I.T.A.?

(i) Background to the Development of the I.T.A.

As already indicated in section (B) of this chapter,

1. "write" here means to put one's thought into writing rather than mere mechanics of forming shapes of letters.

Sir Isaac Pitman together with A.J. Ellis developed and used experimentally in the nineteenth century a simplified phonetic system known as Phonotypy for teaching children to read and write English. Sir Isaac Pitman was the inventor of the Pitman shorthand which he had taught in his private school opened at Wotton-under-Edge since 1837, as well as by Postal tuition and through his Phonographic Journal which he started in 1842. Alexander John Ellis, on the other hand, was a scholar of Trinity College, Cambridge, a mathematician, a barrister and philologist, who had been working on the production of a phonetic alphabet applicable to all languages. They met in 1843 and by January 1844 had together produced a phonetic alphabet for the English language. This alphabet, in its first form consisted entirely of upper case characters, and was published in January 1844 in the Phonotypic Journal which had been added as a second section to the Phonograpic Journal from 1843. By October 1844, the alphabet had been changed to a mixture of upper and lower case characters and it was revised several times until a satisfactory form was presented in January 1852.

Sir Isaac Pitman's ultimate aim was toward spelling reform, though not one in which sound would be represented in precise phonetic form, but one which would be free of any anomalies or ambiguities. In the meantime, however, Phonotypy was used as a transitional alphabet both in Britain and the U.S.A. and it was reported that those who learnt to read through the medium

did so with ease and later transferred to T.O. without difficulty. The spelling reform movement, as already remarked, made little head way in spite of the efforts of the various persons and organizations which directed their efforts towards its promotion.

Sir Isaac Pitman's grandson - Sir James Pitman - took interest in spelling reform in the twentieth century, and in 1936 he was elected into the committee of the Simplified Spelling Society of Britain. He was the Seconder of Mont Follick's unsuccessful Spelling Reform Bill of 1949, and the second Bill of 1953 which led to the decision of the British Minister of Education to support research aimed at comparing traditional orthography with a regularized orthography. Sir James Pitman later developed a new alphabet in the design of which he took account of the work previously done on Phonotype and the experiences of the Simplified Spelling Society with their 'Nue Spelling'. The new alphabet consisted partly of the ordinary letters of English plus a number of new letters. It was first called Augmented Roman alphabet (A.R.) but later came to be known as the Initial Teaching Alphabet (I.T.A.). This alphabet was used by the Institute of Education of the University of London in a programme of research comparing T.O. with a regularized orthography which was started in September 1961. More is said on this research in the third chapter, but meanwhile, the I.T.A. itself is described next.

(ii) What is the I.T.A.?

As was remarked above, the Initial Teaching Alphabet is a new writing[1] system developed by Sir James Pitman, and it has its origins in the Phonotypy of the nineteenth century. It was first known as the Augmented Roman alphabet (A.R.) because it consisted of the letters of the romanic alphabet plus a number of new letters or augmentations. Its name was later changed to the Initial Teaching Alphabet (I.T.A.), first to indicate what it is used for, that is, an initial teaching medium from which transition is made to T.O., and secondly to remove the confusion in the minds of some people who, not realizing that the ordinary English writing system uses Roman letters, began to ask why a strange 'Roman' alphabet should be used for writing English.

This alphabet originally consisted of forty-three characters or symbols before the symbol ɾ, which is a slightly modified form of r, was introduced for use in the combinations ir, er, ur, and yr, which occur in such words as bird, father, spur, and myrrh. The I.T.A., therefore, has forty-four characters or symbols, twenty-three of which are exactly the same letters of the Roman alphabet and nineteen are slight modifications or recognizable combinations of the ordinary roman letters used in English, e.g. æ, oe, th, d, r, ue, etc. Only two are completely different viz. ə and ɔ, which are used in representing the short and long vowel sounds in such words as 'cook'

1. This includes both handwriting & printing, although it appeared first in print.

and 'fool', respectively. Only lower case characters are used in the I.T.A., that is, there are no capital letters. In those positions where capitals would normally be used, larger forms of the same lower case characters are used. Fig. 2.1 shows the full list of I.T.A. symbols and their phonemic values.

Because the I.T.A. was specifically designed as a transitional alphabet, care has been taken to build into it features which will facilitate the transition from it to T.O. Its symbols have been made to look as much as possible like those of T.O. Even in spelling, regular correspondence between phoneme and symbol has been sacrificed to the need to keep as close to the T.O. form as possible[1]. For instance, although silent letters are not represented in writing, duplicated consonants are retained, as in 'babbl'. Both the symbols c and k are used for the same sound, the choice being dependent on the T.O. spelling of each word; for example, 'cat' and 'kit' are I.T.A. forms. Where the two symbols c and k are used together in the same word in T.O., they are also retained in I.T.A., for they are regarded as duplicated consonants in such a position; for example, 'kick' and 'clock' are I.T.A. forms. For similar reasons, the letter t is retained in such words as 'ditch' and 'catch'. Both in modifying the letters of T.O. and in combining them as digraphs to form I.T.A. symbols, care has been taken not to disturb their 'top coast-line' so that they can easily be identified with the old letters and

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1. This consideration has reduced considerably the highly desired symbol-sound consistency, especially in the representation of the 'Schwa' sound. W.I.T.A. however, helps here as will be seen below - p. 103.

No.	Character Shape	Name	Sample Words for Sounds	
1	æ	ae	pæ	ænjel
2	b	bee	bæ	bœtl
3	c	kee	clæ	curly
4	d	dee	dæ	didn't
5	ɛɛ	ee	pɛɛ	ɛɛven
6	f	ef	fɛɛ	færly
7	g	gae	glɛɛ	given
8	h	hae	hɛɛ	hasn't
9	ie	ie	pie	ie
10	j	jae	jiev	jeneral
11	k	kae	kiet	kwickly
12	l	el	lie	licon
13	m	em	mie	mœtor
14	n	en	niet	never
15	œ	oe	pœ	œnly
16	p	pee	pœl	prievæt
17	r	rae	rœll	rieval
18	s	ess	sœl	sudden
19	t	tee	tœll	tueba
20	ue	ue	pue	uesfœl
21	v	vee	vue	very
22	w	wae	wœ	Wælx
23	y	yae	yœ	yugster
24	z	zee	zœ	zombi

No.	Character Shape	Name	Sample Words for Sounds	
25	x	zess	ix	housex
26	wh	whae	which	whærfor
27	ɕh	chae	ɕhin	ɕhicken
28	ʧh	ith	ʧhin	ʧhicken
29	ʤh	thee	ʤhis	ʤhærfor
30	ʃh	ish	ʃhin	ʃhilliŋ
31	ʒ	zhee	rœʒ	televiʒon
32	ŋ	ing	goŋ	aloŋ
33	r	ur	per	urjent
34	ɑ	ah	pɑ	fɑther
35	au	aw	pau	aufœl
36	a	at	pat	acʃhon
37	e	et	pet	etɕhiŋ
38	i	it	pit	instans
39	o	ot	pot	onor
40	u	ut	putt	umbræj
41	ɷ	oot	pɷt	wɷdn't
42	ɷɷ	oo	ɷɷz	tattɷɷ
43	ɑu	ow	ɑul	allɑu
44	ɑi	oi	ɑil	annɑi

The sample words opposite each character illustrate only the 'primary value' (or primary sound) of that character, which is also included in its name. 'Majuscule' characters are slightly larger characters of the same shape used where capital letters would be used in traditional orthography.

Fig. 2.1. The Symbols and sounds of the Initial Teaching Alphabet. Reproduced from Scott, John (1967): I.t.a. and the teaching of literacy. London. The Bodley Head. page 20. (By permission of the author).

thereby ease transition to T.O. Furthermore, there is no special symbol for the light neutral vowel sound known as 'schwa', which occurs in the final syllables of father, motor, and labour and in the first syllables of appear, oppose and upon. This vowel sound is represented in I.T.A. exactly as it is represented in T.O. so that the I.T.A. forms of very many words look very much like their T.O. forms. In spite of this, John Downing* has stated that "the number of alternative spellings for the forty-odd phonemes of English has been drastically reduced". The letters x and q have been left out because they can be represented by ks and kw, respectively.

A number of criticisms have been made against the I.T.A. Most prominent among these are that: (i) there are too many letters to learn, that is, forty-four instead of the twenty-six in T.O. (ii) The new symbols would be difficult to write, and children may find it impossible to write them properly (iii) Reading and writing in I.T.A. will affect adversely standards of spelling in T.O., and (iv) It is a waste of time to learn something that will have to be unlearned later when transition to T.O. is made. Only experimental investigation can establish the merits and demerits of the I.T.A., and these are discussed in the third chapter.

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* Downing, J.A. (1964) The Initial Teaching Alphabet Explained and Illustrated. London. Cassell, pp. 19-20.

(iii) What is the W.I.T.A.?

World Initial Teaching Alphabet - W.I.T.A. - which is also known as 'I.T.A. for Speech', is a special form of the I.T.A. Exactly the same I.T.A. symbols are used in W.I.T.A. and the spelling system is also the same. There is, however, an important difference. This difference is the incorporation into W.I.T.A. of a system for indicating stressed and unstressed syllables in words as they are used in speech. Thus speech rhythm is indicated in W.I.T.A.

Speaking on W.I.T.A., Sir James Pitman* said, "To convey rhythm as well as sound, I have made some very minor alterations in the initial teaching alphabet which thus better suits it to teaching English speech. The sounds of English are there in the characters of i.t.a., but there is absent from ordinary i.t.a., as in our traditional orthography, any information about rhythm. In a page printed in the adapted i.t.a., however, information is conveyed, not only of the sounds and of the rhythms as well but also of those changes in sound which accompany change in rhythm. In other words, the i.t.a. characters are able to convey alphabetically, sound, rhythm and change."

In W.I.T.A., two types of stressed syllables are indicated,

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* Pitman, Sir James (1965) i.t.a. and Teaching English as a Second Language, in Proceedings of the Second Annual International Conference on the i.t.a. August 1965. I.T.A. Foundation, Hofstra University, New York. p. 53.

viz. normal stress and primary stress. The former is indicated by normal type, while the latter is indicated by characters of the same type-size but thicker and darker, that is, the type known as semibold, Unstressed syllables, on the other hand, are indicated by smaller type.

But when a syllable is unstressed, its vowel sound is reduced to a light sound which can be one of two types. The first type, known as the 'schwa', is the light neutral sound in the last syllables of such words as colour, leader, umbrella and able, as well as in the first syllables of again, occur, and forget. This type of unstressed syllables is represented by smaller characters printed in the lower position, that is, on the same base line as the larger symbols representing stresse syllables[1]. The second type of unstressed syllable is that which contains or makes the light vowel sound (i) known as 'schwi', as in the last syllables of conflict, baby, and puppet, as well as in the first syllables of expel, secure, and include. This type of unstressed syllable is indicated also by smaller characters, but printed slightly above the base line, that is, on the higher position, so that the tops of the characters are level with those of the larger characters representing stressed syllables. A sample of W.I.T.A. print is shown as Fig. 2.2

Sir James Pitman has also suggested the criterion for dividing words into syllables in W.I.T.A. which is slightly different in some respects from that used in ordinary syllabi-

1. W.I.T.A., thus solves in a way the problem of the inconsiste representation of the 'Schwa' in I.T.A.

"œ, mu*th*er," anserd jon. "ie'm cleen. ie woʃht last niet. ie'm redy for scœol."

"nœ, jon," sed mu*th*er. "bee a gœd boi. first woʃh yœrself. hav yœr ba*th*, and *th*en hav yœr brekfast. mæk yœrself cleen. woʃh yœrself befor yœr brekfast. hav yœr ba*th* first."

"yes, mu*th*er," sed jon. "ie'll woʃh mieself nœu. ie'll woʃh mieself befor ie hav mie brekfast. ie'll woʃh mie hands and mie fæs and mie body. ie'll hav a ba*th*. ie'll bee cleen. *th*en after *th*at ie'll hav mie brekfast."

jon woʃht himself. hee cæm to his mu*th*er and sed, "mu*th*er, ie woʃht mieself, and ie'm cleen. plees, mæ ie hav mie brekfast nœu?"

"yes, jon," sed mu*th*er. "yœ mæ hav yœr brekfast. yœ ar cleen nœu, and yœ mæ hav yœr brekfast."

Fig. 2.2. Sample Page of W.i.t.a. Print. (Page 80 of N.N.E. Book Two).

fication. The criterion[1] is to preserve morphemic units, that is syllabic division will follow closely the lines of the division of words into recognisable simpler words. For instance the word 'taller' is a combination of the morphemes 'tall' and '-er', so that it will be syllabised thus, tall/er. The reason for this procedure is that it will facilitate word building; for if the word 'trader' is syllabised as trad/er in W.I.T.A. the learner will easily see it as a combination of 'trade and '-er', which is not apparent in the word's ordinary syllabification as tra/der.

From the above rule, it follows that the following word-endings are regarded as separate syllables from the morphemic-words to which they are joined as suffixes:

-ed (the past tense morpheme of verbs ending in t and d, e.g. print/ed, and grad/ed).

-er (indicating the doer of the action described by the verb, e.g. driv/er, teach/er, plumb/er).

-or (as for -er above, e.g. act/or, conduct/or).

-es (the plural morpheme of nouns, in which the -es ending is pronounced /iz/[2] and not /s/[2] or /z/[2], as in hous/es and peach/es but <u>not</u> in gates and grades).

's (the possessive morpheme of nouns having a final /s/[2] sound, e.g. horse/'s, class/'s and Alice/'s)

-ing (the participial morpheme suffixed to verbs, e.g. us/ing, feed/ing, and climb/ing).

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1. From unpublished document prepared by Sir James Pitman.
2. I.P.A. notation for sounds.

-er (the morpheme indicating the comparative degree of some adjectives, e.g. near/er, and straight/er; but the word 'better' would be syllabised as bet/ter, and not as bett/er, because 'bett-' is not the root-word).

-est (the morpheme indicating the superlative degree of certain adjectives, e.g. quick/est, and slow/est).

-al (the adjectival ending of some words, e.g. fat/al, and dent/al.

-ly (the suffixed morpheme indicating some adverbial forms e.g. free/ly, man/ly.

In all other cases the rules for syllabification are as in normal practice, and double consonants are split medially where the rule laid down above is not broken.

Because W.I.T.A. provides a guide not only to the sounds but also to the rhythms of English speech Sir James Pitman believes that it is especially suited to the teaching of English as a second language. The teacher who has learnt to read W.I.T.A. properly will be able to present a better model of English reading and speech to his pupils since he has a ready guide to proper pronunciation and rhythm which is not provided in T.O. and which he himself very often has little competence in teaching without such a guide. It is also believed that the habits of pronunciation and the use of appropriate rhythm which the pupils and teachers acquire in oral reading would be transfered to speech, so that their spoken English would be accordingly better than it would otherwise

have been.

The earlier sections of this chapter have been devoted to an attempt to show how the traditional orthography of English creates difficulties for the learner of reading and what suggestions have been made for over-coming such difficulties. These include devices to be used with T.O. to ease learning to read in it, the use of regularized spelling with the usual letters of the alphabet, total change to new orthographies using new alphabets, and the use of temporary orthographies which will ease learning at the initial stages before transferring to T.O. Pitman's I.T.A. and W.I.T.A. are among the last suggested type of solution; and W.I.T.A. in particular has been recommended for use in second language situations. It is now possible to define the problem which the present investigation sets out to solve.

E. THE PROBLEM DEFINED

As was shown in the final section of the first chapter, English is used as a second language in Nigeria and it is very important both as a means of instruction in educational institutions and as a means of communication both within the country and with other peoples and organizations all over the world. It was shown too that the teaching of English in Nigeria raises so many problems which are peculiar to the situation:

These include lack of adequately trained teachers, the inability of the pupils to purchase suitable reading material, and limited contact with the language - especially in the rural areas - because most parents do not speak English and because the use of the mass media of communication such as the radio and television is either non-existent or severely limited. But quite apart from such problems as are peculiar to the Nigerian situation, there are also problems arising from the way the English language itself is written. It has been shown in the previous sections of this chapter that these problems have been recognized in countries where English is the native language, and that various solutions to these problems have been suggested. It has also been suggested that the World Initial Teaching Alphabet (W.I.T.A.) devised by Sir James Pitman offers special advantages as an initial teaching medium in places like Nigeria where English is used as a second language.

The problem therefore is to design and execute a programme of experimental investigation for the purpose of finding out what happens when W.I.T.A. is used as an initial teaching medium for teaching English to young children in Nigerian schools. Such an investigation must aim at discovering the different advantages of using W.I.T.A. and T.O. for teaching similar groups of children, and it must therefore be a carefully controlled experiment in which all other factors are held as constant as possible so that any differences obtained may be

attributed with some measure of accuracy to the differences between the initial media of instruction, that is, W.I.T.A. and T.O. The influence of other factors, such as sex and social environment, on the functioning of these two different media must also be investigated.

This type of experimental investigation was indeed started in Nigeria in 1966 and a description of the investigation and results obtained from it forms the main topic of this report. But meanwhile other similar investigations are reviewed in the next chapter as background to the Nigerian experiment.

CHAPTER III

SUMMARY OF PREVIOUS RESEARCH

Pertinent research can be classified into three main categories, thus:

(a) Those concerned with the nature of reading

(b) Those concerned with the relationship between the complexities of the traditional orthography (T.O.) and reading difficulty, and with the use of various devices for removing such difficulty.

(c) Those concerned with the discovery of the values of the Initial Teaching Alphabet (i.t.a.) as a device for reducing the difficulties of T.O.

Some of these have already been mentioned in the first two chapters, but they are here described in greater detail.

A. ON THE NATURE OF READING

As previously discussed in section 'B' of the first chapter, it is believed that reading involves not only word recognition and sounding but also comprehension and interpretation of the author's ideas. But there is the question as to what should be the initial unit of teaching to read. Some people think it should be single letters, while others think it should be syllables, words, phrases, or even sentences. Investigations have been conducted to discover the natural or

best unit that should be used in beginning reading instruction.

(i) Late in the nineteenth century, J.M. Cattell[1] used a tachistoscope to expose letters and words briefly - for a period of ten milliseconds, i.e. one-hundreth of a second. He found that skilled readers could recognize only three or four unrelated letters during this period. But in the same exposure time, two unrelated words containing approximately twelve letters, or a sentence of four words containing about twenty-four letters could be recognized. Cattell concluded from this that the unit of recognition in reading was the whole word, and the cue was the 'total word picture'.

(ii) Edmann and Dodge[1] also used the brief exposure method and confirmed that while a maximum of only six or seven letters could be perceived at a time, familiar words containing up to about twenty letters could be recognized in 100 milli-seconds, i.e. one-tenth of a second. By varying the distance at which words were exposed, they also found that words could be recognized at distances at which it was impossible to discern the individual letters. It was therefore concluded that whole words constitute the unit of recognition and the 'general word shape' was the cue.

The result of these two findings was to emphasize the

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1. See page 30-31

need to use whole words as the unit for introducing learners to reading. Arguments have, however, been raised against the findings, in particular, that even if skilled readers perceived words as wholes, it would not necessarily follow that beginners did so too.

(iii) Julius Zeitler (1900)[1], by studying the misreadings of words exposed in a tachistoscope, found that the capitals and most of the ascenders and descenders were reported correctly; but because such ascenders and descenders were sometimes reported in different positions from those in which they occurred in the words presented, Zeitler's conclusion was that they were perceived as letters not merely as projections above and below the line in the word shape, and that letters rather than word shape constituted the cue to word recognition.

(iv) Wilhelm Korte (1923)[2] tried to find how far away, in all directions, from the fixation point letters and words could be perceived. He found that isolated letters could be recognized farther from the point of fixation than whole words, and that the configuration of the word might be sensed but it was difficult to recognize the word from a vague impression of its outline alone. Korte therefore concluded that a word was recognized through an identification of its constituent elements.

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1. Apud Anderson, I.H. & Dearborn, W.F., op. cit. p. 179
2. Ibidem. p. 186

Such a view was in favour of introducing letters as the unit of teaching reading initially.

(v) Wilson and Flemming[1] who studied the reading progress of young children in school reached the conclusion that a knowledge of the shapes, sounds and names of letters was an important factor for success in the early stages of learning to read.

(vi) Gibson, Pick, Osser, and Hammond[2] conducted an experiment in which they presented fifty groups of letters in a tachistoscope to readers. Twenty-five of these groups of letters were regarded as 'pronounceable' while the other twenty-five, each of which was related to one of the first twenty-five, were regarded as unpronounceable. For this purpose, they used the term 'pronounceable' to describe those letter-groups which fit the rules of English grapheme-phoneme or spelling-to-sound correspondence. The same groups of letters presented in the 'pronounceable' form, e.g. LODS, were also presented in the unpronounceable form in a different order, e.g. DSOL. The letter-groups were therefore in pairs, although they were presented in a random order. It was found that the

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1. Wilson, F.T. & Flemming, C.W. (1940) Grade Trends in Reading Progress in Kindergarten and Primary Grades. Journal of Educational Psychology, 31, 1-13.

2. Gibson, E.J., Pick, A.D., Osser, H., and Hamond, M.(1962) The Role of Grapheme-Phoneme Correspondence in the Perception of words. American Journal of Psychology, 75, 554-570.

'pronounceable' letter-group in each pair was correctly perceived more frequently than the unpronounceable letter-group. Gibson et al therefore concluded that the important unit in reading was not individual letters but groups of letters having invariant phonemic patterns and therefore 'pronounceable'.

There is still the argument however, that the reading of words presented in a tachistoscope is not necessarily the same as normal reading, although Crausman,[1] has shown that the perception of letter-groups presented in a tachistoscope is correlated with reading ability. Furthermore, the perceptual processes in the reading of adults may be different from those of children's reading.

(vii) To find out whether age does have any effect on the theory of the 'pronounceable group' as the unit of recognition, Gibson, Osser, and Pick[2] conducted an experiment with children. Their subjects were children at the end of the first and third grades in primary school. Five types of letter-groups were presented in a tachistoscope to the children who had been taught by a whole-word approach. The letter-groups were,

1 Words selected from the first-grade reading material

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1. Crausman, B. (1960) Temporal Perception of Good and Poor Readers. Abstract in Canadian Psychology Vol. 1, p.113

2. Gibson, E.J., Osser, H., & Pick, A.D. (1963) A Study of the Development of Grapheme-Phoneme Correspondences. Journal of Verbal Learning and Verbal Behavior Vol. 2, 142 - 146.

(2) Pronounceable three-letter-groups

(3) Unpronounceable three-letter-groups

(the letters used in 2 & 3 were taken from words in the first grade reading material).

(4) Pronounceable four - and five-letter-groups.

(5) Unpronounceable four- and five-letter-groups.

The children were instructed to spell out the letter-groups, and were told that some groups would form real words while others would not. It was found that words were most frequently perceived correctly, while the pronounceable three-letter-groups were read correctly more frequently than the unpronounceable three-letter groups. Grade three pupils recognized the pronounceable four- and five-letter-groups more frequently than the unpronounceable ones, while Grade One pupils experienced difficulty with these longer letter-groups, without any difference between pronounceable and unpronounceable ones.

From this, Gibson et al concluded that even when the child is encouraged to associate a whole printed word with the spoken word, he begins to perceive some grapheme-phoneme correspondences which he transfers to the reading of unfamiliar items; and that even first graders could read three-letter-groups in an exposure time that was too short to permit letter by letter recognition. The suggestion was that children, like adults, perceived letters in 'pronounceable groups', and that phonic training was not necessary for the discovery of grapheme-phoneme

correspondence or its transfer to new situations.

The children in the experiment were however too few and unrepresentative to permit of wider generalization. The children could have received phonic training at home, and they were probably responding to the peculiar orthographic characteristic of English which they had learnt; such response is not necessarily the same as would be observed in the learning of other languages with different orthographic characteristics. Since children often find it difficult to remember the correct order of letters in words and often confuse words containing the same letters in different order, it seems there is little basis for the 'pronounceable group' hypothesis as the natural unit of recognition.

(viii) P.A. Kolers (1963)[1] presented six-letter-groups on a screen individually to undergraduates at Harvard. One letter was shown at a time and each letter fell on the same location on the screen. The subjects were asked to recognize the words so presented. There were three types of letter-groups, thus:

1. six-letter words that could be divided into two different words.
2. six-letter words that could not be sub-divided into two simpler-words, and
3. six-letter-groups that definitely form two distinct words unblendable into one.

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1. Apud Downing, J. (1967) Evaluating the Initial Teaching Alphabet. London. Cassell, pp. 35-38

It was found that the six-letter groups forming just one word were more often correctly reported than the other six-letter groups, and the probability that a divisible six-letter-group would be reported as one word, rather than as two shorter words was high even when the gap between the third and fourth letters was increased to about 22% of the total presentation time for all the six letters.

This result negated the conclusion reached by Gibson et al that the unit of recognition was pronounceable letter groups, because pronounceable three-letter groups were not always so identified even when they formed complete words. Further-more since the correct naming of the letters in sequence did not lead to immediate naming or recognition of the word represented, mere letter-by-letter recognition is also inadequate for reading. This is however, not surprising since the letters as named do not easily suggest the sounds of words represented until they are blended by visual imagery. That is, the letters must be seen in context before they can be blended into speech sounds. The process is easier in a language like Yoruba where the sound of each letter is very much like its sound in words. This therefore underlines a difficulty of the traditional orthography of English.

Attempts have also been made to compare experimentally the differing values of the use of look-and-say or whole-word approaches on the one hand with the values of using phonics or alphabetic units at the beginning stages of teaching reading.

A large number of such investigations have been reported, but a review of some of such studies recently undertaken by Chall[1] provides a useful summary, discussion of which follows in the next three subsections.

(ix) Chall regarded as a 'Look-say' approach one whose author stated that "it taught no phonics at all and emphasized visual recognition of the whole word, 'getting the thought', and reading whole sentences." A 'Systematic-phonics' approach on the other hand was regarded as one which "taught phonics early and systematically - usually, but not always, before sight (whole) words;" the approach being "synthetic rather than analytic." An 'intrinsic- phonics' approach was one "which stressed sight or thought reading, introduced phonics later and taught a more moderate amount of it - all intrinsic to meaningful reading which was the supreme consideration."

Chall analysed the results of nine studies which compared look-say with phonic method (whether systematic or intrinsic). Those studies which reported performance in oral word recognition showed that the phonic taught groups did better in this aspect of reading than the Look-Say group, whether they were tested in the first or in the second grade (i.e., year) in school. While the Look-Say group tended to be better in silent reading skills, that is vocabulary and comprehension if they were tested in the first grade, the phonics group performed

1. Chall, J.S. (1967) Learning to Read: The Great Debate. New York. McGraw-Hill. Book Co. pp. 79-179

better in this aspect when tested in the second grade. In rate of reading and fluency, the Look-Say group performed better irrespective of the time of testing.

The improvement of the Phonics group in vocabulary and comprehension in the second grade is explained by Chall[1] as indicating that this group of learners tended to concentrate on code-breaking at first, so that meaning suffers, but after mastering a sufficient amount of phonics knowledge they can devote more attention to meaning. She would therefore regard phonics as giving better results. She remarked, "A tenable hypothesis is that if given time, phonics is advantageous not only for word recognition but also for comprehension - one of the ultimate goals of reading instruction."

(x) Chall also analysed twenty-five studies comparing Systematic- with Intrinsic-Phonics approaches as defined above. She found that the Systematic-Phonics approach was better for oral word recognition and spelling in all cases whether the testing was done in the first, second, third, fifth or the sixth Grade. For vocabulary knowledge and silent reading comprehension, the systematic-phonics approach was better in the majority of cases, while there was no difference between the two approaches in a few cases, and the Intrinsic-phonics approach was better in still fewer cases. Systematic-phonics

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1. op. cit. pp. 107-108

approach with earlier, heavier, and more direct teaching of the sound values of the letters, was therefore found to be better in the majority of cases for the eventual acquisition of the various reading skills.

(xi) Finally, Chall analysed seventeen studies which had correlated knowledge of the letters with reading achievement. Some of the studies compared knowledge of letter names and/or sounds before pupils began to learn to read with their reading achievement later; while others compared letter and/or phonics knowledge with reading achievement at the same time. Chall's conclusion from her analysis of the seventeen studies was that "At every level tested - from kindergarten through college - letter and/or phonics knowledge is positively associated with reading achievement (whether measured by oral recognition, connected oral reading, silent reading comprehension, or rate of reading) and also with spelling."

Both from investigations into the mode of perception of printed symbols, and from experimental comparisons of various methods of beginning reading instruction, as discussed above, it is possible to gain an in sight into the nature of the reading process. Attention will now be turned to investigations into the problems of traditional orthography and attempted solutions.

B. THE RELATIONSHIP BETWEEN THE COMPLEXITIES OF T.O. AND READING DIFFICULTY

Research directed towards the discovery of the relationship between T.O. and difficulty encountered in learning to read English takes one of two forms. One form is to observe whether learners do experience difficulty in reading words which are irregularly spelt in T.O., and the other is to use a more regularly spelt orthography and see if learning to read in it is easier than learning to read in T.O. Examples of each type are discussed.

1. Lee,[1] in his investigation already described in chapter II, gave groups of young children first, a prose passage whose words had been rated for irregularity, and then a list containing an equal number of regularly and irregularly spelt words, to read. He had decided the irregularity of each word in this way: he observed how far (in rank order) the representation of each sound in the word was from its most common representation in T.O., and gave the sound a score; such scores for all the sounds in the word were then added together, and the sum was divided by the number of sounds in the word to obtain that word's irregularity score or quotient. It means therefore that the higher the irregularity score of a word the more

1. Lee, W.R. (1960) Spelling Irregularity and Reading Difficulty in English. NFER in England & Wales. London.

irregularly spelt it was. Words having scores above an arbitrary figure were said to be irregularly spelt while others were regarded as regularly spelt. In the reading of the prose passage, the differences between the errors made on regularly spelt and irregularly spelt words were said to be too small to justify a definite decision, but in the reading of the 24 single words, irregularly spelt words were more numerous than regularly spelt ones among those giving the most difficulty while the opposite applied to the words giving the least difficulty. Lee's conclusion was that there was no conclusive evidence to show that irregularly spelt words gave more difficulty than more regularly spelt ones. Downing[1] has shown, however, that Lee's list of irregularly spelt words contained a larger proportion of words occurring frequently in children's vocabulary than did the list of regularly spelt words, according to the classification of children's vocabulary by Burroughs[2]. This most probably affected the results obtained by Lee.

2. The second form of investigation in this category uses either the conventional alphabet (with or without the addition of new letters) or a more-or-less new alphabet, to obtain a comparatively regular and consistent orthographic system. This orthographic system is then used experimentally to teach chil-

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1. Downing, J.A. (1967) Evaluating the i.t.a. London. Cassell, p. 50
2. Burroughs, G.E.R. (1957) A Study of the Vocabulary of Young Children, Edinburgh. Oliver & Boyd.

dren to read English. Some of these have already been described in section 'B' of the second chapter, but a few are summarised here to indicate what they achieved.

(i) As early as 1580, William Bullokar[1] put forward an orthography which would make for consistent symbol-sound relationship. He called this the 'true orthographie'. He said that he had tested this successfully on his own children, and that they learnt to read more easily. John Hart had previously (1570) proposed a new alphabet which allowed one letter for one sound and used new letters for those sounds which had none in the conventional system. In the same way, Charles Butler, at a later date (1634) prepared a new alphabet which he said would make learning to read an easier task. He proposed naming the letters according to their sounds, and using new letters for such sounds as the initial consonant sounds in thin, this, chin, and she. Richard Hodges's solution offered in his,"The English Primrose" (1644) was a system of diacritical markings placed above and below the letters to indicate their pronunciation. Hart, Butler, and Hodges all thought their systems would make reading easier but none referred to any experimental trial of his system.

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1. Bullokar, William (1580). Booke at Large for the Amendment of English Orthographie. London.

(ii) The Edgeworths[1] also devised and tried out in the eighteenth century a system of diacritical markings with the conventional orthography. Edgeworth used this system with some of his eighteen children and compared the result with what he obtained from teaching others to read in the conventional alphabet. He concluded that his system which gave better idea of the sounds made by letters was better than the conventional one.

(iii) Phonotypy, which was devised by Isaac Pitman and A.J. Ellis, was used to teach both adults and children to read in several different places in Britain in the nineteenth century. It is said that one Mr. Gowan established an evening class in Manchester in 1848 in which he taught adults to read through phonotypy. After eighteen lessons, the members of the 'first division' were able to read well in traditional print, while those in the 'second division' had made great progress in [illegible] phonotypy. A teacher at Haddington Ragged School was also said to have taught to read as quickly as it was possible to teach children from good homes to read in traditional print, and that the children's speech improved noticeably. He continued this for six years until he left the school.

It is also reported that at the Secular School, Edinburgh, one Mr. Williams taught an experimental group to read in phonotypy and a control group in traditional print. The experimental

1. Edgeworth. R.L. & Edgeworth, M. (1798) Practical Education. London.

group transfered easily to traditional print after nine months, and they performed better than the other group in an examination held in public.

(iv) In the United States too, phonotypy was used in several different places in the nineteenth century. The Boston Phonetic School was founded in 1850 to exhibit the use of phonotypy. Children taught there were said to make rapid progress, and performed very well in public spelling competitions. Having examined the children, a committee of the Massachusetts State Legislature reported that they performed much better than children of their age, and recommended that it be introduced into all primary schools in Massachusetts.

Dr. Thomas Hill who was chairman of the School Committee in Waltham, Massachusetts, initiated (betewen 1857 and 1860) experiments in which children were taught to read in phonotypy in the first six to eight months in school and then transfered to traditional print. It was reported that considerable time was saved, the children's pronunciation improved, and their spelling was better than that of children in other towns. Benn Pitman's 'First Phonetic Reader' in phonotypy had been used in teaching these children to read. Phonotypy was also used with great success in the schools of Syracuse in New York State according to a report in the 'Phonetic Journal' of 1859.

(v) Dr. Edwin Leigh also designed a new transitional alphabet which was first used experimentally in the schools of St. Louis in 1866. In this alphabet, one letter was used for each phoneme in the language, and silent letters were printed in light-faced type. Children learned to read through Leigh's orthography and then transfered to traditional print. The experiment met with such hugo success that the School Board of St. Louis decided to introduce the new system to all primary schools in St. Louis from August 1867; and there it continued for about twenty years. Reports prepared by W.T. Harris, the School Suprintendent of St. Louis, and the Reports of the Boards of Directors of the St. Louis Public Schools show that Leigh's system had great advantages. It was reported that the use of the system resulted in considerable saving in the time required to learn to read, and it improved enunciation. Harris's 1872 Report referred to the system as follows:

" ..... It saves half the time required in the three earliest years, and secures better spelling and better understanding of what is read. It makes reading a pleasure to the child, and does much to influence him to read at home."[1] The system was also used with success in Boston and other cities.

(vi) The Simplified Spelling Society which had been founded in London in 1908 published in 1910 Proposals for Simplifying

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1. apud Downing, J. (1967) Evaluating the i.t.a. p. 62

the Spelling of English in which they recommended a new system known as Symplifyd Speling. They soon published 'A Ferst Reedor in Simplifyd Speling'. In this system, they tried to depart as little as possible from normal spelling. No new characters were introduced, no diacritics, and each sound was given the symbol in commonest use for it. The aim was that it should be easily read by those who had learnt traditional orthography. Between 1910 and 1924 a number of experiments were conducted in British schools in which children learnt to read initially in 'Simplifyd Speling' and then made the transition to T.O. According to reports published by the Simplified Spelling Society[1], these experiments proved successful.

For instance, at Clepington School, Dundee, Children were taught to read in 'Simplified Speling' for about ten months before they transfered to T.O. A report by R. Jackson, a lecturer in Phonetics at Dundee Training College, quoted in the Simplified Spelling Society's Report stated that children who had learnt to read in 'Simplified Speling' had a "freer, clearer, easier pronunciation, and a more distinct and clear-cut articulation" than those who had been traditionally taught.

Also children at Morgan Academy were said to have read the first Reader in Simplified Spelling in six months after which they transfered to T.O. They were then reading a book which

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1. Simplified Spelling Society (1924) The Best Method of Teaching Children to Read and Write. Pamphlet No.7. London. Pitman.

was not normally read until after about eight or nine months, according to the report of the teachers, in the school.

This and other reports indicated that children learnt to read more easily, pronounced words better, made faster progress, and had no difficulty at transition to T.O., if they had learnt to read in 'Simplifyd Spelling', which later came to be known as 'Nue Speling'.

(vii) W.H. Winch[1] taught one group in a new system known as 'Phonoscript' in which silent letters were marked, while another group was taught in T.O. The two groups were matched for home background, teachers, and teaching methods. Winch found that the group using phonoscript performed better in reading new words than the conventionally taught group. After two years, the experimental group maintained their lead when the two groups were tested in conventional print.

(viii) Professor L.W. Lanham[2] addressed himself specifically to the needs of Bantu children learning to read English in

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1. Winch, W.H. (1925) Teaching Beginners to Read in England: Its Methods, Results, and Psychological Bases. Journal of Educational Research Monographs No.8. Public School Publishing Company. Bloomington. Illinois.
2. Lanham, L.W. (1967) Teaching English in Bantu Primary Schools: Final Report on Research in Johannesburg Schools Publication No.4 - The English Academy of Southern Africa. Mimeo.

South Africa with South African pronunciation. He devised an orthographic system known as 'pronunciation spelling' or p.s. which permitted "a one-to-one correlation between sound and symbol and a consistent highlighting of major points of mother-tongue interference." As part of the experimental programme, material on tape recorders was used to teach pronunciation in experimental schools only. Eight schools, divided equally into experimental and control groups, then participated in a reading experiment in 1965 and 1966. The experimental group learnt to read in p.s. and then transfered to T.O. while the control group read in T.O. all the time. There was no supervision, excepting that the teachers had been previously trained and were later briefed on procedure in transfering to T.O.

Tests revealed that the experimental group were better in pronunciation, spelling, and comprehension. They were also faster readers before transfer to T.O.; but reading speed was not tested after transfer.

Professor Lanham's investigation is of particular interest because it is directed towards the problems of mother-tongue interference in second-language teaching. The use of battery-powered tape recorders and pre-recorded lessons for pronunciation drills in the experimental schools only, however, added another source of difference between experimental and control groups quite distinct from the orthographic medium. Only a few of the pupils who participated in the investigation were selected, albeit randomly, for testing, so that it becomes more

difficult to validly generalize the results. The writing system - p.s. - itself is applicable only to the South African brand of the English language and is therefore severely limited in usability.[1]

All the investigations reported in this section have pointed to the fact that traditional orthography is a source of difficulty for those learning to read English. Particularly, they have indicated that when the inconsistencies in the grapheme - phoneme relationship are minimized or removed by means of a regularized orthography, learning becomes faster and more efficient. No serious difficulties have been reported to occur when those who had learnt to read in a regularized orthography were eventually required to transfer their skills to reading the more complex T.O. Experiments with the Initial Teaching Alphabet (i.t.a.), which has been designed in modern times specifically as a transition alphabet, are summarized in the next section.

C. ON THE VALUE OF THE INITIAL TEACHING ALPHABET

The Simplified Spelling Bill of 1953, which had been passed in the British House of Commons, was withdrawn when the Minister of Education indicated that she would support research aimed at finding out the advantages, if any, of a simplified method of spelling. Nothing happened for some time afterwards

1. The question of a standard model for English pronounciation is discussed in Section F, of the nineth chapter.

although the Institute of Education of the University of London with the National Foundation for Educational Research in England and Wales published in 1957 the result of Lee's investigation sponsored by them and directed to the discovery of the relationship between spelling irregularity and reading difficulty.[1]

By 1959, Sir James Pitman had perfected a new alphabet known as the Augmented Roman (A.R.) alphabet, based on the principles of both his grand father's Phonotypy and the Nue Speling of the Simplified Spelling Society, and he suggested[2] that this should be tried experimentally in British schools. Sir James strongly believed that traditional English orthography was responsible for the high incidence of reading failure in Britain and that the use of a regularized orthography would solve the problem.

When the University of London Institute of Education, with the National Foundation for Educational Research in England and Wales, set up in 1960 an eight-man Committee to direct, with the support of the Minister of Education, an investigation into the use of a special writing system 'alleged to be easy to learn and leading easily to a full reading skill', it was Pitman's Augmented Roman (A.R.) alphabet, later known as i.t.a. that they decided to use. A Reading Research Unit attached to

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1. See page 120-121

2. Pitman, Sir James (1959) Learning to Read: A Suggested Experiment. Times Educational Supplement. London 29th May, 1959.

the Department of Educational Psychology of the Institute of Education and headed by John Downing, was inaugurated to manage the experiment.

This experiment was launched in the British schools in September 1961. There were twenty experimental and thrity-three control classes in the first year although only eleven experimental and thirteen control classes were matched. The numbers increased considerably in later years. Only the teachers of the experimental classes were trained to use the i.t.a. All participating classes used the Janet and John series and the Downing Readers. The experimental pupils transfered to T.O. after completing Book Four or Five of the Janet and John Series. In the design of what Downing has called the 'Main Experiment', only pupil and class variables were controlled. But in a second experiment, starting in September 1963, more rigorous control was introduced, whereby the same teacher taught reading in the matched i.t.a. and T.O. classes in the same school and was required to devote equal amounts of teaching time to reading in each class. The roles of the experimental teacher and that of the control teacher were thus combined in one person. There were five hundred and forty eight experimental and five hundred and fifty four control pupils involved in the second experiment.

Downing[1] has given full reports of these experiments, and they have been evaluated by various people.[2] The following results have been reported from the main experiment:

1. The i.t.a. group was always significantly more advanced in the Janet and John series than the T.O. group. This, however, depended on the teacher's subjective judgment as to when the child should move on to the next book.
2. The i.t.a. group performed better in a test of reading printed in i.t.a. than the T.O. group reading in T.O.
3. The i.t.a. group wrote better compositions, judged in respect of length and vocabulary, than the T.O. groups.
4. "..... the traditional orthography of English is a very important cause of difficulty in teaching and learning reading and writing in English-speaking countries."[3]
5. There was a significant loss of ground when the pupils' previous performance in i.t.a. was compared with their performance in T.O. after transfer.

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1. See, (i) Downing, John (1967a) The i.t.a. Symposium. Slough, Bucks. NFER.
   (ii) Downing, John (1967) Evaluating the Initial Teaching Alphabet.
2. See, (i) Sceats, John (1967) i.t.a. and the teaching of literacy. London. The Bodley Head.
   (ii) Downing, John & Brown, Amy L. (1967) (Eds) The Second International Reading Symposium. London. Cassell.
3. Downing, John (1967) op. cit. p. 235

6. The performance of the i.t.a. group on reading tests presented in T.O. was however, slightly but not significantly better (at the beginning of the third year) than that of the T.O. group.

7. The i.t.a. group performed better in a spelling test in T.O. than the T.O. group.

8. In the light of the result stated in 4 above, Downing[1] observed that improvements in the design of the simplified alphabet, changes in its spelling rules, improvements in teaching materials and techniques, especially in respect of the timing of the transition stage, might reduce the magnitude of the loss at transition.

Results obtained from the second experiment, based on the performance of the September 1963 entrants only in thirteen schools (and numbering about 250 each of i.t.a. and T.O. pupils) indicated that:

(i) The i.t.a. group performed better in reading tests presented in i.t.a. than the T.O. group did in tests presented in T.O.

(ii) When both groups were tested in T.O., after the i.t.a. group had passed the transition stage, the T.O. group was significantly superior in most tests of reading to the i.t.a. group.

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1. Ibidem, p. 257

(iii) The T.O. group also performed slightly but not significantly better than the i.t.a. group in tests of spelling in T.O. after transfer.

The i.t.a. experiment in Britain received very wide attention and publicity, and has for this reason been evaluated by very many people. A number of such evaluations are considered below.

John Sceats[1] who, visited in 1965-66 a number of schools using the i.t.a. in Britain and sought the opinions of teachers and head teachers of about thirty Infants and Junior schools, concluded that i.t.a. had great values for the teaching of literacy and was an important tool for the achievement of valuable educational purposes. He believed that i.t.a. also had an important place in the teaching of backward readers in Junior schools. He said that he had found no evidence to dispute the findings from the main experiment reported by John Downing, although he claimed that teachers differed widely in competence - a variable which was however controlled in the second experiment.

Wilkinson[2], supervisor of schools in Bolton, Lancs, summarising the effects of the use of the i.t.a. in Bolton, stated that it had been very successful, in the sense that the children taught through this medium learnt quickly and gained

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1. Sceats, John (1967) op. cit.
2. Wilkinson, C.M. The Initial Teaching Alphabet, apud Downing, J. & Brown, A.L. (1967) (Eds.) op. cit. pp. 140-147.

confidence in reading.

Diack[1], however, observed that the experiment had all the appearance of being planned to persuade public opinion to accept i.t.a. rather than to discover the truth. This appears to be an unfair criticism, although in this type of innovation it is necessary to convince the public that their children are not being misled to be condemned to a state of permanent confusion and illiteracy. Diack, who favoured a phonic word approach with phonically graded material, also remarked that the choice of look-and-say books as the basis of the investigation biased the results in favour of the i.t.a. from the outset. His reasoning was that since the look-and-say approach was so inefficient, the i.t.a. with its advantage of spelling regularity was sure to be better than T.O. taught in the look-and-say fashion. He contended that it would be more difficult to show that the i.t.a. was better than the T.O. when a letter-based phonic approach is used. He indeed pointed out that he had statistical evidence which showed that the i.t.a. children were significantly inferior in reading achievement to those in his 'phonic words method' infant investigation. He criticised Downing's advice to teachers not to change their methods and thought an investigation into methods, especially using

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1. Diack, Hunter (1965) In Spite of the Alphabet. Chatto & Windus. Chapter 8.

phonically graded materials, would be more worthwhile[1].

Peters[3] investigated the influence of reading methods on spelling. Her comparison of the spelling achievements of children taught by look-and-say, phonic, and the i.t.a. approaches, respectively, led her to the conclusion that the i.t.a. was best. She observed that i.t.a. children had the sort of non-redundant 'skeletal' structure from which conventional English spelling might be readily developed. This finding confirmed Downing's result concerning the spelling achievement of the i.t.a. - taught children.

Sir Cyril Burt's criticism[4] was mainly on the statistical procedures used by Downing, especially the use of the Kolmogorov Smirnov test of statistical significance which is sensitive to any kind of difference by trying to maximise such differences and is therefore liable to make unimportant differences seem significant. He remarked, 'As it is, the methods of comparison here adopted are far too crude and naive to carry conviction with a critical reader'. Holmes[2] too remarked that the choice of the Kolmogorov-Smirnov technique, though certainly acceptable left much to be desired. This, however, does not detract

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1. See Hunter Diack, in Downing J. (1967a) The i.t.a. Symposium. pp. 109-111.

2. Holmes, J.A. Ibidem. p. 125.

3. Peters, M.L. (1967) The Influence of Reading Methods on Spelling. BJEP. 37. 47-53.

4. Burt, Sir Cyril, apud Downing, J. (1967a) The i.t.a. Symposium Slough, Bucks. pp. 100-108.

from the value of the investigation, but only limits the extent of the generalizability of its results. One of the results as Neale[1] has remarked is that it represents a revolutionary break-through in psychological thinking on the concept of 'readiness' for reading. She thought the idea of 'readiness' was toppled by the reading achievements of young children in Downing's experiment. More research is certainly required in this direction.

On the question of the organization of the transition stage from i.t.a. to T.O., there have been both those who feel that it may be better to delay transition until the children have developed adequate silent reading skills in i.t.a. and those who feel that transition should be made earlier and before the children have become so habituated with reading i.t.a. that they find it difficult to make the transfer to T.O. In any case, it seems that the i.t.a. must be used long enough for it to achieve what it is intended to achieve, namely, to ease the earlier stages of learning to read, to give the learner a measure of confidence, and help him to develop a favourable attitude to reading through the enjoyment of it, before he is confronted with the relative difficulty of T.O. When all the virtues and limitations of the i.t.a. have been discovered, however, the abilities and efforts of the teacher herself would of course still be very important, for, as

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1. Neale, M.D. Ibidem pp. 141-142

Morgan and Procter[1] have pointed out, the tool cannot be better than the workman who uses it; the i.t.a. being only a medium through which the teacher can 'make things come to pass'.

Harrison[2] who evaluated the progress made through the Janet and John series by the i.t.a. children in Oldham in the first six terms of the British experiment (1961-63) reported that the children progressed more rapidly, had greater confidence, and read more. He also reported several cases of remarkable success achieved with the i.t.a. in Remedial Reading. A group of non-readers at a Junior school in Walsall was reported to have benefited greatly from the use of the i.t.a., and it is said they developed confidence, interest, good reading habits and ability for independent attack on words. At various schools in Oldham too, various groups of non-readers were reported to have gained considerably after they had been taught to read in i.t.a.; while adult non-readers also made rapid progress with it, and groups of children in secondary modern school were helped by the i.t.a. From his own survey of the effectiveness of the i.t.a. in special schools, however, Labon[3] found that the T.O. group made significantly greater

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1. Morgan, A.H., & Procter, M., apud Downing (1967a) pp. 132-138
2. Harrison, M. (1964) Instant Reading. The Story of i.t.a. London. Pitman Press.
3. Labon, Donald: The Initial Teaching Alphabet: A survey of its Effectiveness in special schools. Abstract in Bulletin of the British Psychological Society. Vol. 19 No. 63, p. A23.

progress than the i.t.a. group, and the incidence of children who remained almost non-readers in the i.t.a. group was almost four times that in the T.O. group. This seems to underline two elements in the use of any medium. These are:

1. The methods and ability of the teacher, and
2. The abilities of the children themselves.

It is safe to assume that the i.t.a. is not a medium that will achieve all things for all people. Indeed, Swales[1] has indicated that intelligence is important in reading achievement. He found that the effectiveness of i.t.a. was neither superior nor inferior in the teaching of bright, dull, or average children, but that when intelligence was held constant, there emerged significant variations between schools, indicating the importance of some factor such as better teaching.

These are points requiring further investigation.

The i.t.a. has also been used extensively in the U.S.A. where it is referred to as the i/t/a. Mazurkiewicz[2] of Lehigh University has been responsible for an experiment in which the 'Early to Read - i/t/a Program[3] was used at Bethelehem, Penn-

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1. Swales, Terence D. (1966) The Attainments in Reading and Spelling of children who learned to read through the i.t.a. Unp. M.ED. Thesis. Manchester 1966, Abstract in B. J. E. P. Volume 37, 1967, pp. 126-127.
2. Mazurkiewicz, Albert J. (1964) Teaching Reading in America Using the Initial Teaching Alphabet. Elementary English. Vol. 41, pp. 766-772
3. Prepared by Mazurkiewicz, A.J. & Tanyzer, H.M.

sylvania. In this Program, the early teaching of phonics is encouraged, unlike the British experiment in which the teachers were advised to stick to their own preferred methods of teaching reading. It has also been confirmed here that the i.t.a. is an invaluable aid in the early stages of teaching reading. In Australia and other places, the i.t.a. has been used in teaching reading, and recently Sir James Pitman has designed one form for the teaching of French.

The values of the i.t.a., relative to those of T.O., as a medium for introducing reading to native speakers of the English language, have thus been demonstrated. But the evidence is by no means complete, for there are still many aspects requiring further investigation. Its values and limitations as an initial teaching medium in situations where English is used as a second language deserve careful study. This report is primarily concerned with such an investigation into the use of one form of the i.t.a. as described in the succeeding chapters.

CHAPTER IV

DESIGN OF THE EXPERIMENT

A. ORIGINS OF THE EXPERIMENT

Downing[1] felt that the i.t.a. might be a useful tool for teaching English to those whose native language is not English because of its comparative phonic consistency. Enumerating the possible areas of research with the new medium, he remarked, "..... I.T.A.'s potentialities for teaching English in newly emerging countries such as Nigeria and Ghana should be tested at an early date." He apparently thought it might help in solving some of the problems normally associated with English teaching in such countries. It was therefore in appreciation of the advantages which the i.t.a. might have in the teaching of English as a second language that a decision was taken at the Commonwealth Education Conference held at Ottawa, Canada, in 1964 to investigate the potentialities of i.t.a. as a medium for the teaching of English in Commonwealth countries in Africa. Funds for conducting such an investigation in Nigeria became available when, on the request of Sir James Pitman, the British Ministry of Overseas Development made a grant in 1965 for that purpose.

A modified form of the i.t.a. known as World Initial Teaching Alphabet - w.i t.a. - was designed by Sir James Pitman as being especially suitable for use in second language teaching

1. Downing, John A. (1964) The i.t.a. Reading Experiment. London, Evans Brothers. p. 53

This form of the i.t.a., already described in Section D (iii) of the second chapter, was used in the experiment in Nigeria. The selection of schools and contact with their headteachers, preparation of materials, and other administrative arrangements were made in 1965. The experiment was based at the Institute of Education of the University of Ibadan, and directed by the author under the general supervision of Professor A. Taylor who was Director of the Institute of Education. It was launched at the opening of the school year in January, 1966.

B. AIMS OF THE EXPERIMENT:

The aims of the experiment, as already stated in a different context[1] are as follows:

1. To compare 'World i.t.a. and T.O. (Traditional Orthography) in their effectiveness as means of teaching reading and other language skills such as comprehension, pronunciation, stress patterns, spelling, written English, and reading speed.

2. To detect and define any difficulties met in transferring to Traditional Orthography - T.O.

3. To establish and define difficulties met by teachers in using 'World i.t.a.'

4. To evaluate any relative influences of intellectual ability on progress in learning to read through 'World i.t.a.' and T.O.

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1. Abiri, J.O.O. (1966) An Experimental Use of Pitman's 'World i.t.a.' in the Teaching of English as a Second Language. (Paper presented at the Third International I.T.A. Conference, Cambridge, in July 1966 and subsequently published in Spelling Progress Bulletin, December, 1966. pp. 11-14.

5. To evaluate the relative influences of parents' educational background and the linguistic and social environment on the children's progress in learning to read through 'World i.t.a.' and T.O.

6. To evaluate any influence of the learner's sex on progress in learning to read through 'World i.t.a.' as compared with T.O.

7. To evaluate the relative attitudes of children toward reading through 'World i.t.a.' and T.O., as well as the possible generalization of such attitudes to school.

8. To evaluate the transfer effects of 'World i.t.a.' on the learning of Yoruba and Arithmetic as compared with T.O.

9. To detect and define relative difficulties caused by learning Yoruba symbols at the same time as English through 'World i.t.a.' and T.O.

10. To determine the relationship between age and progress in learning English through 'World i.t.a.' as compared with T.O.

In the end, it was not possible to fulfil all these aims for various reasons stated later in this report.

C. SELECTION OF SCHOOLS:

(i) Ibadan Area:

The Western Nigeria Ministry of Education showed great reluctance in the allocation of schools for participation in the w.i.t.a. experiment despite the expressed Nigerian Government's desire to have the investigation first in Nigeria. Eight schools

were allocated at first, of which two were dropped becuase they were not easily accessible, and one becuase it suffered serious shortage of staff. But two others were later added as substitutes. There were therefore seven schools left for participation in the project in the Ibadan area. These schools were in the rural areas to the north of Ibadan. They were generally badly staffed, lacking some of the most basic equipment, and housed in buildings which very often had no doors or window shutters. The children, from predominantly illiterate peasant families, were mostly ill-clad and underfed, and often forced to be absent from school for long periods by attacks of guinea worm. The number of children thus available for participation in the project in the Ibadan area was much smaller than had been anticipated owing to the number and type of schools allocated by the Ministry of Education.

(ii) Lagos Area:

The Education Department of The Lagos City Council was more cooperative, and allocated sixteen classes in fourteen schools in the mainland area of Lagos, that is, Yaba and Ebute-Metta, for participation in the project. The schools here are much bigger, better staffed, and better equipped than those in the Ibadan area. Effective working periods tend to be shorter, however, as a result of the shift system whereby some pupils use the school rooms in the morning and others use them in the afternoon. Until very recently, it was the practice of the L.C.C. Education Department to supply textbooks free to teachers and

pupils. The schools however, tended to be over-crowded. Many adjacent class-rooms are thinly partitioned, and there is always disturbing noise around. The children come from urbanised families in most of which at least one parent is literate in English or one of the Nigerian languages.

(iii) Pupils:

In the Ibadan area, pupils in Primary classes One and Two were taken into the Experiment in January, 1966. Those entering school in Primary Class One in January, 1967 were also taken into the experiment. The pupils involved in this area are therefore in primary classes three, four, and five in the participating schools in 1969, numbering about four hundred in all.

Table 4.1. Classes Participating in the Experiment, Lagos and Ibadan: 1966 - 1969

YEAR	CLASS			
	IBADAN Area			LAGOS Area
	Group A	Group B	Group D	Group C
1966	Prim. Two	Prim. One	-	Inf. Class One
1967	" Three	" Two	Prim. One	" " Two
1968	" Four	" Three	" Two	Standard One
1969	" Five	" Four	"Three	" Two

In the Lagos area, only children entering school in Infant class One in January 1966 were taken into the experiment. They are currently (in 1969) in Standard Two. About seven hundred pupils were involved here at the beginning, but the number has dwindled considerably, mainly because of the movements of some parents outside Lagos following the Nigerian political crisis, as well as the normal population mobility.

Table 4.1 shows the classes in which the four groups of children involved in the experiment were in the years 1966 to 1969.

D. EXPERIMENTAL AND CONTROL GROUPS:

Each class involved in the experiment was allocated into either an experimental or a control group. The criteria applied in making the allocations were as follows:

1. The two groups should be matched as to location of schools and social background of the pupils.
2. The two groups should be matched as to the average intelligence score[1] of all the pupils in each group.
3. In the Ibadan area where participating schools are few, and three different year-groups were involved in each case, no school should have all the three year-groups involved as completely experimental or completely control and any classes already reading T.O. should be allocated in the control group. Each school should,

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1. As compared by means of the t-ratio: See Table 4.8.

however, have both experimental and control classes. Two arms of the participating class were involved in each of two schools in the Lagos area, so that there were both an experimental and a control group in each of these schools. When the only class involved in the experiment in one particular school was allocated as a control class, the teacher insisted she wanted it experimental. Since this did not result in any significant difference between experimental and control groups, the teacher's wish was granted. There were consequently nine experimental and seven control classes in the Lagos area.

The allocation into experimental and control groups resulted in the figures shown in Tables 4.2 and 4.3 in 1966.

Table 4.2: Distribution of Pupils in the Ibadan Area (i.e. Groups A and B) in 1966.

GROUP	Group A Primary Two, 1966			Group B Primary One, 1966		
	Boys	Girls	All	Boys	Girls	All
Experimental	62	25	87	90	43	133
Control	74	50	124	57	29	86
Totals	136	75	211	147	72	219

As numbers dwindled over the years, it became necessary to re-adjust the composition of the experimental and control groups being compared. In 1968 therefore, the experimental and control

classes were matched in pairs according to location, size of class, social background and average intellectual ability of the pupils then remaining in each class from the original sets. It was thus possible to obtain six pairs of matched classes in the Lagos area and three pairs in each of Primary classes Three and Four in Ibadan area.[1] Comparison of experimental and control groups thereafter was on the bases of both the original grouping and of the matched pairs.

Table 4.3: Distribution of Pupils in the Lagos Area (i.e. Group C) in 1966.

GROUP	GROUP C, Infant One, 1966		
	BOYS	GIRLS	ALL
Experimental	178	218	396
Control	161	125	286
TOTAL	339	343	682

Tables 4.4 to 4.7 show the allocation of each class into the experimental or the control group, as well as the class with which it was matched. All the schools involved in the Ibadan area were within the same six mile radius and located in rural farming communities. They were therefore regarded as homogeneous in background, so that the matching of classes here was based mainly on average intelligence and size of class.

As will be seen in Sections 'G' and 'H' of this chapter, the experimental groups read books printed in W.I.T.A. until they gained confidence and reasonable fluency in reading: then they

1. See Appendix XXVII for the data on which the matching was based.

Table 4.4.[1] Division of Group A* (Ref. Table 4.1) into Experimental and control Sub-groups, showing matched pairs in 1968 (Ibadan Area)

EXPERIMENTAL	CONTROL
Matched Groups	
1. Ebenezer, Akingbile	2. Islamic, Moniya
3. H. L. A., Ojo	4. St. Matthias, Orogun
5. Methodist, Ojo	6. St. Peter's, Apete
Unmatched	
	7. St. Luke's, Otun Agbakin

* Primary Two (1966), Three (1967), Four (1968), Five ('69)

Table 4.5. Division of Group B** (Ref. Table 4.1) into Experimental & Control sub-groups, showing matched pairs in 1968 (Ibadan Area)

EXPERIMENTAL	CONTROL
Matched Groups	
8. H. L. A., Ojo	9. Methodist, Ojo
10. Islamic, Moniya	11. Ebenezer, Akingbile
12. St. Matthias, Orogun	13. St. Luke's, Otun Agbakin
Unmatched	
14. St. Peter's, Apete	

**. Primary One (1966), Two (1967), Three (1968), Four (1969)

changed to books printed in T.O. The control groups, on the other hand, read the same books, but printed in T.O., all the time.

Tests were conducted, both at the beginning to establish that the groups were equally matched in ability, and at intervals

1. H.L.A. in this and subsequent Tables means The Hizbul-Lahi Algalib Mission

Table 4.6[1]: Division of Group C* (Ref. Table 4.1) into Experimental and Control sub-groups, showing matched pairs of classes in 1968 (Lagos Area).

EXPERIMENTAL	CONTROL
Matched Groups	
22. St. Jude's, Eb. (W.I.T.A.)	23. St. Jude's, Eb. (T.O.)
24. L.C.C., Ijero, Eb.	25. U.A.M.C., Eleja, Eb.
26. L.C.C., Igbobi, (A)	27. L.C.C., Igbobi (B)
28. Methodist, Yaba	29. Ladi-Lak, Yaba
30. African Church, Eb.	31. Salvation Army, Eb.
32. All Saints, Yaba	33. S.D.A., Abule-Oja, Yaba
Unmatched	
34. Reagan, Yaba (All Girls)	37. Ansar-Ud-Deen, Eb.
35. St. Patricks, Yaba (All Boys)	
36. Our Lady, Yaba, (All Girls)	

* Infant One (1966), Infant Two (1967), Standard One (1968), Two (1969)

Table 4.7: Distribution of Group D** (Ref. Table 4.1) into Experimental and Control sub-groups, showing matched pairs of classes in 1968 (Ibadan Area).

EXPERIMENTAL	CONTROL
Matched Groups	
15. St. Luke's, Otun Agbakin	16. Methodist, Ojo
17. St. Matthias, Orogun	18. H.L.A., Ojo
Unmatched	
19. Islamic, Moniya	
20. St. Peter's, Apete	
21. Ebenezer Akingbile	

** Primary One (1967), Two (1968), Three (1969)

1. In this Table, L.C.C. = Lagos City Council; U.A.M.C. = United African Methodist Church; S.D.A. = The Seventh Day Adventist Mission.

during the course of the experiment to compare the progress made by the two groups. The 'preliminary tests' are discussed in section 'H' of this chapter while the other tests are discussed in succeeding chapters.

In comparing experimental (W.I.T.A.) and control (T.O.) groups later, the following hypotheses were proposed to be tested, on the assumption that w.i.t.a. would create no greater difficulties and would have no greater advantages than T.O. in the teaching of English reading and other skills, and that the w.i.t.a. group would have no difficulty in transfering to T.O.:

(i) The two groups would not differ in their rate of progress through the reading books.

(ii) They would not differ significantly in the amount of English words they can recognize.

(iii) They would not differ significantly in reading comprehension.

(iv) They would not differ significantly in the quality of their English pronunciation.

(v) They would not differ significantly in the number of words they can spell correctly.

(vi) They would not differ significantly in their attitudes to reading and school generally.

(vii) They would not differ significantly in their performance in other selected school subjects, namely, Yoruba and Arithmetic.

(viii) The influence, if any, of sex on performance would not differ significantly for the two groups.

(ix) The influence, if any, of intellectual ability, would not differ significantly for the two groups.

(x) The influence, if any of the social background of pupils on their performance would not differ significantly for the two groups.

(xi) The influence, if any, of age at which reading is started, would not differ significantly for the two groups.

(xii) The post-transfer performance of the experimental group would not differ significantly from their ante-transfer performance, relative to that of the control.

These have been expressed as 'null hypotheses' because of the statistical procedure used in making the comparisons.

E. TEACHERS AND THEIR TRAINING FOR THE PROJECT

Teachers involved in the Lagos area were mainly holders of the Grade II teachers' certificate with a few Grade III certificate holders, while those in the Ibadan area included a high proportion of Grade III certificate holders with a few Grade II and fewer untrained but experienced teachers. Attempts were made to ensure that participating teachers within each area were of comparable ability.

In order to familiarize the teachers with the aims, principles,

symbols and spelling system of w.i.t.a., and to give them a sense of involvement in the project, the heads or sub-heads of participating schools as well as the teachers of the classes involved were given a week-long course at the beginning. Those in the Ibadan area attended the course at the Olunloyo College of Education (later, Queen's School, and then Military Hospital) during the Christmas holidays in 1965, and those in the Lagos area attended the course at St. Jude's School, Ebute-Metta, early in the first school term in 1966.

Teachers of both exprimental and control classes attended the courses, and allocations to experimental and control classes were made later. This procedure was aimed at balancing the operation of the Hawthorne Effect. The teachers were very enthusiastic. A number of them, however, expressed fears that the use of the i.t.a. symbols would jeopardise accurate spelling in T.O. later.

A number of the teachers trained to teach w.i.t.a. either resigned their appointments or were transferrod. Because of such changes of staff, refresher courses were organized at intervals for teachers. The Missions and other authorities controlling the schools cooperated by arranging to replace teachers who had resigned or had been transferred with other suitably qualified teachers. One constant cause of difficulty, however, was teachers' going on maternity leave, and their relievers either did not take over their classes in good time or were, most usually, inadequately qualified, or both. In such

cases, regular visits, and the cooperation of the headteacher were necessary to ensure that the arrangement did not break down. There was one case where a participating class was distributed over the other non-participating arms of the same year-group before we intervened, because the class teacher was away for some time.

It may be observed that apart from skills gained in writing and reading i.t.a. symbols and transliterating from T.O. into w.i.t.a., the teachers derived other important benefits from the courses and other contacts with w.i.t.a. Their awareness of the separate phonemes of English and appropriate stress patterns was increased, and their pronunciation was improved. This is worthy of note because most primary school teachers in Nigeria, as observed in the first chapter, normally do not show sufficient skill in these aspects of English speech to serve as suitable models for their pupils. To that extent, the teachers of the T.O. classes became less like those who would ordinarily be teaching their classes in T.O.

Although methods of teaching reading were discussed and demonstration lessons given at the teachers' courses, teachers were not forced to adhere strictly to a particular method. But the free distribution of the Teachers' Books to the New Nation English (N.N.E.) Readers, which teachers were asked to follow,[1] together with regular visits to the classrooms promoted a uniformity of method which could not, however, be 100% guaranteed. The N.N.E. Readers are designed for teaching reading by the look-and-say, sentence-based approach, aided by copious repetition; but in this experiment the

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1. See Appendices xxi: (a) & (b), and xxii.

phonic analysis of words already known was recommended.[1]

F. READING AND OTHER MATERIALS:

To ensure that all the teachers and pupils involved possessed the necessary books, teachers' and pupils' books in English, Arithmetic and Yoruba were supplied free to all participating classes, that is, both experimental and control. The books supplied for English teaching were: The Key to New Nation English; to guide the teacher's teaching of Oral English, and the Teacher's Notes to the NNE Pre-Reader, Book One, Book Two and Book Three, respectively, as well as the pupils' NNE Pre-Reader, and Books One, Two and Three at the appropriate classes and times. The NNE Pre-Reader and Books One and Two printed in W.I.T.A. were supplied to the experimental classes, which also got Books Two and Three in T.O. after they had made the transfer. The control groups got the same books printed in T.O. The NNE wall charts were also supplied free to all participating classes.

For Arithmetic, the Oxford Arithmetic Course, Books One to Four were supplied together with the Teachers' Notes. These were not printed in w.i.t.a. because the earlier books which were used before transition to T.O., contained very few words, most of which, like add, count and subtract, would in fact not differ markedly if printed in w.i.t.a.

Books One, Two, Three and Four of the 'Alawiye' Readers were supplied free to all participating pupils in the appropriate classes for Yoruba Reading. This was to ensure uniformity as

1. See Appendix XXII on this.

far as possible and to ensure that no class suffered for lack of appropriate textbooks.

In addition to the fore-going, teachers of the experimental classes got books which would help them learn w.i.t.a. further and show them how to transliterate from T.O. to w.i.t.a. At appropriate times, too, NNE supplementary Readers were supplied in W.I.T.A. and T.O. to the experimental and control classes, respectively.

C. INSTRUCTIONAL PROCEDURE IN THE CLASSROOM AND TRANSITION FROM W.I.T.A. TO T.O.

The first introduction of the pupils to English teaching was through the oral exercises provided in 'The Key to New Nation English'.[1] After this, the children went on to use the Pre-Reader[2] printed in w.i.t.a. and T.O. for experimental and control groups respectively. Progress through the oral exercises outlined in these books took a lot more time than envisaged by the authors. The older pupils (i.e. Group A in Table 4.1) who were in Primary Class Two at the launching of the experiment in January 1966, started reading the 'NNE Book One'[3] during the

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1. Pattison, Bruce: The Key to New Nation English. London. Thomas Nelson.
2. Taylor, A.: The NNE Pre-Reader. London Thomas Nelson.
3. Taylor, A.; The NNE Book One. London. Thomas Nelson. T.O. Edition; and w.i.t.a. Edition published in collaboration with the i.t.a. Foundation.

final term of that year. But the younger ones (i.e. Groups B and C) who were in Primary or Infant Class One in 1966, did not start reading until the first term of 1967 when they were in Primary or Infant Two. Even then, they could not complete the oral exercises in the Pre-Reader before they started reading.

Reading was introduced by the look-and-say approach in which the children were required to recognize whole words.[1] All teachers however taught phonics sooner or later in relation to the sounds of the words read in the pupils' books. Progress through the books varied, as will be seen in the next chapter, so that grouping of pupils according to the progress made by them and the keeping of individual reading-progress cards were encouraged in both experimental and control classes.

The experimental pupils read books printed in w.i.t.a. until they had developed adequate reading skills. The criterion for their readiness for transfer to T.O. was fluent and confident reading of Book Two[2] in w.i.t.a. As progress through the books varied widely, not all the pupils in the same class were ready[3] for transfer at the same time. While some children made the transition after about twelve months of reading w.i.t.a., others did not do so until after about fifteen months. Even then, some of the slowest were still reading Book One when they transferred, because the teachers did not like keeping a few on w.i.t.a. when

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1. See Appendices XXI: (a), & (b), and XXII for the procedure used in teaching reading.
2. Taylor: New Nation English, Book Two; w.i.t.a. Edition.
3. This was decided by the teacher from the pupils' oral reading although he also considered indication of the understanding of what is read.

most of the pupils were already reading T.O. During the transition period some teachers in Lagos had a clever way of distinguishing between those who had transfered and those who had not. Those already reading T.O. used to say, "We are reading 'English'", while the others were said to be 'reading i.t.a.'.

The record of work in exprimental classes was roughly as follows:

Group A (Ibadan)

(Prim. II, 1966) 9 months, Oral English only - Jan. to Sept. '66

(" III, 1967) 12-15 months, Reading w.i.t.a. - Sept. '66 to Dec. '67.

(" IV, 1968) Transition - Sept. to December 1967.

(" V, 1969) All reading T.O. - January 1968

Group B (Ibadan)

(Prim. I, 1966) 12 months, Oral English only - Jan. to Dec. '66

(" II, 1967) 12-15 months, Reading w.i.t.a. - Jan. '67 to March '68

(" III, 1968) Transition - Jan. to March '68

(" IV, 1969) All reading T.O. - April '68

Group C (Lagos)

(Inf. I, 1966) 12 months Oral English only - Jan. to Dec. '66

(" II, 1967) 12-15 months, Reading w.i.t.a. Jan. '67 to March '68

(Std. I, 1968) Transition - Jan. to March '68

(" II, 1969) All Reading T.O. - April '68.

(Group D (Ibadan)

(Prim. I, 1967) 9-12 months, Oral English only - Jan. '67 to Sept. or Dec. '67

(" II, 1968) 12-15 months, Reading w.i.t.a. - A Sept. '67 or Jan. '68 to Dec. '68

(" III, 1969) Transition - Jan. to February '69

All reading T.O. - Feb. '69.

About twelve to fifteen months[1] of w.i.t.a. reading was therefore necessary, subsequent to the initial period of oral English exercises, only, before transition was made to T.O.

When children were ready to transfer to T.O., they were merely given the T.O. edition of the same book as they had just read in w.i.t.a. They usually kept the two editions of the book for some time before the w.i.t.a. edition was withdrawn completely. The teachers found the transition stage a taxing one, because they had to prepare work for different groups of children and to bear both the w.i.t.a. - and the T.O. - reading pupils in mind, especially in their blackboard work. For this reason, most of them preferred that the whole class be changed over at the same time although this was impracticable, for it would have meant either holding the faster ones back unduly or requiring the slower ones to change before they were anywhere near being ready. As it happened, however, the slowest pupils in some classes still had to change over before they had read the whole of Book One in w.i.t.a. It was found necessary to supervise some teachers

1. This included the usual holiday periods which may be about thirteen weeks (or three months) per annum.

more regularly to prevent them from rushing all pupils into reading T.O. at the same time.

H. THE PRELIMINARY TESTS

During the first term of 1966, four different kinds of tests were conducted in the participating schools. These were (i) a test of intelligence, (ii) a number test, (iii) a Yoruba Reading Test, and (iv) an English Reading Test. The main aim of conducting these tests was to ensure that pupils allocated into experimental and control groups did not differ markedly in their abilities. The tests are discussed briefly in the remaining parts of this section.

(i) The Tests of Intelligence:

An adapted[1] form of the individual tests of intelligence[2] developed by E.T. Abiola[3] was used. The tests were in four different groups testing four types of intellectual activity; viz. Learning, Perception, Conceptualization, and Problem Solving. Each group of tests was also given in two different forms, that is, the verbal tests and the sensori-motor or performance tests. The tests and the scoring system used are included as appendices Ia and Ib.

Responses on the tests were quantified and total scores were expressed as standard scores with a Mean of 50 and standard Deviation of 10.

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1. This involved merely reducing the test to half its length to save testing time. New Standard Scores were therefore prepared as shown in Appendices XXIV and XXV.
2. See Appendices Ia, b, & c.
3. Formerly Research Fellow at the Institute of Education of the University of Ibadan.

Table 4.8: Scores on the Tests of Intelligence (1966).

GROUP		Experimental			Control			Z for Diff.	
		Mean	s.d.	N	Mean	s.d.	N		
A	Boys	51.92	8.82	62	49.19	9.18	74	1.750	N.S.
	Girls	52.44	7.39	25	51.98	8.09	50	0.241	N.S.
	All	51.99	8.69	87.	50.32	8.86	124	1.358	N.S.
B	Girls	56.83	8.85	90	55.53	11.78	57	0.710	N.S.
	Boys	55.82	8.66	43	53.83	9.58	29	0.884	N.S.
	All	56.50	8.81	133	54.96	10.89	86	1.092	N.S.
C	Boys	47.54	9.31	178	47.26	9.06	161	0.280	N.S.
	Girls	47.20	8.27	218	46.79	7.81	125	0.461	N.S.
	All	47.35	8.77	396	47.05	8.47	286	0.455	N.S.

N.S. = Difference Not Statistically Significant.

The average scores obtained for the w.i.t.a. and T.O. groups are as shown in Table 4.8. All the differences obtained are too slight to reach statistical significance at the .05 level. The experimental and control groups in each set were therefore reasonably matched in intellectual ability.

(ii) The Number Test:

A number test for young children devised by Professor Taylor[1] was applied to assess the numerical ability of the children. This test, individually administered, consisted of rote counting, serial counting of objects, counting by tens, selection of specified numbers of objects up to ten, recognizing numbers of groups of objects up to ten, and solving simple numerical problems involving adding to or taking from specified numbers of objects, with maximum not more than ten. The responses obtained were quantified according to a system devised by the author, so that maximum possible score was hundred. The Mean

1. See Appendix II; a & b.

Scores and standard deviations were then calculated for each group as shown in Table 4.9.

Table 4.9: Scores on the Preliminary Number Test (1966)

GROUP	Experimental			Control			t for Diff.	
	Mean	s.d.	N	Mean	s.d.	N		
A	87.0	16.4	60	86.9	16.7	70	0.034	N.S.
B	48.7	28.5	99	48.9	28.8	50	-0.040	N.S.
C	37.0	25.4	395	37.6	25.1	282	-0.408	N.S.

N.S. = Difference Not Statistically Significant.

According to the scores shown in Table 4.9, the Primary II (1966) pupils were the most homogeneous in the number skills required in this test, as shown by their comparatively low standard deviation. Their high mean score also indicated that they had almost mastered all the number skills called for in the test. No significant differences were obtained between the scores of the w.i.t.a. and T.O. groups. The lower score of the Infant I (Lagos) pupils is probably accountable to the lower age level, because children entered school at 6+ in Ibadan but at 5+ in Lagos.

(iii) The Yoruba Reading Test:

A Yoruba reading test, consisting of 110 significant words arranged in short sentences to be read individually by children

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1. See Appendix III.

Table 4.10. Performance on the Preliminary Yoruba Reading Test (1966)

GROUP	Experimental (w.i.t.a.)			Control (T.O.)		
	% Non-Readers	N	Av. No of words Read	% Non-Readers	N	Av. No of words Read
A, Prim. II Ib. '66	40.8%	49	14.94	39.4%	71	29.3
B, " I " '66	85.4%	103	0.76	97.5%	40	0.35
C, Inf. I Lag.'66	97.9%	386	0.12	95.2%	292	1.19

was devised by the writer. A large proportion of the beginners, both in Lagos and Ibadan, could not read at all, and the few of them who could read (i.e. 39 out of 834 tested) were able to read only a few words. Only 12 (i.e. 1.44%) who read more than five words could be said to have made a reasonable start. Those who were in their second year in school (i.e. Primary II), however, were able to read better, and only about 40% of them were complete non-readers. The average number of words read by those in the T.O. group was nearly twice the average number read by those in the w.i.t.a. group as shown in Table 4.10.

When ability to read more than five words in the test was applied as a criterion for having made a reasonable start in Yoruba reading, only about 38% of the Primary II pupils could be said to have made such a start (that is, after one year's schooling). This rate of reading failure was rather high. It

was also observed that boys performed better than girls in this test.

(iv) The English Reading Test

A word-reading test in English[1] devised by the writer, and consisting of 120 words arranged in 24 rows of five words each, was given to the pupils individually.

This test showed that a negligible number of pupils had made a start in English reading before they came to school. Of the 834 pupils tested among the beginners in the Lagos and Ibadan areas, only fifteen could read at all, and only two could read more than five words in the test. This means that approximately 98.2% of the pupils in this group could not read English at all when they came to school for the first time. Table 4.11 shows the comparative performances of the w.i.t.a. and T.O. groups.

Table 4.11 Performance on the Preliminary English Test (1966)

GROUP	Experimental (w,i.t.a.)			Control T.O.		
	% Non-Readers	N	Av. No. of Words Read	% Non-Readers	N	Av. No of words Read
A, Prim II Ib. '66	93.9%	49	0.7	68%	72	3.01
B, " I" "	99.3%	103	0.03	97.5%	40	0.08
C, Inf. I Lag.'66	98.96%	386	0.03	96.93%	293	0.13

1. See Appendix IV.

Among the pupils who had already spent one full year in school (i.e. Prim. II 1966), 81% could not read English at all, and only about 8% (i.e. 11 out of 137 tested) could read more than five words. Only these could be said to have made a reasonable start in reading. A greater proportion of the T.O. than of the w.i.t.a. group could read English because of the deliberate policy[1] to allocate the two classes in which the children had made some appreciable start in reading English as T.O. groups. While 93.9% of the w.i.t.a. group were non-readers, only 68% of the T.O. group could be so described. Very few words were read, however, by those who could read because the average number of words read was 3.01 for the T.O. group and 0.7 for the w.i.t.a. group. The T.O. group nevertheless had an initial advantage over the w.i.t.a. group in English reading; i.e. among Group A pupils.

As was observed in the case of Yoruba reading, the boys performed better than the girls in this test.

1. SUMMARY:

The experiment was designed as a longitudinal study allowing for the observation of both an experimental group which would transfer to reading T.O. after an initial period of reading w.i.t.a. and a control group which would read T.O. all the time. The supply of books and other materials and regular supervision ensured some comparability of instructional procedures, just as initial testing helped to compare pupils' abilities

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1. This was done to avoid confusing those who had started reading T.O. See Criterion 3 in section D (p. 146) on this.

and ascertain levels of achievement. Observation over a three-year period of three different sets of children was planned. Progress was regularly assessed to provide bases for the comparison of the experimental and control groups, as described in succeeding chapters.

CHAPTER V

RESULTS - I : BEFORE TRANSITION TO T.O.

A. PERIODIC TESTS AND ASSESSMENTS

Pupils' progress in the first two years of the experiment, that is, before the experimental groups made the transition to T.O., was assessed by means of tests conducted in November 1966 and June 1967, as well as through teachers' reports in December 1967. The results obtained from both the tests and the teachers' reports are described in this chapter while description of results obtained after transition to T.O. will be found in the sixth and seventh chapters.

In November 1966, those in Group A, that is Primary II (1966) pupils in Ibadan area, were tested in English Reading, Oral English, Yoruba Reading, and Arithmetic. The Yoruba and English reading tests[1] used were those constructed by the writer and previously used in the preliminary testing earlier in 1966. The English Reading Test was in w.i.t.a. for the experimental and in T.O. for the control groups. Tests of Oral English and Arithmetic[2] were also constructed by the writer. The pupils in Primary I (1966) in Ibadan and Infant Class I (1966) in Lagos, that is Groups B and C, respectively, who had just spent one year in school were not tested in English reading because they had not done any reading in English till November 1966. But they were

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1. See Appendices III & IV for the Yoruba and English Reading Tests, respectively - used in November 1966.
2. See Appendices V & VI, respectively, for the Oral English and Arithmetic Tests used for Primary II in November 1966.

tested in Oral English, Arithmetic and Yoruba Reading. The Yoruba reading and Oral English tests were the same as those used for Primary II (1966) pupils, but a different Arithmetic test[1] was constructed by the author for the first year (i.e. Primary and Infant I) pupils.

In June 1967, tests were also conducted to assess progress made by all groups in English and Yoruba reading, Oral English, and Arithmetic. As before, the English reading tests[2] were in w.i.t.a. for experimental and T.O. for control groups, and they consisted of passages to be read from the pupils' reading books. The Yoruba reading tests[3] were also selected passages to be read from the pupils' reading books, while the Arithmetic tests[4] were pencil and paper tests constructed by the writer. Scores on the English reading test were based on the number of significant words read (orally) correctly and sentences read fluently, while scores on the Yoruba reading test were based on oral reading and comprehension, assessed by means of oral questions on the passage. The Oral English tests[5] formed part of, and immediately followed the English reading tests. The quality

1. See Apendix VII for the Arithmetic Test for Primary and Infant I - November 1966.
2. For the English reading and Oral English tests used in June 1967, see Appendix VIII for Primary and Infant II; and Appendix IX for Primary III.
3. See Appendices Xand XI for the Yoruba reading tests used for Primaries II and III, respectively, in June 1967.
4. See Appendices XII and XIII for the Arithmetic tests used in June 1967 for Primaries II and III respectively.
5. These are shown on the English reading tests: See Appendices VIII and IX.

of each pupil's pronunciation[1], including intonation, was also broadly assessed by the testers in one of six categories, viz: Very Poor, Poor, Fair, Good, Very Good, or Excellent, according to the pupil's performance both in the reading test and in the conversation (i.e. the oral English test) that followed it.

In December 1967, the teachers of all participating classes were given a form[2] on which they were requested to indicate the progress made up to date by each pupil through his English and Yoruba reading books, and an assessment of his attitude to English reading as well as the quality of his English pronunciation.

The tests and reports described above provided the basis for the comparison of experimental and control pupils' progress in each aspect of their work as will be seen in succeeding sections of this chapter.

B. ORAL ENGLISH

The scores obtained by experimental and control groups respectively, in the Oral English tests[3] conducted in November 1966 are as shown in Table 5.1. These scores, based on the pupils' ability to answer simple questions and make simple statements in English, indicate that whilst the control group of

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1. Received Pronunciation (R.P) was taken as the standard - see Section F of the nineth chapter.
2. See Appendix XIV (a) & (b)
3. See Appendix V.

Primary II (1966) pupils were significantly better in oral English than the experimental group, the experimental group of Primary I (1966) were better than the control. In the case of Infant I(1966) pupils in Lagos, although the score of the experimental group was higher, the difference fell short of significance at the 95% level. These results obtained on spoken English are

Table 5.1 Scores of the Experimental And Control Groups on the Oral English Test - November, 1966.

GROUP	'Experimental Group			Control Group			t for difference
	Mean	s.d.	N	Mean	s.d.	N	
'A' Prim. II 1966	44.60	9.66	76	54.20	8.70	118	-7.131**
'B' Prim. I 1966	53.0	5.40	98	49.0	5.44	73	4.80**
'C' Inf. I 1966	52.9	11.8	304	51.2	9.20	260	1.932

** Difference significant at the 99% level of confidence or more

very much like those obtained by the same groups in English reading later in June 1967, as will be seen in section C (iii) except that the experimental sub-group of Group C (Lagos) pupils were found to be significantly better than the control group in reading at the latter date. It seems that performance in oral English was closely related to performance in reading, and presumably better oral English attainments promoted better reading.

Differences obtained between experimental and control groups on Oral English and English reading may have arisen either from the medium of reading instruction (i.e. w.i.t.a. or T.O.) or from differences in the teaching efforts of the teachers or both. Systematic differences between schools may also have contributed to the obtained differences. For this reason, pairs of matched classes were compared on subsequent occasions.

C. ATTAINMENTS IN ENGLISH READING

(i) General Comments: It was observed that at the initial stages of learning to read w.i.t.a. print, pupils in the experimental classes had some difficulty with the i.t.a. symbols. In the first place, those who had learnt to read Yoruba tended to sound the i.t.a. symbols 'o' and 'e' (used in w.i.t.a. for the vowel sounds in 'got' and 'get', respectively) like the vowel sounds in 'go' and 'gate', respectively - by analogy to their sounds in Yoruba. Secondly, those who had learnt to recite and recognize the letters of the conventional English alphabet (that is, aA, bB, cC, dD .....zZ) before they started learning i.t.a. faced a special problem. With this group of pupils, a single written symbol might come to represent two or three different sounds. For instance, the symbol 'e' is named in T.O. like the vowel sound in 'heat', sounded in Yoruba like a shortened form of the vowel sound in 'gate', but named and sounded in i.t.a. like the vowel sound in 'get'. Such pupils also tended to see

the compound i.t.a. symbols - i.e, oe, oi, ue, and au - as combinations of the sounds usually represented in Yoruba by each component of the compound symbol.

On the other hand, as many as eighteen of the i.t.a. symbols are sounded exactly as they are in Yoruba, e.g. g, h, p, r, w. But these gave the experimental groups little advantage since most of these symbols usually represent in T.O. the same sound as they do in Yoruba, except that in some cases they also represent other sounds as well in T.O.

As soon as the pupils had learnt the i.t.a. symbols, however, they settled down and appeared to find the way in which the symbols functioned interesting and easy to follow. The teachers remarked that the i.t.a. symbols made it easier for their pupils to 'sound' words satisfactorily. The able pupils showed keen interest, and more pupils in the experimental than in the T.O. groups were reported to have read the NNE story books through within a short time.

(ii) Reliability of the English Reading Tests: Group A pupils who were tested in English reading in November 1966 were re-tested in February 1967, and a re-test coefficient of correlation of .87 was obtained, which indicated high reliability, considering the time elapsed between the first test and the re-test. Reliability of the June 1967 Reading Tests was also estimated by the re-test method. For Group A pupils, re-test correlation obtained by re-testing, after two days' interval, 88 out of 171 pupils originally tested was .95. For Groups B and C,

the re-test correlation obtained from re-testing, after an interval of two days in Ibadan schools but one day in Lagos schools, of 174 out of 785 pupils originally tested was .95; which indicates high reliability.

(iii) English Reading Test Results: The November 1966 test results indicated that the proportion of Group A (i.e. Primary II, 1966) pupils who could read little or nothing in the English Reading Test had fallen to 26% as compared with the 81% who had been unable to read in January. The scores obtained by each pupil on the English Reading Tests both in November 1966 and in June 1967, based on the number of words read orally and correctly (in 1966), but including reading fluency (in 1967), were converted (on each occasion) to standard scores with a mean of 50 and a standard deviation of 10, according to procedure recommended by Guilford.[1] The mean scores and standard deviations for experimental and control groups were then calculated. The results obtained for the three Groups of pupils in 1966 and 1967 are shown in Table 5.2. Comparison of experimental and control sub-groups' Mean scores by means of Fisher's t yielded the t-values shown in the last column of the Table.

This Table shows that while there was no significant difference between the experimental and the control sub-groups

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1. Guilford, J.P. (1956). Fundamental Statistics in Education and Psychology, N.Y. McGraw-Hill Book Company, pp. 495-497

of Group 'A' pupils in November 1966, when they had had only about three months of instruction in English reading, the control group had become significantly superior to the experimental group by June 1967.

Table 5.2. Scores of the experimental and Control groups on the English Reading Tests in November 1966 and June 1967

GROUP	Year	Experimental Group			Control Group			t for difference
		Mean	s.d.	N	Mean	s.d.	N	
'A'								
Prim. II 1966	1966	50.54	9.54	77	50.50	9.86	117	0.00
and III 1967	1967	48.73	10.62	73	54.01	9.61	98	3.372**
'B'								
Prim. I 1966	-	-	-	-	-	-	-	-
and II '67	1967	55.13	7.07	115	44.56	7.44	54	9.367**
'C'								
Infant I 1966	1966	-	-	-	-	-	-	-
" II 1967	1967	52.52	10.68	344	50.15	9.23	272	2.803**

** Difference significant at the 99% level of confidence or more

In the case of Groups B and C pupils, however, it was found, according to the t values shown in Table 5.2 that the experimental sub-groups were superior to their control counterparts in English reading when tested in June 1967, although there had been no differences between these sub-groups in their initial reading attainments as previously shown in Tables 4.10 and 4.11.

It may be concluded, therefore, that according to the

June 1967 tests, those pupils who had been learning to read English through w.i.t.a. in Groups B and C (i.e. Primary II in Ibadan and Infant II in Lagos) were superior in word recognition and reading fluency in w.i.t.a. than those who had been learning through T.O. were in reading T.O.; but the reverse was the case for Group A (i.e. Primary III) pupils. Teachers' reports on the progress made by their pupils through their reading books up to December 1967 confirmed this conclusion, as will be seen below.

(iv) Progress through the Reading Books - to December,'67

For the purpose of summarising the progress made by pupils through their reading books as reported by their teachers, the New Nation English (NNE) Books One and Two were divided into 15-page intervals and the number of pupils reported to be reading within each interval was recorded for experimental and control groups separately. Table 5.3 gives a summary of the progress made.

As shown in the first two columns of Table 5.3, the control group of Primary III (1967) pupils had made better progress through the reading books than the experimental group. For while 90% of the former were reading NNE Book Two, 86.5% of the latter were doing so; and, what is more significant, while 33% of the control group were reading beyond page 90 of Book Two, only 9% of the experimental group had reached a similar level. It is remarkable, however, that while 7% of the control group were listed as non-readers, none of the experimental group were so listed. This probably indicated that w.i.t.a. helped the slower ones in the experimental group.

Table 5.3 Progress through the NNE Readers by Experimental and Control groups up to December, 1967

Stage reached in the NNE Readers	Proportion of Primary III (Ibadan)		Proportion of Primary II (Ibadan)		Proportion of Infant II (Lagos)	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
1. Non-Readers	0%	7%	2.3%	3.8%	4.5%	3.1%
2. Able to Read first page of Book One	100%	93%	97.7%	96.2%	95.5%	96.9%
3. Reading Beyond Page 15 of Book One	95%	93%	93%	71%	84%	80%
4. Reading Beyond Page 30 of Book One	89%	90%	78%	34%	72%	61%
5. Finished Book One, now on Book Two	86.5%	90%	57%	-	56%	30%
6. Reading Beyond Page 15 of Book Two	61.5%	79%	35%	-	35%	5%
7. Reading Beyond Page 90 of Book Two	9%	33%	-	-	5%	-
NUMBER (BOYS	28	38	38	28	188	126
NUMBER (GIRLS	56	66	82	51	149	162
NUMBER (TOTAL	78	104	120	79	337	288

In the case of Primary Two pupils in Ibadan and Infant Two pupils in Lagos, the experimental groups obviously made better

progress than the control groups, as may be seen in Table 5.2. While 57% of the experimental group of Primary II were already reading Book Two none of their control counterparts were doing so yet, and whilst 56% of the experimental group in Lagos were reading Book Two (35% being beyond page 15), only 30% of the control group were doing so, and only 5% of them were reading beyond page 15.

The teachers' reports on the progress made through the reading books by their pupils thus confirmed the results previously obtained on the June 1967 tests, as already described above, to the effect that the control group of Primary III (1967) pupils in Ibadan made better progress in English reading than their experimental counterparts, while the experimental groups of Primary II (1967) pupils in Ibadan, and Infant II (1967) pupils in Lagos made better progress than their control counterparts.

This suggests that w.i.t.a. helped pupils who started the programme in their first year in school to perform better than their peers who learnt to read through T.O., whereas it did not seem to have so helped those who started the programme in their second year in school.

D. QUALITY OF ENGLISH PRONUNCIATION[1]

When English reading was assessed in June 1967, the testers also broadly assessed the quality of the pupils' pronunciation

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1. See discussion of the question of a suitable model of English pronunciation in Nigeria in Section F of the nineth chapter.

(including rhythm and intonation) according to their performances both in the reading test and in the oral English test that followed it. The class teachers also assessed their own pupils' pronunciation in December 1967 on the basis of their knowledge of each pupil's attainments. The results obtained on the June 1967 tests are shown in Tables 5.4, 5.6, and 5.8 for Groups A, B, and C, respectively, while the results obtained from the teachers' assessments in December 1967 are shown in Tables 5.5, 5.7 and 5.9.

Table 5.4 Distribution of Group A (Primary III, 1967) Pupils according to quality of English Pronunciation - June '67 Test

Groups	Excellent to Good*	Fair	Poor	Very Poor	TOTALS
Exp.	11 (11)**	12 (16)	18 (14)	11 (11)	52
Cont.	16 (16)	26 (22)	15 (19)	15 (15)	72
TOTALS	27	38	33	26	124
%					
Exp.	21%	23%	35%	21%	100%
Cont.	22%	36%	21%	21%	100%

chi-squared = 3.172; d.f. = 3; Not significant

* The three upper categories were combined to avoid low expected frequencies.

** The figures shown in parentheses in this Table and subsequent ones up to and including Table 5.11 indicate the 'expected' frequencies.

As may be observed from Table 5.4, the experimental and control sub-groups of Group A pupils were not significantly different although the control group was slightly better; because the

largest proportion (36%) of the control group was rated as 'Fair', while the largest proportion (35%) of the experimental group was rated as 'Poor'. The non-significant difference between the experimental and control groups in this class of pupils in English pronunciation was confirmed by the teachers' reports in December 1967 as shown in Table 5.5.

Table 5.5. Distribution of Group A pupils according to quality of English Pronunciation - Teachers' Assessments, Dec.'67

Groups	Very Good	Good	Fair	Poor	Very Poor	TOTALS
Experiment	20 (22.3)	12 (13.3)	25 (24)	19 (13.3)	2 (5.1)	78
Control	32	19	31	12	10	104
TOTALS	52	31	56	31	12	182
%						
Experiment	25.6%	15.4%	32.0%	24.4%	2.6%	100%
Control	30.8%	18.2%	29.8%	11.5%	9.6%	100%

Chi-squared = 8.266; d.f. = 4; Probability is greater than 5%; NO SIGNIFICANT DIFFERENCE.

According to the results obtained on the June 1967 test, the experimental sub-group of Group B (i.e. Primary II 9 1967) pupils in Ibadan was superior in English pronunciation to the control sub-group, as shown in Table 5.6. While 47.7% of the former were rated in the top categories i.e. Excellent to Good, only 22% of

the latter were so rated. This result was obtained when one class in the control sub-group, which had done very little reading in English before the test, was excluded from the analysis. When the pupils (in Group B) were assessed by their teachers later in the year, however, there was no significant difference between experimental and control groups in pronunciation as shown in Table 5.7.

Table 5.6 Distribution of Group B (Primary II, 1967) Pupils according to quality of English Pronunciation - June 1967

Test

Groups	Excellent to Good*	Fair	Poor	Very Poor	TOTALS
Experiment	41 (33)	22 (22)	17 (20)	6 (11)	86
Control	12 (20)	14 (14)	16 (13)	12 (7)	54
TOTALS	53	36	33	18	140
%					
Experiment	47.7%	25.6%	19.8%	7%	100.1%
Control	22%	26%	30%	22%	100%

Chi-squared = 12.125; d.f. = 3, Significant at the 99% level. Experimental group is superior.

* The three upper categories were combined to avoid low expected frequencies.

Similarly, in the case of Group C (i.e. Infant II 1967) pupils in Lagos, although the experimental sub-group was rated as significantly better than the control sub-group in the June

Table 5.7 Distribution of Group B pupils according to quality of English Pronunciation - Teachers' Assessments, Dec. 1967

Groups	Very Good	Good	Fair	Poor	Very Poor	TOTALS
Experiment	21 (25.3)	21 (25.3)	59 (49.5)	15 (15.7)	4 (4.2)	120
Control	21 (16.7)	21 (16.7)	23 (32.5)	11 (10.3)	3 (2.8)	79
TOTALS	42	42	82	26	7	199
%						
Experiment	17.5%	17.5%	49.2%	12.5%	3.3%	100%
Control	26.6%	26.6%	29.1%	13.9%	3.8%	100%

Chi-squared = 8.379; d.f. = 4, Probability is greater than 5%.
NO SIGNIFICANT DIFFERENCE.

Table 5.8 Distribution of Group C (Infant II, 1967) Pupils according to quality of English Pronunciation - June, 1967 Test

Group	Excellent	Very Good	Good	Fair.	Poor	V. Poor	TOTAL
Exp.	74 (52)	55 (47.4)	31 (35)	66 (74)	49 (55.4)	35 (45.8)	310
Cont.	24 (46)	34 (41.6)	35 (31)	73 (65)	55 (48.6)	51 (40.2)	272
TOTALS	98	89	66	139	104	86	582
%							
Exp.	23.9%	17.7%	10%	21.3%	15.8%	11.3%	100%
Cont.	8.8%	12.5%	12.9%	26.8%	20.2%	18.8%	100%

Chi-squared = 27.392; d.f. = 5; Significant at the 99% level.
Experimental group is superior.

Table 5.9. Distribution of Group C Pupils according to quality of English Pronunciation - Teachers' Assessments, Dec. '67.

Groups	Very Good	Good	Fair	Poor	V. Poor	TOTALS
Exp.	66 (61.1)	78 (86.8)	116 (117.2)	58 (49.6)	19 (22.1)	337
Cont.	48 (52.9)	83 (74.2)	101 (99.8)	34 (42.4)	22 (18.9)	288
TOTALS	114	161	217	92	41	625
%						
Exp.	19.6%	23.2%	34.4%	17.2%	5.6%	100%
Cont.	16.7%	28.8%	35.1%	11.8%	7.6%	100%

Chi-squared = 6.840; d.f. = 4; Probability is greater than 10%.
NO SIGNIFICANT DIFFERENCE

1967 test, as shown in Table 5.8, the teachers' assessments of their pupils' English pronunciation in December indicated that there was no significant difference between the two sub-groups, as shown in Table 5.9. In the June 1967 test, while 41.6% of the experimental group were rated as Excellent or Very Good in English pronunciation only 21.3% of the control group were so rated. On the other hand, while only 27.1% of the experimental group were rated as Poor or Very Poor, 39% of the control group were so rated. This indicates the superiority of the experimental group. But in the teachers' assessments later in the year, a slightly greater proportion of the control than of the experimental group was rated as Very Good or Good[1]. The difference however fell far short of statistical signi-

1. See Table 5.9.

ficance.

The teachers' assessments in December 1967 thus confirmed the results previously obtained in the case of Group A (i.e. Primary II 1967) pupils in June, but contradicted the results obtained for the other two Groups. Either a genuine change had occurred in the relative qualities of the English pronunciation of the experimental and control groups between June and December, or one of the assessments was unreliable. The June 1967 results were based on actual testing while the December ones were based on the teachers' general knowledge of the pupils' achievement. In the latter case, there might have been a 'halo' effect in the teachers' assessments of their pupils, so that reliability would be lower. There is also the possibility that teachers were taking into consideration only standards within their own schools in making their assessments, whereas in June 1967 there was a common reference point, viz. performance on the reading and oral tests. The teachers' assessments therefore probably could not be compared across schools. Tests conducted in 1968, however, confirmed the superiority of the experimental over the control groups in English pronunciation, as will be seen in the next chapter.

For the purposes of comparison, the June and December 1967 ratings of the experimental and control groups of pupils within the same schools in Lagos area are shown in Tables 5.10: (a) and (b) for S.J.E.* School and 5.11: (a) and (b) for L.C.C.I** School.

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* i.e. Saint Jude's, Ebute-Metta

** i.e. Lagos City Council, Igbobi, Yaba.

The theory was that even if the teachers took into consideration only standards within their own schools in assessing the quality of their pupils' English pronunciation in December 1967, the relative ratings of two classes within the same school on both occasions (i.e. in June and December 1967) should agree, provided the assessments on the two occasions were valid, unless of course, a genuine change had occurred during the interval in the relative attainments of the two classes. In other words, if the results obtained on the two occasions should differ, either one of the assessments had low validity or a genuine change had occurred during the interval.

Table 5.10 Quality of English Pronunciation of Experimental and Control groups at S.J.E. School:-

(a) According to June 1967 Test

Group	Excellent	Very Good and Good	Fair	Poor and Very Poor	TOTALS
Exp.	15 (9.4)	5 (8.9)	5 (2.9)	13 (11.8)	38
Cont.	4 (9.6)	13 (9.1)	11 (8.1)	11 (12.2)	39
TOTALS	19	18	16	24	77

Chi-squared = 12.288 ; d.f. = 3; Difference is significant at the 99% level of confidence. Experimental group is superior.

This comparison of the experimental and control classes within the same schools revealed that the experimental class was

(b) According to the Teachers' Report in Dec. 1967.

Group	Very Good	Good	Fair	Poor and Very Poor	TOTALS
Exp.	13 (6.5)	7 (6.5)	11 (13.9)	6 (10.2)	37
Cont.	1 (7.5)	7 (7.5)	19 (16.1)	16 (11.8)	43
TOTALS	14	14	30	22	80

Chi-squared = 16.556; d.f. = 3; Difference is significant at the 99% level of confidence. Superiority of the experimental group is confirmed.

Table 5.11. Quality of English Pronunciation of Experimental and Control groups at L.C.C.I. School:-

(a) According to June 1967 Test

Group	Expellent	V. Good	Good	Fair	Poor	V. Poor	TOTALS
Exp.	14 (7.4)	6 (5.4)	3 (6.4)	3 (5.4)	14 (11.9)	4 (7.4)	44
Cont.	1 (7.6)	5 (5.6)	10 (6.6)	8 (5.6)	10 (12.1)	11 (7.6)	45
TOTALS	15	11	13	11	24	15	89

Chi-squared = 21.221; d.f. = 5; Difference is significant at the 99% level of confidence. Experimental group is superior.

(b) According to the Teachers' Report in December 1967

Group	V. Good	Good	Fair	P. & V. Poor	TOTALS
Exp.	4 (6)	11 (10.5)	17 (15)	13 (13.5)	45
Cont.	8 (6)	10 (10.5)	13 (15)	14 (13.5)	45
TOTAL	12	21	30	27	90

Chi-squared = 2.153; d.f. = 3; Probability is greater than 30%. NO. SIGNIFICANT DIFFERENCE.

rated superior to the control class in one school both in June and in December, 1967. In the other school, however, the experimental class was rated as superior only in June, while there was no statistically significant difference between the two classes in December 1967. Thus, the relative ratings of the two classes on both occasions agree in the case of the former but not in the case of the latter school. Either one of the ratings (i.e. in June and December 1967) had low validity or a genuine change had occurred between June and December 1967 in such a way that the two classes in the latter school had become more homogeneous in the quality of their English pronunciation. That such a change did not occur, however, is indicated by the superior performance of the experimental class in this school in December 1968, as shown for classes Numbers 26 and 27 in Table 7.3. It may be concluded therefore that w.i.t.a. produced better pronunciation skills in English than T.O. did, although the teachers' report did not exactly confirm this. Further testing was considered necessary as described in Section C of the seventh chapter.

E. YORUBA READING

According to the results obtained on the November 1966 test in Yoruba, about 56% of Group B pupils in Ibadan and 44% of Group C pupils in Lagos could be said to have made a reasonable start in Yoruba reading in the first year. This represents a high rate of incidence of failure to read Yoruba in the first year. But when it is remembered that only about 38% of those starting the second year of the primary course in Ibadan area in January 1966, as discussed in Section G(iii) of the previous chapter, had been

judged as having made a reasonable start in Yoruba reading, the performance of these first-year (1966) pupils in Yoruba reading represented an improvement on that of their immediate predecessors.

Table 5.12. Scores on the Yoruba Reading Tests - November 1966 and June 1967

GROUP		Year	Experimental Gp. Mean	s.d.	N	Control Group Mean	s.d.	N	t for differenc
'A'									
Prim. II	1966	1966	49.5	5.69	77	50.9	5.70	115	1.67
III	1967	1967	51.7	8.44	74	52.81	10.2	97	0.724
'B'									
Prim. I	1966	1966	51.9	8.56	97	49.9	7.02	75	1.68
II	1967	1967	55.6	10.73	112	49.3	8.72	69	3.123**
'C'									
Infant I	1966	1966	52.3	10.4	305	51.3	9.81	230	1.142
II	1967	1967	49.95	9.31	337	48.7	8.34	235	1.531

** Significant at the 99% level.

Reliability of the Yoruba reading test was estimated by re-testing after an interval of two days in June 1967. Product-Moment coefficient of correlation between first test and re-test was .98 in the case of Group A, and .97 in the case of groups B and C. These indicate high reliability.

Comparison of the experimental and control groups of the three sets of pupils with respect to their attainments in Yoruba Reading, as indicated by their scores on the November 1966 and June 1967 tests[1], showed that there was a significant difference between

1. See Table 5.12.

the two groups in only one case. This significant difference was in favour of the experimental sub-group of Group B (i.e. Primary II 1967) pupils. It will be recalled that the same significant difference was recorded in English reading as already described. It will also be seen in the next section below that the same group was superior in Arithmetic. Since there were no such differences between the experimental and control sub-groups of the other Groups of pupils, it would seem that differences obtained in the case of Group B were contributed to by some factors other than the medium of instruction in English, such as differing teachers' efficiency.

F. ARITHMETIC

The scores obtained in the Arithmetic tests both in November 1966 and June 1967, and shown in Table 5.13, reveal that just as was observed in the Yoruba reading test, only the experimental group of Primary II (1967) pupils showed any significant difference from the control group.

In the light of the results obtained for groups A and C in Yoruba reading and Arithmetic it may be said that the differences obtained between experimental and control groups of these two sets of pupils in English reading were probably accountable to the medium of instruction in English reading (i.e. w.i.t.a. or T.O.), whereas the differences obtained in the case of Group B (i.e. Primary II 1967) were at least accentuated by other factors.

Table 5.13. Scores of the Experimental and Control Groups on the Arithmetic Tests - November 1966 and June, 1967.

GROUP	Year	Experimental Gr.			Control Group			t for diff.
		Mean	s.d.	N	Mean	s.d.	N	
'A'								
Prim II 1966	1966	50.0	10.66	75	50.9	10.17	117	0.59
III 1967	1967	51.9	6.51	74	53.6	7.41	97	-1.558
'B'								
Prim I 1966	1966	51.0	9.51	98	46.6	8.10	76	3.32**
II 1967	1967	57.4	9.61	115	47.1	10.53	75	6.918**
'C'								
InfantI 1966	1966	50.0	10.1	303	51.3	9.82	267	1.553
II 1967	1967	52.1	9.49	344	51.9	9.78	274	0.091

** Difference significant at the 99% level or more

G. SEX DIFFERENCES

For the purpose of comparing the performances of boys and girls within experimental and control groups, their mean scores and standard diviations on each of the tests conducted in June 1967 were calculated. Comparison of these Mean scores by means of the z-ratio, as shown in Tables 5.14, 5.15 and 5.16, indicated that the performances of boys and girls within each group did not differ significantly, except in a minority of cases.

That there were no consistent significant differences in favour of one sex-group is shown by the scores listed in Tables 5.14, to 5.16. Out of eighteen comparisons made between boys and girls within the same groups, only three significant differences

Table 5.14. Boys' and Girls' Scores on the English Reading Tests - June 1967

GROUP	BOYS			GIRLS			z for difference
	Mean	s.d.	N	Mean	s.d.	N	
'A'							
Exp.	49.54	10.62	52	46.71	10.35	21	1.029
Cont.	53.81	8.74	63	54.37	11.03	35	-0.241
'B'							
Exp.	55.27	6.64	78	54.78	7.88	37	0.325
Cont.	44.97	7.55	34	43.85	7.19	20	0.531
'C'							
Exp.	52.34	9.87	150	52.51	11.20	194	-0.149
Cont.	49.74	8.86	149	50.05	9.81	123	-0.270

Table 5.15. Boys' and Girls' Scores on the Yoruba Reading Tests - June, 1967

GROUP	BOYS			GIRLS			z for difference
	Mean	s.d.	N	Mean	s.d.	N	
'A'							
Exp.	51.39	8.17	52	52.59	8.99	22	-0.529
Control	53.18	9.45	62	52.16	11.43	35	0.362
'B'							
Exp.	57.27	11.13	75	53.15	9.83	37	1.971*
Control	49.91	9.45	44	48.10	7.11	25	0.883
'C'							
Exp.	49.96	9.35	149	50.81	9.26	188	-0.833
Control	47.55	7.56	129	50.10	8.98	106	-2.318*

* Difference significant at the 95% level of confidence

Table 5.16. Boys' and Girls' Scores on the Arithmetic Test - June, 1967

GROUP	BOYS			GIRLS			z for diff.
	Mean	s.d.	N	Mean	s.d.	N	
'A'							
Exp.	51.54	6.02	52	52.77	7.76	22	-0.651
Control	53.36	7.52	63	53.85	7.29	34	-0.306
'B'							
Exp.	58.86	8.77	77	55.63	10.44	38	1.623
Control	46.31	9.89	49	48.54	11.03	26	0.848
'C'							
Exp.	53.22	9.97	150	50.58	8.73	194	2.563*
Control	51.58	10.27	150	52.24	9.14	124	0.559

*Difference significant at the 95% level of confidence

were found. One of these differences indicated that the boys in the experimental classes of Group B were superior to the girls in Yoruba reading; another shows that the girls in the control classes of Group C were superior to the boys in Yoruba reading; while the third significant difference indicates that boys in the experimental classes of Group C were superior to the girls in Arithmetic. Thus, it cannot be said that either sex-group tended to be superior to the other in their attainments in any given subject, nor can it be said that either w.i.t.a. or T.O. consistently gave one sex-group appreciable advantages over the other. The few differences obtained appear to be chance diffe-

rences between boys' and girls' abilities in some subjects. This point is examined again in the test results obtained after the transition to T.O. as will be seen in the next chapter.

H. INFLUENCE OF INTELLECTUAL ABILITY

Coefficient of correlation between intellectual ability and English reading scores ranged from .12 to .38. Larger proportions of those in the higher intellectual levels (scoring above the median in the intelligence tests) were also high achievers in English reading. There was therefore some positive relationship between Intellectual ability and performance in English reading although the relationship was lower than that observed between Arithmetic and intellectual ability, for which correlations ranged between .14 and .60.

In order to find out whether there was any difference between the w.i.t.a. and T.O. sub-groups as regards the direction of this relationship between intellectual ability and progress in English reading, proportions of pupils in the high intellectual levels (scoring equal to or above the Median for each Group in tests of intelligence) who were also high achievers (scoring equal to or above the Group's Median) in English, were calculated for each sub-group. In the same way, proportions of those in the lower intellectual levels (scoring below Median) but who were high achievers in English, were calculated. Table 5.17 shows the obtained proportions.

It may be seen from Table 5.17 that among Infant Two pupils in Lagos and Primary Two pupils in Ibadan, greater proportions of pupils in the experimental than in the control sub-groups - 62%/56%; 77%/28% - who were in the higher intelligence category were also high achievers in English. Similarly, greater proportions of the experimental than control pupils (47%/42%; 76%/28%) who were classed in the lower intelligence category were high achievers in English. In other words, a greater proportion of the intelligent pupils in the experimental sub-group than in the control sub-group did well in English reading; while at the same time, the not-so-intelligent too did well more frequently among the experimental than among the control sub-group. Although in the case of the Lagos pupils, the difference between experimental and control sub-groups are not as great as they are among the Ibadan pupils, the proportions are still markedly in favour of the experimental sub-group. In the case of the Primary III pupils in Ibadan, however, proportions of both the more intelligent and the not-so-intelligent pupils who did well in English are remarkably greater in the control group than in the experimental group. This probably indicates that w.i.t.a. does not help if introduced late.

One curious fact observed is that relationships between intelligence scores on the one hand and performances in both English and Arithmetic on the other, were closer for Primary

Table 5.17: Relationship between Intelligence and scores in English Reading (June, 1967)

Description	'C' Infant Two Lagos		'B' Primary Two Ibadan		'A' Primary III Ibadan	
	Exp.	Cont.	Exp.	Cont.	Exp.	Cont.
Proportion with High Intelligence who were also High Achievers in English	62%	56%	77%	28%	43%	89%
Proportion with Lower Intelligence but being High Achievers in English	47%	42%	76%	28%	33%	46%

Three[1] pupils than they were for Primary Two[2] pupils. The reason for this is either that intelligence test scores obtained for the younger Group of pupils probably did not constitute a highly reliable index of their intellectual ability, or that w.i.t.a. helped the not-so-intelligent ones in this Group so well that the effects of the differences in intelligence on performance in English and Arithmetic were blurred to a great extent. But if the latter was the case, why did it not happen in the case of the older, i.e. Primary Three, pupils? It was probably too late for

1. For Primary Three, Eng/Int. r = .38 (n = 134); Arith/Int. r = .60 (n=135)
2. For Prim. Two Pupils (Ibadan), Eng/Int. r=.12 (n=115); Arith/Int. r = .14 (n = 114)

w.i.t.a. to help them after they had had some contact with T.O. It may also be that the teachers of the experimental sub-group of Primary Two pupils worked so hard that differences between the more intelligent and the not-so-intelligent pupils were considerably reduced when they were tested in English. This is difficult to decide but it would appear that the influences of w.i.t.a. and of teachers' differing efficiency were the most likely sources of the different results for the older and the younger pupils. In the case of Infant Two pupils[1] in Lagos, however, the obtained correlations are as significant as those obtained for Primary Three pupils, considering the difference in the sizes of the two samples.

I. TEACHERS' ASSESSMENT OF PUPILS' ATTITUDES

Tables 5.18, 5.19 and 5.20 are contingency tables showing the frequency distributions[2] of pupils according to their teacher's assessment of their attitudes to English reading in December 1967. These were based on the teacher's estimation of the pupils' affective reaction of liking or dislike for the subject.

There was no significant difference between the attitudes of experimental and control groups of Primary Two (Ibadan) and Infant Two (Lagos) pupils, as shown in Tables 5.18 and 5.19, for the chi-squared value obtained in each case falls short of significance at the 95% level of confidence. This suggests that the

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1. For Infant Two Pupils (Lagos), Eng/Int. r=.26 (n = 471); Arith/Int. r =.27 (n = 472)

2. Expected frequencies are shown in parentheses above the obtained frequencies in Tables 5.18 to 5.20, inclusive.

superior progress previously recorded for the experimental groups was not necessarily associated with more favourable attitude to English reading than that of their control counterparts. Table 5.20 however shows that the w.i.t.a. group of Primary Three (Ibadan) pupils had significantly more favourabe attitudes to English reading than the control group. While 94.9% of the experimental group were indicated as liking the subject either a little or very much, only 77% of the control group were so rated. The assessment of the attitudes of this class of pupils is therefore an antithesis of the relative reading achievements of the experi-

Table 5.18 Frequency Distribution of Group B, i.e. Primary Two (Ibadan) Pupils on Attitudes to English Reading (December 1967)

Group	Like very much	Like a little	Dislike a little	Dislike very much	Total
Exp.	69 (63.3)	30 (35.6)	10 (12.7)	11 (8.4)	120
Cont.	36 (41.7)	29 (23.4)	11 (8.3)	3 (5.6)	79
Total	105	59	21	14	199

Chi-squared = 6.944 d.f. =3. Probability of this value occurring by chance is greater than 5%. NO SIGNIFICANT DIFFERENCE.

mental and control groups. It seems to indicate that although the former group had made less progress than the latter, yet they had a more favourable attitude to English reading. This is puzzling

for if w.i.t.a. promoted significantly more favourable attitude to reading, why was a similar result not obtained in the case of the Primary Two (Ibadan) and Infant Two (Lagos) pupils who used w.i.t.a.?

Table 5.19 Frequency Distribution of Group C, i.e. Infant Two (Lagos) pupils on Attitudes to English Reading (Dec. '67)

Group	Like very much	Like a little	Dislike a little	Dislike very much	Total
Exp.	184 (181.2)	87 (97.6)	40 (35)	26 (23.2)	337
Cont.	152 (154.8)	94 (83.4)	25 (30)	17 (19.8)	288
Total	336	181	65	43	625

Chi-squared = 4.764 d.f. = 3. Probability of this value occurring by chance is greater than 20%. NO SIGNIFICANT DIFFERENCE.

Table 5.20 Frequency Distribution of Group A, i.e. Primary Three (Ibadan) pupils on Attitudes to English Reading (December, 1967)

Group	Like very much	Like a little	Dislike a little	Dislike very much	Total
Exp.	50 (39.9)	24 (26.1)	1 (6.9)	3 (5.1)	78
Cont.	43 (53.1)	37 (34.9)	15 (9.1)	9 (6.9)	104

Chi-squared = 15.148 d.f. = 3. Probability of this value occurring by chance is less than 1%. The two groups (experimental and control) are SIGNIFICANTLY DIFFERENT at the 99% level of confidence.

It may be either that the teachers' rating of their pupils'

attitudes was unreliable, or more likely, that some unidentified factor other than the medium of instruction promoted a more favourable attitude to English reading among the experimental sub-group of Primary Three pupils. One other possible explanation for the more favourable attitude of this sub-group is that w.i.t.a. probably had a novelty value for the pupils after their previous, though slight, contact with T.O., whereas it would not have such a novelty value for those in Groups B and C who had no contact with anything else. If that was the case, it might be that the interference from the previous contact with T.O. did not allow Group A pupils' more favourable attitudes to produce superior reading performance.

Considering the available information, it appears reasonable to conclude that attitudes to English reading were not consistently related either to the amount of progress made or to the medium of instruction used, i.e. w.i.t.a. or T.O., except in the case of the experimental sub-group of Primary Three (1967) pupils for whom w.i.t.a. probably had a novelty value after their previous contact with T.O., and this novelty value probably produced their more favourable attitude to English reading.

J. SUMMARY

Tests were conducted and class teachers were asked to report on the progress made by their pupils during the second year of the experiment (i.e. 1967). These provided the basis for

for the comparison of experimental and control groups.

It was found that among the younger pupils - i.e. primary Two (1967) in Ibadan and Infant Two (1967) in Lagos - the experimental groups had made greater progress in English reading than their control counterparts. The former also had superior scores in the English reading test, and the quality of their English Pronunciation was rated as significantly better than that of their control counterparts - although this was not confirmed by the teachers' later reports on individual pupils in their classes. The attitudes of the experimental and control groups to English reading as reported by the teachers did not differ markedly.

In the case of the Primary Three (1967) pupils in Ibadan the control group was superior to the experimental group in English reading, made faster progress through the reading books, and had better English pronunciation; but there was no significant difference between the two groups in Yoruba reading and Arithmetic, although the experimental group had more favourable attitude to English reading.

The experimental and control groups of Infant Two (1967) pupils in Lagos did not differ markedly in Yoruba reading and Arithmetic; whereas the experimental group of Primary Two (1967) pupils in Ibadan performed better in these two subjects, as they did in English reading, than the control group. Attitudes to English reading appeared to be unrelated to the medium of instruction (i.e. w.i.t.a. or T.O.) in English, as far as these two

groups were concerned.

There was low but positive relationship between intellectual ability and performance in English. This relationship was closer for the older (i.e. Primary Three) pupils than for the younger (i.e. Infant and Primary Two) ones. It seemed that w.i.t.a. had helped both the more and the less intelligent among the younger pupils to attain higher levels in reading; whereas it did not seem to have similarly helped either the more or the less intelligent among the older (i.e. Primary Three) pupils. No consistent significant differences were obtained between boys and girls within the same groups.

The assessments reported in this chapter were made before the experimental groups had transferred to T.O., although some of those in Primary Three had started making the transfer before the end of 1967. The tests were therefore in w.i.t.a. for experimental, and in T.O. for control, groups. Tests conducted in 1968, as described in the next two chapters, were subsequent to the transition stage and they therefore reflect the post-transfer values of learning to read initially through w.i.t.a. In particular, spelling skills were not tested until all the experimental groups had changed to reading in T.O. Discussion of this aspect of the learning of English is therefore left to the next two chapters.

CHAPTER VI

RESULTS - II: FIRST ASSESSMENT AFTER TRANSITION TO TRADITIONAL ORTHOGRAPHY

A. THE TRANSITION STAGE

Some of the Group A* pupils started changing to T.O. before the end of 1967, but the entire group did not change over until January 1968 when they were in Primary Four. Some of those in Groups B* and C* started changing in January 1968 when they were in Primary Three (Ibadan area) and Standard One (Lagos area), respectively, but it was not until the beginning of April 1968 that they all changed over. The criterion level for transfer, that is, fluent reading of NNE Book Two, was attained by most pupils before they made the transition to T.O., but a few others were still reading Book One when they were made to transfer to T.O.

Several children never attained complete mastery of w.i.t.a. print. Such children continued to get confused over the symbols ou, au, ue, y (vowel), and the sounds represented by th, and z. The sound of the symbol 'u' was also often confused, probably due to the influence of Yoruba. Most teachers found it possible to teach the pupils successfully to use the contrasting sizes of symbols as a cue to stress patterns. They complained however that pupils did not understand the cue-value of the different positions of symbols, on or above the base-line, and

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* See Table 4.1.

that they tended in several instances to read parts of the same word printed in the lower and upper positions as if they were different words. The teachers were helped by w.i.t.a, however, so that their pupils learnt to use the stress patterns which they themselves indicated in their reading, as they would not have been able to do without w.i.t.a.

Being able to say the i.t.a. symbols constituting a word did not always guarantee its correct pronunciation, especially in the case of polysyllabic words. Knowledge of the meaning was important. Pupils who had learnt to read through w.i.t.a. were however remarkably persistent in their attack on words: they were never put off by new words and they always made an attempt which was often correct, whereas the children taught through T.O. more usually ignored unfamiliar words. Knowledge of the meaning of words was important for their correct articulation. But since the acquisition of a spoken vocabulary was slow for most pupils, reading was accordingly slowed down. Many of them therefore took a longer time than expected to attain the criterion level before transfer to T.O.

The pupils themselves appeared to have experienced little or no difficulty at transition, because they read with ease T.O. materials of an appropriate level of difficulty, although they hesitated over a few words at first. In writing however, some confusion persisted for a short time, as teachers observed that their pupils continued to write 'cuming', 'correcshion', 'goeing'

and other forms reminiscent of the influence of i.t.a. for some-time after transfer. When children started to learn spelling, they also persisted in 'naming' letters according to their i.t.a. sounds, e.g. 'Kee-uh-tee' instead of 'see-you-tee' for 'cut', and 'eh-gee-gee' instead of 'ee-jee-jee' for 'egg'.

The main difficulty confronting the teachers at the transition stage was in connection with the organization of the class and the conduct of lessons as more and more pupils changed to reading T.O. It became progressively more difficult to plan lessons for the different groups and to make appropriate provisions for them in writing on the blackboard. Teachers therefore preferred a more dramatic change over in which all pupils made the transfer at the same time.

Tests were conducted in July 1968, about three to six months after transfer to T.O., to compare the progress made by experimental and control groups. The results of these tests are discussed in the next section.

B. THE JULY 1968 TESTS

(i) Tests Used

Tests were conducted in English Reading, English spelling and Yoruba reading. The English reading test used was the Schonell Graded Word Reading Test[1] which is an individually administered word recognition test. A test constructed by the

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1. Schonell, F.J., & Schonell, F. (1963) Diagnostic and Attainment Testing. Oliver & Boyd. p. 42 (4th Edition)

author was used to assess English spelling[1] skills. It comprises two parts. The first part consists of ten words each of which was written with four different spellings in a row out of which the testee was required to identify and underline the only one correct (T.O.) spelling of each word. The second part consists of twenty words to be written from dictation, mostly but not exclusively in two-word phrases. A group reading test in Yoruba[2], also constructed by the author, was used to measure attainments in Yoruba reading. It consists of Word Recognition, Sentence Reading, Sentence Completion, and Comprehension exercises. The results obtained on each of these three tests conducted in July 1968 are discussed separately in the succeeding paragraphs.

(ii) Achievements in English Reading

The mean scores of matched pairs of experimental and control classes were compared by means of the z ratio, with the results shown in Table 6.1. See also Figs. 6.1 to 6.6 for graphic comparison of experimental and control groups' scores on the English Reading Test (July 1968).

For Primary Four (1968) pupils, two of the three pairs of experimental and control classes compared showed significant differences at the 99% level of confidence in favour of the control classes, while the difference between the means of the classes in the third pair was not statistically significant

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1. See Appendix XV (a), X (b)
2. See Appendix XVI

although the control group scored higher. This significant difference in favour of the control groups of Primary Four (1968) pupils confirmed the results previously obtained for this set of pupils in 1967 before the w.i.t.a. classes had transfered to T.O.

Table 6.1. Comparative scores by matched pairs of classes on the Schonell Graded Word Reading Test (July 1968)

GROUP	Experimental Classes				Control Classes				z for difference
	Class No+	Mean	s.d.	N	Class No+	Mean	s.d.	N	
(A)	1	20.68	15.10	19	2	33.36	20.55	22	-2.209*
Primary	3	12.24	6.80	21	4	17.25	9.95	20	-1.828
Four									
Ibadan	5	9.75	4.60	20	6	20.25	17.55	20	-2.518*
(B)	8	14.93	14.30	29	9	5 .68	3.55	19	3.270**
Primary	10	20.96	13.75	24	11	12.00	8.40	29	2.865**
Three									
Ibadan	12	15.83	10.50	21	13	5.44	4.60	16	3.913**
	22	18.67	19.70	33	23	11.12	8.75	40	2.013*
(C)	24	10.59	12.70	32	25	12.17	9.35	30	-0.552
Std. I	26	11.09	10.10	33	27	12.69	11.10	36	-0.618
Lagos	28	31.61	26.60	38	29	14.84	14.85	37	3.334**
	30	12.26	14.00	38	31	13.49	10.45	37	-0.392
	32	19.92	14.35	24	33	12.65	11.55	31	1.986*

+ 'Class No' refers to the numbers in Tables 4.4., 4.5 and 4.7

* Diff. significant at 95% level:
** Diff. significant at 99% level.

In the case of Primary Three (1968) pupils, the matched experimental and control classes compared within each of the three pairs all showed significant differences, beyond the 99% level of confidence, in favour of the experimental groups. Out of the six pairs of Standard One (1968) classes in Lagos, three showed significant differences within the pairs in favour of the experimental classes, while differences within the other three pairs were not statistically significant. It could be said therefore that the experimental groups of Primary Three (1968) pupils in Ibadan and Standard One (1968) pupils in Lagos performed better in the English reading test than the control groups, although the difference was more pronounced in the case of the Ibadan groups than of the Lagos groups. The results obtained for these groups thus confirmed those previously obtained for them in 1967 before the experimental classes made the transition to T.O., just as the results obtained for Primary Four (1968) pupils confirmed those previously obtained for them in 1967.

It may be observed from Table 6.1 that Standard One pupils in Lagos tended to perform better than the T.O. classes of Primary Three pupils in Ibadan. This is probably not unconnected with the fact that the schools in the Lagos area were better staffed and better equipped than those in the rural areas around Ibadan involved in the w.i.t.a. project. A possible additional reason is that pupils in Lagos probably had more contact with books and with spoken English in their homes than those in the rural areas had.

It is also interesting to note in Table 6.2 that the experimental groups of both Primary Three (1968) in Ibadan and Standard One (1968) pupils in Lagos read as well as or better than the experimental group of Primary Four (1968) pupils in Ibadan. This may be a further indication that w.i.t.a. did not help those pupils (i.e. Primary Four) who were older when w.i.t.a. was introduced.

The scores for all w.i.t.a. and T.O. groups, including unmatched classes, on the English reading test are shown in Table 6.2. These scores confirmed those obtained when matched groups were compared as shown in Table 6.1. It only seems that difference between w.i.t.a. and T.O. groups in Lagos are more intensified.

Table 6.2 Scores on the Graded Word Reading Test by all Experimental and all control Groups - July 1968

Class	GROUP	Reading Age in Years		Raw Scores			$\bar{Z}$ for diff. between means
		Mean	Median	Mean	s.d.	N	
Primary IV Ibadan	Experimental	6.4	6.2	14.08	10.80	60	-3.67 (Sig. 99%) T.O. better
	Control	7.4	6.8	24.34	18.45	77	
Primary III Ibadan	Experimental	6.5	6.2	14.94	12.80	97	2.750 (Sig. 99%) w.i.t.a. better
	Control	5.8	5.7	8.50	7.18	64	
Std. I Lagos	Experimental	7.1	6.3	21.26	22.3	337	6.22 (Sig. 99%) w.i.t.a. better
	Control	6.2	6.0	12.45	12.45	281	

These results on English reading obtained some three to six months after the experimental groups had transferred to T.O. provide useful comparison with those obtained six months later in December, 1968 as described in the seventh chapter.

(iii) Achievements in English Spelling

The scores of the matched experimental and control classes in English Spelling as obtained in July 1968 are shown in Table 6.3. See also Figs. 6.7 to 6.12 for graphic comparison of experimental and control groups' scores on the spelling test (July 1968). The scores indicate that two of the three control classes of Primary Four performed significantly better in the English spelling test than the experimental classes matched with them, while the other matched pair did not differ significantly. In the case of the Primary Three pupils, all the three experimental classes had significantly higher scores than the control classes with which they were matched. For Primary Four and Primary Three pupils therefore, the results of the English spelling test were like those of the English reading test, that is, the control groups performed better among the former (i.e. Primary Four) whilst the experimental groups were superior among the latter (i.e. Primary Three). In the case of Standard One pupils in Lagos however, only two of the six pairs showed statistically significant differences (at the 95% level of confidence) and these were in favour of the control classes.

Table 6.3: Comparative Scores by matched pairs of classes on the English Spelling Test - July 1968.

Group	(E) Experimental Classes				(C) Control Classes				Z for Diff.
	Class No+	Mean	s.d.	N	Class No+	Mean	s.d.	N	
'A' Primary Four (Ibadan)	1	14.23	6.42	22	2	18.40	4.84	21	-2.390*
	3	8.31	4.98	21	4	15.93	6.36	21	-4.233**
	5	10.15	3.96	21	6	13.76	7.48	19	-1.832
'B' Primary Three (Ibadan)	8	8.00	6.06	28	9	4.72	3.76	18	2.216*
	10	14.59	4.96	22	11	10.16	4.96	29	3.098**
	12	9.63	3.72	23	13	4.03	3.18	17	4.956**
'C' Std. I (Lagos)	22	13.65	8.30	33	23	14.96	7.62	39	-0.682
	24	11.00	8.38	32	25	13.00	6.36	28	-0.036
	26	10.26	7.40	33	27	13.89	6.42	36	-2.135*
	28	20.17	5.50	36	29	18.72	4.96	37	1.170
	30	12.27	7.38	35	31	15.91	7.80	37	-2.000*
	32	15.75	6.98	24	33	12.69	6.92	31	1.594

+ 'Class No' refers to the numbers in Tables 4.4, 4.5 and 4.7.

* Significant at 95% level.

** Significant at 99% level.

This suggests that there were little differences between experimental and control classes among this set of pupils in English spelling as measured in July 1968, although some control classes showed a tendency to perform better than the experimental groups.

These conclusions remained substantially unchanged when

The average score of the experimental classes in each group was compared with that of all the corresponding control classes as shown in Table 6.4. That is, the control groups of Primary Four (1968) pupils were superior in English spelling to the experimental groups, while the latter were superior in the case of Primary Three (1968) pupils; but there were no consistent differences between experimental and control groups in the case of Standard One (1968) pupils in Lagos.

Table 6.4. Average Scores by all Experimental and all Control groups on the English Spelling Test

CLASS	GROUP	Mean	s.d.	N	Z for Difference	Significance
Primary Four	Experimental	11.00	5.90	60	4.53	sig. 99.9% cont. group better
	Control	15.89	6.64	76		
Primary Three	Experimental	9.44	5.84	98	3.09	sig. 99.9% exp. group better
	Control	7.00	5.12	64		
Standard One	Experimental	14.17	8.10	332	0.13	Not Sig.
	Control	14.09	7.40	276		

It was thus evident that a few months after transfer to T.O. the experimental groups, who had learnt to read through w.i.t.a., were not inferior in spelling in T.O. to the control groups who had learnt to read through T.O. When one group was better in read-

ing it also tended to be better in spelling, irrespective of the medium it had used, i.e. whether w.i.t.a. or T.O. It is also interesting to note that the pupils in Lagos tended to do better in spelling than those in Ibadan - as they did in reading. This test, however, came rather soon after the transition stage: the results of the tests conducted in December 1968 - as described in the next chapter - therefore provide a better indication of the more permanent effects of w.i.t.a. on spelling.

(iv) Achievements in Yoruba Reading

According to the scores shown in Table 6.5, only three of the eleven pairs of experimental and control classes compared indicated statistically significant differences in Yoruba reading. One of the differences was in favour of a control class of Primary Four pupils, another was in favour of an experimental class of Primary Three, while the third was in favour of a control class of Standard One (Lagos) pupils. It may be concluded from these result that there was no consistent difference between experimental and control classes in Yoruba reading which could be attributed to the medium of instruction in English, i.e. either w.i.t.a. or T.O. Differences obtained in a minority of cases probably arose from other factors.

That there were differences in Yoruba reading arising from differences between schools or teachers is indicated by the average scores for all experimental and all control classes (i.e. matched and unmatched), as listed in Table 6.6. For such combined

Table 6.5. Comparative Scores by matched Experimental and Control classes on the Yoruba Reading Test- July 1968

GROUP	Experimental Classes				Control Classes				Z for Diff. and Significance
	Class No+	Mean	s.d.	N	Class No+	Mean	s.d.	N	
'A'	1	20.41	5.10	22	2	21.46	5.56	23	-0.644
Primary	3	10.25	6.64	24	4	21.45	3.86	19	-6.788***
Four	5	12.18	2.62	19	6	14.30	8.56	20	-1.034
'B'	8	7.61	6.02	27	9	5.75	4.46	16	1.127
Primary	10	14.07	7.02	23	11	12.72	6.22	27	0.700
Three	12	16.86	6.04	22	13	6.50	6.16	16	5.169***
'C'	22	17.75	6.74	32	23	17.25	5.12	40	0.342
Std.	24	12.06	5.52	32	25	14.03	5.66	30	-1.368
One	26	11.89	4.44	33	27	14.67	5.58	36	-2.254*
Lagos	28	21.20	5.02	37	29	No Yoruba Reading			
	30	15.07	6.72	35	31	14.18	6.64	37	0.556
	32	15.92	6.94	24	33	15.30	5.46	30	0.350

+ 'Class No' refers to the numbers in Tables 4.4, 4.5 and 4.7
* Diff. Significant at 95% level; *** Diff. Significant at 99.9% level.

groups, differences emerge between experimental and control classes of Primary Four and Standard One pupils. See also Figs. 6.13 to 6.18.

Performance in Yoruba reading therefore had little connection with the medium of instruction in English; but there were some inconsistent differences which may be attributed to

other factors such as better teaching. This largely confirms the results obtained in Yoruba reading in June 1967.

Table 6.6. Average Scores by all experimental and all Control groups on the Yoruba Reading Test - July 1968

Class	Group	Mean	s.d.	N	Z for difference	Significance
PRIMARY FOUR	Experimental	14.25	6.88	65	-4.44	99.9% Cont. group better
	Control	19.44	7.00	77		
PRIMARY THREE	Experimental	10.92	7.76	95	1.52	Not Sig.
	Control	9.14	6.66	59		
STD. ONE LAGOS	Experimental	15.87	6.44	332	2.93	99% exp. group better
	Control	14.29	6.30	238		

(v) Sex Differences

For the purpose of comparing the performance of boys with that of girls on each subject in the July 1968 tests, their mean scores and standard deviations, according to experimental and control groupings were calculated. The mean scores for boys and for girls within each group were then compared by means of the z-ratio. These scores and z-ratios are shown in Table 6.7.

Only four of the eighteen comparisons made showed significant differences between boys and girls within the same group. Three of the differences were in favour of the boys in the experimental

group of Primary Three pupils who were found to be superior to the girls in all the three subjects in which they were examined. The fourth difference obtained indicated that girls in the control group of Standard One pupils (in Lagos) performed better than the boys in Yoruba reading.

Two conclusions could be validly drawn from this result. The first is that there were no consistent differences between the two sex groups which could be associated with the medium of instruction in English (i.e. w.i.t.a. or T.O.). In other words, it could not be said that a particular sex sub-group within either the experimental or the control group tended to do better than the other sex-sub-group. Each medium of instruction functioned similarly for both boys and girls. The second conclusion is that the boys within the experimental group of Primary Three pupils were fundamentally* superior to the girls within the group, since according to the first conclusion, the difference could not be attributed to any consistently different effects of the medium of instruction on the performance of one sex sub-group as opposed to the other. The superior performance in Yoruba reading of the girls in the control group of Standard One pupils as compared with the boys (with the difference barely reaching significance at the 95% level of confidence) may indicate a genuine difference between boys and girls in this group since these girls scored slightly higher than the boys in the group in the three tests

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* Compare results in Section G of chapter Seven.

shown in Table 6.7.

Table 6.7. Scores by Boys and Girls in Experimental and Control Groups on the July 1968 Tests

CLASS	GROUP	BOYS			GIRLS			Z for Diff. and Significance
		ENGLISH READING						
		Mean	s.d.	N	Mean	s.d.	N	
(PRIM. FOUR)	Exp.	13.82	9.75	44	14.81	13.25	16	-0.265 -
	Cont.	25.44	18.85	48	22.52	17.65	29	0.676 -
(PRIM. THREE)	Exp.	17.31	13.00	65	10.28	10.65	32	2.812* Boys' Better
	Cont.	8.85	7.95	46	7.56	4.40	18	0.811 -
(STD. ONE)	Exp.	20.80	20.65	158	19.79	23.60	179	0.417 -
	Cont.	12.06	12.90	157	12.89	11.75	124	-0.561 -
		ENGLISH SPELLING						
(PRIM. FOUR)	Exp.	11.62	6.18	41	9.66	4.96	19	1.281 -
	Cont.	15.42	6.36	48	16.71	7.04	28	-0.796 -
(PRIM. THREE)	Exp.	10.53	5.92	65	7.29	5.04	33	2.792** Boys' better
	Cont.	7.18	4.86	47	6.50	5.70	17	0.425 -
(STD. ONE)	Exp.	14.13	8.12	156	14.20	8.04	176	-0.078 -
	Cont.	13.54	7.10	160	14.86	7.70	116	-1.449 -
		YORUBA READING						
(PRIM. FOUR)	Exp.	14.37	7.12	46	13.97	6.58	19	0.213 -
	Cont.	19.94	6.70	50	18.50	7.46	27	0.823 -
(PRIM. THREE)	Exp.	11.91	8.08	64	8.49	6.48	31	2.190*
	Cont.	9.48	6.92	45	8.07	5.62	14	0.762 -
(STD. ONE	Exp.	15.89	6.72	128	16.34	6.02	160	-0.953 -
	Cont.	13.82	6.36	123	15.48	5.32	92	-2.062* Girls Better

'Exp'. = Experimental Group; 'Cont'=Control Group. *Diff. sig. at 95% level; ** Diff. sig. at 99% level.

Conclusion on the non-existence of consistent significant differences between boys and girls either within a particular treatment-group or in any particular subjects thus confirmed the results previously described in the last chapter.

C. WRITTEN ENGLISH

Very little or no free writing was done in most of the participating classes. The teachers preferred the type of written English based on exercises provided in the pupils' reading books; and since the first two readers of the New Nation English (NNE) course contain no such exercises, there was no opportunity for that type of exercise until the pupils started to read NNE Book Three. This gave rise to complaints by the teachers about the NNE books, as will be seen in section H of the eighth chapter.

Writing, which consisted in merely copying words and sentences, was however undertaken in all participating classes during 'writing' lessons. Pupils in experimental classes copied sentences in j.t.a. before transition to T.O., while those in control classes wrote in T.O. They all wrote in T.O. after tranistion.

Occasionally, some teachers asked their pupils to write a few sentences on simple situations presented to them pictorially. One such attempt by a pupil on a picture in their reading book[1] reads as follows:

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1. Taylor A. (1959): New Nation English, Book Two, London. Thomas Nelson & Sons. p. 50.

"Mary and John were making shop for selling things. They were going to sell things. Mary had some fruits, eggs, plantain, oranges and some foods. Mary put the eggs on the table. Alice had a box of ma-ches (sic), brushes and bread.

Some teachers also had a news period every morning during which pupils related their experiences and sometimes used drawings followed by one or more written sentences to illustrate these. One girl wrote this piece of news:

"Yesterday my brother fell down and had two pains, one near his eye and one near his head. And my Mom treat it for him."

It was evident that the children would write interesting stories if only they had the language to convey their ideas.

D. SUMMARY:

Pupils in experimental groups who had learnt to read through w.i.t.a. transferred to T.O. in the first half of 1968. The change over seemed to have created little difficulty for the pupils themselves, but it gave rise to organizational problems within the classroom.

Tests conducted in July 1968, about three to six months after the main experimental groups had transferred to T.O. showed that the relative achievements of experimental and control groups remained largely as they had been before the former made the transition. Among group A* (i.e. Primary Four, 1968) pupils, those in

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* See Table 4.1.

the control classes who had shown better word recognition skills in English than the experimental group before transition maintained this superiority a few months after transition. Similarly, the experimental classes of group B* (i.e. Primary Three, 1968) pupils were superior to their control counterparts as they had been before changing over to T.O. The experimental classes among Group C* (i.e. Standard One, 1968) pupils were also still superior to the control classes in English Reading about six months after the transition although not consistently so since only three of the six pairs of classes compared showed significant differences in favour of the experimental classes, while the others were not significantly different.

In spelling skills in T.O., which was tested for the first time, relative achievements of experimental and control groups were found to be as they were in English reading, except that among Standard One (1968) pupils in Lagos two of the six control classes compared with matched experimental classes performed better than their opposite numbers, but no significant difference was obtained when all experimental were compared with all control classes. In the case of Yoruba reading, no consistent differences associated with the medium of instruction in English were obtained.

When the performances of boys and girls within each group were compared, neither w.i.t.a. nor T.O. appeared to have given one sex sub-group marked superiority over the other within the

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* See Table 4.1.

same treatment group, excepting, however that boys among the experimental group of Primary Three (1968) pupils were found to be fundamentally superior to the girls.

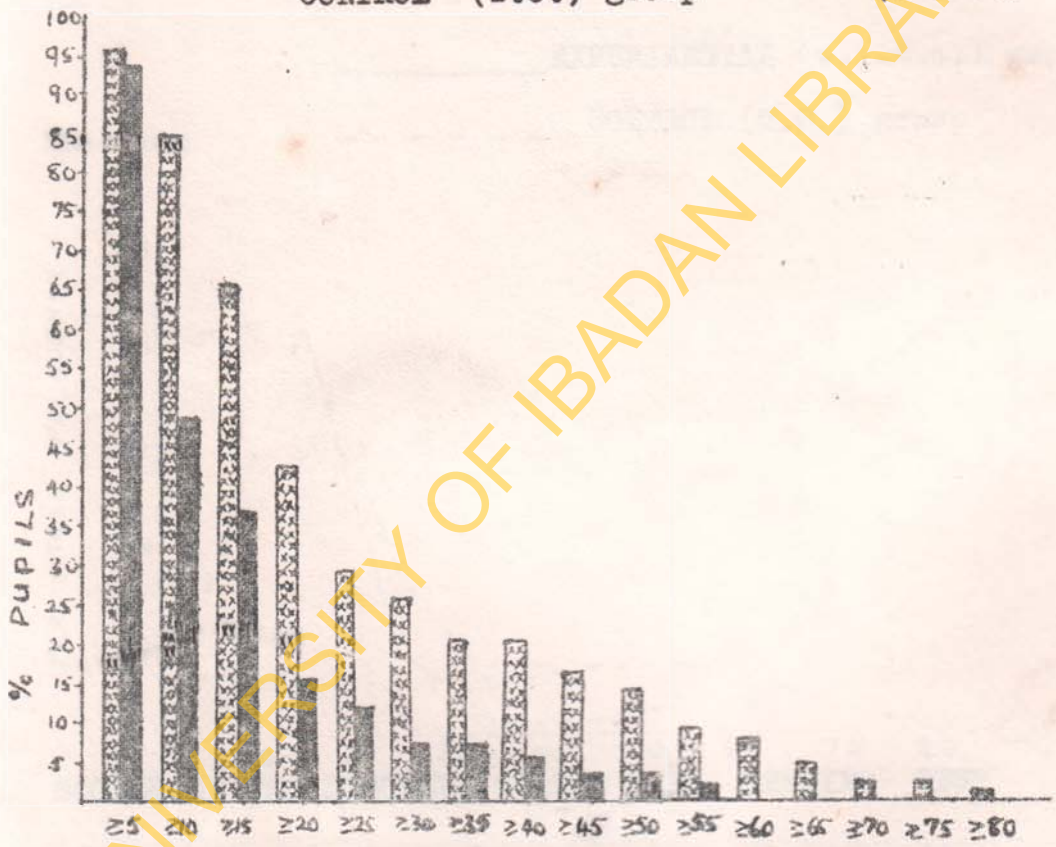
Figures 6.1 to 6.18 illustrate graphically the relative results obtained for experimental and control groups in each subject in the July 1968 tests.

Further testing in December 1968, the results of which are described in the next chapter, provide further information on the relative reading skills - in pronunciation, comprehension and word recognition - of the experimental and control groups, from which conclusions could be drawn on the possible longer-term effects of the use of w.i.t.a. as an initial medium of instruction in English reading.

ENGLISH READING PRIMARY FOUR - JULY, 1968

EXPERIMENTAL (w.i.t.a.) group (N = 60)

CONTROL (T.O.) group (N = 77)



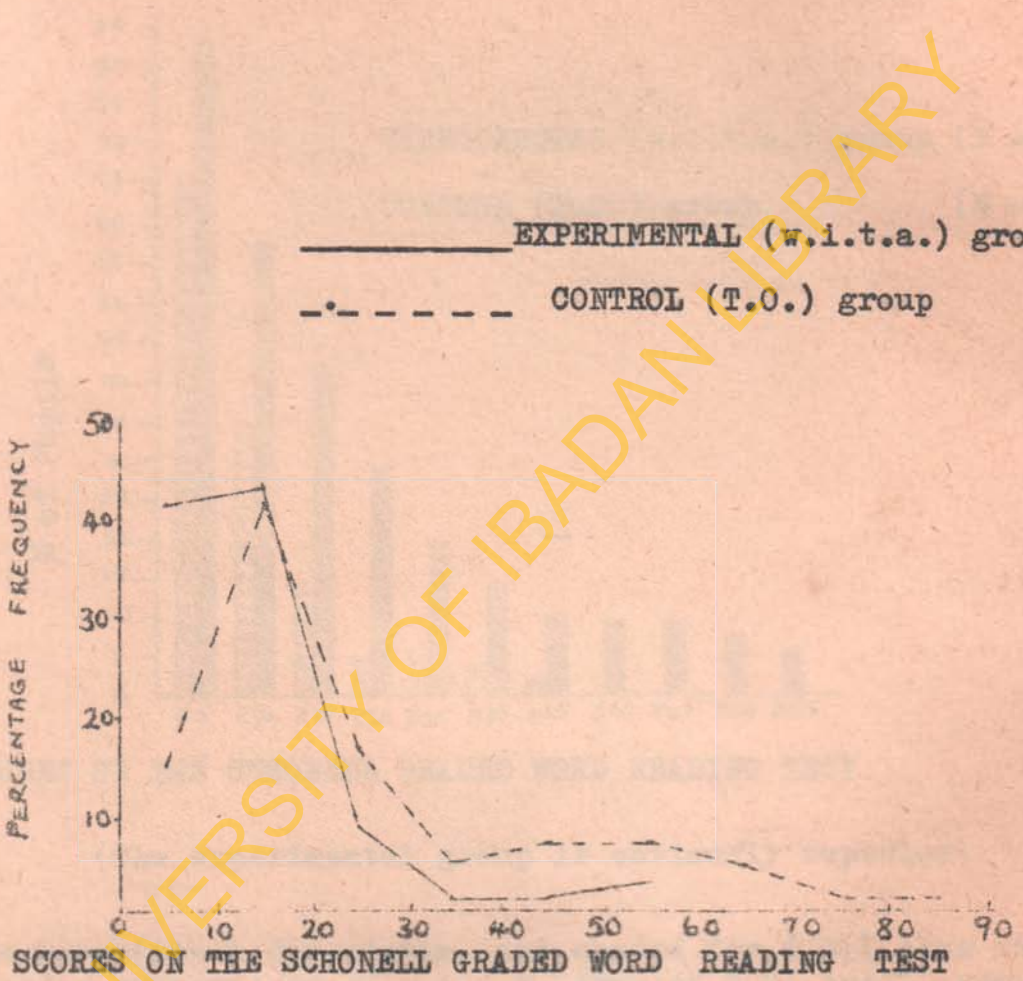
SCORES ON THE SCHONELL GRADED WORD READING TEST

(The Control group is obviously superior)

The bars (black for w.i.t.a. and shaded for T.O.) show that greater proportions of T.O. than of w.i.t.a. pupils had scores between 10 and 55. Also, whilst about 8% of the T.O. group scored between 60 and 80 none of the w.i.t.a. group scored so high.

Fig. 6.1. Bar Diagram of Primary Four pupils' Scores on English Reading Test - July 1968

ENGLISH READING PRIMARY IV, JULY 1968

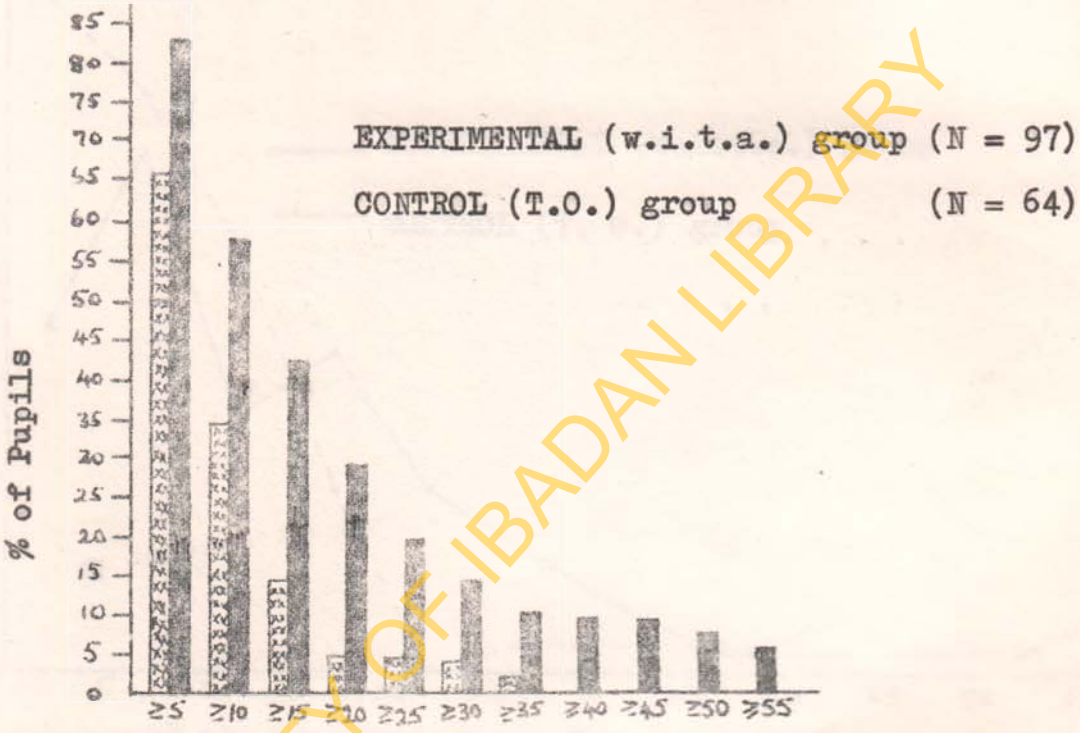


(The Control group is obviously superior)

The frequency polygons (continuous line for w.i.t.a. and broken line for T.O.) show that a greater proportion of T.O. than of w.i.t.a. pupils scored between 20 and 55 whilst none of the latter scored above 55 although some of the former scored between 60 and 85 marks.

Fig. 6.2. Frequency Polygons of Primary Four Pupils' Scores on English Reading Test - July 1968

ENGLISH READING PRIMARY THREE JULY 1968



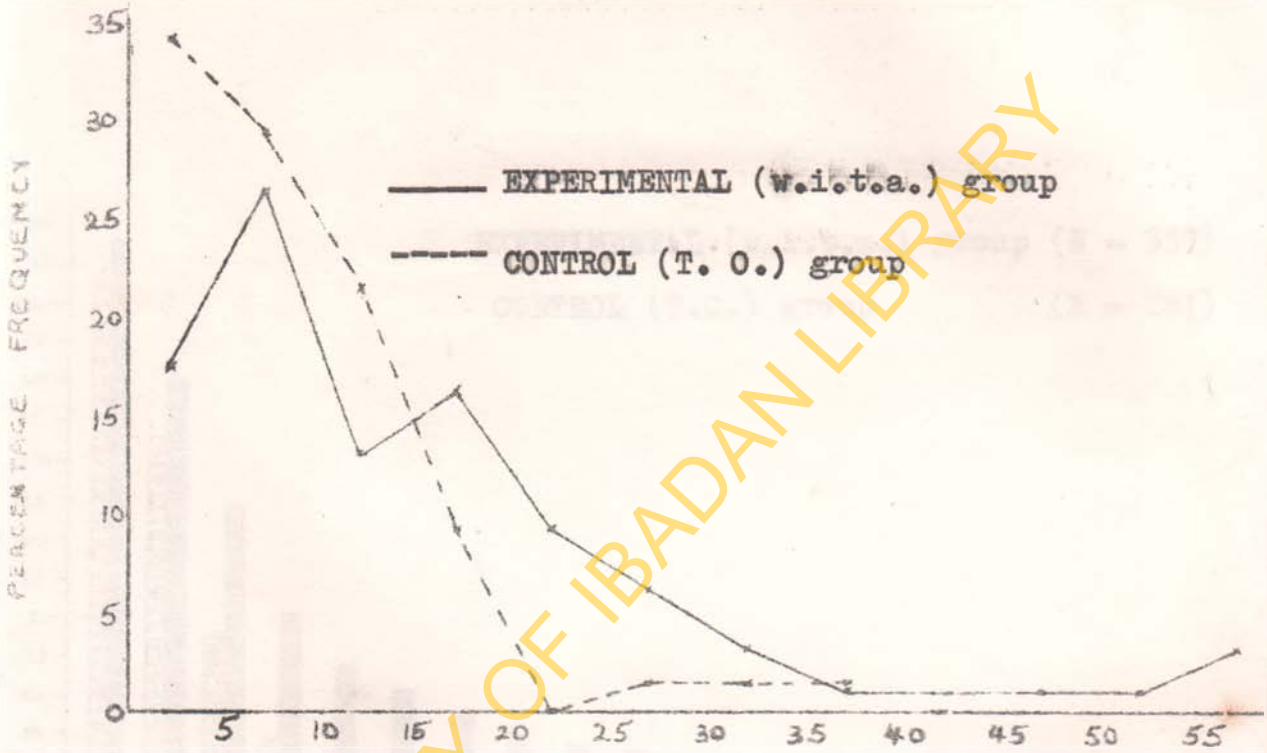
SCORES ON THE SCHONELL GRADED WORD READING TEST

(The experimental group is obviously superior)

The bars (black for wi.t.a. and shaded for T.O,) show that greater proportions of w.i.t.a. than of T.O. pupils scored marks between 5 and 55. Whilst none of the latter scored up to 40, about 10% of the former scored between 40 and 55.

Fig. 6.3. Bar Diagram of Primary Three Pupils' Scores on English Reading Test - July 1968

ENGLISH READING PRIMARY THREE JULY 1968



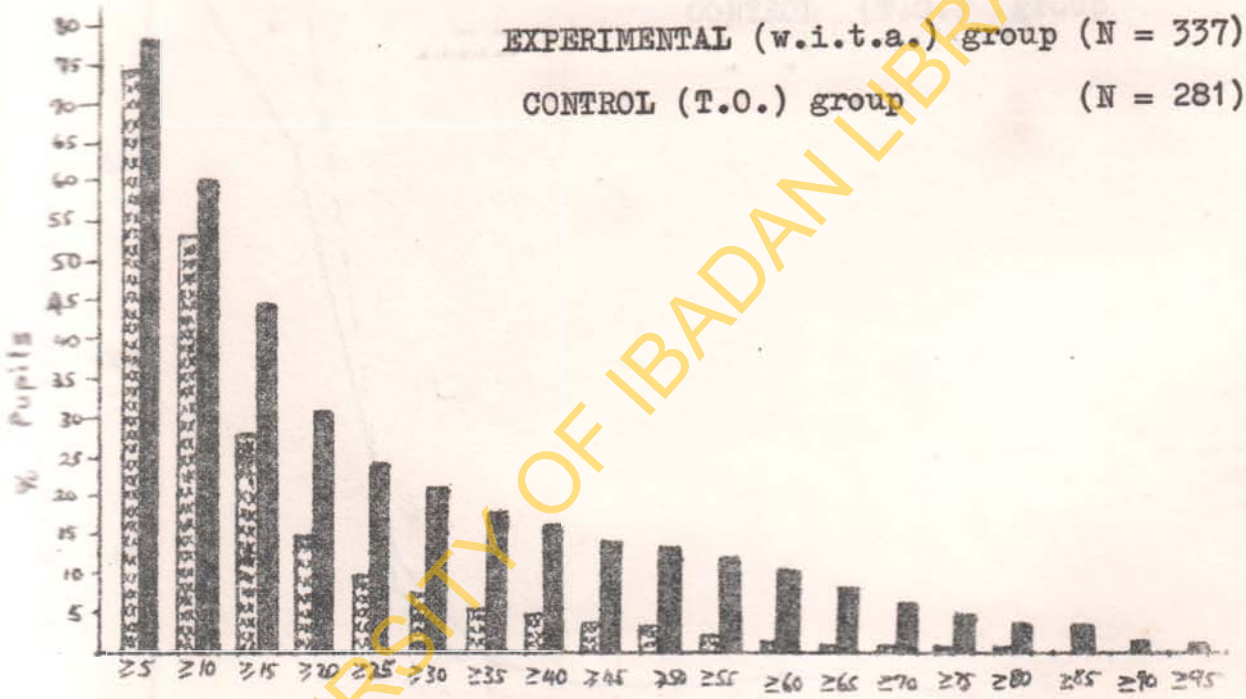
SCORES ON THE SCHONELL GRADED WORD READING TEST

(The experimental group is obviously superior)

The frequency polygons (continuous line for w.i.t.a. and broken line for T.O.) show that whilst a greater proportion of T.O. than of w.i.t.a. pupils had low scores of 0 to 12, a greater proportion of the latter had higher scores of 20 - 55. While none of the T.O. group scored up to 40 marks, some of the w.i.t.a. group scored 40 to 55 marks.

Fig. 6.4: Frequency Polygons of Primary Three Pupils' Scores on English Reading Test - July 1968.

ENGLISH READING, STANDARD ONE, LAGOS, JULY 1968

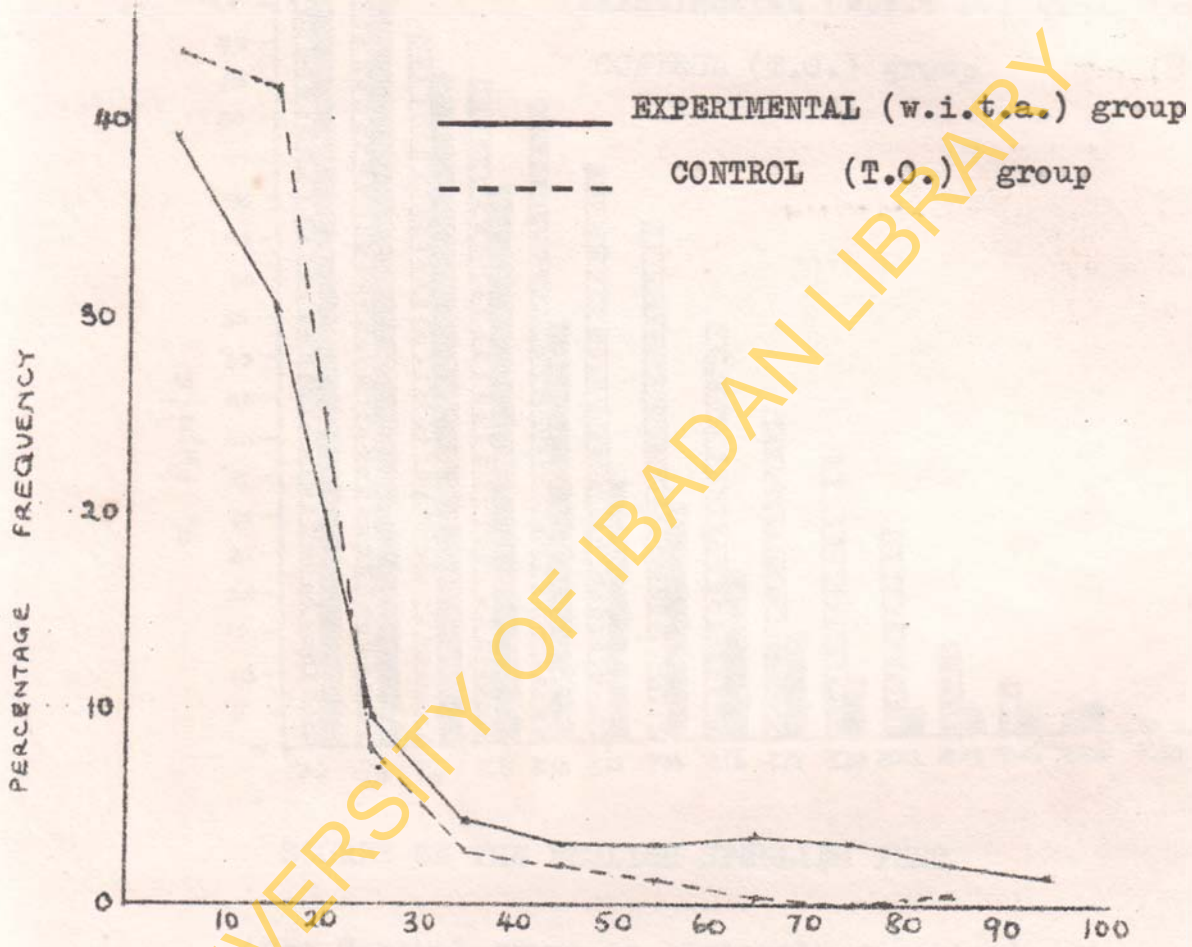


(The experimental group is obviously superior)

The vertical bars (black for w.i.t.a. and shaded for T.O.) show the percentage proportions of pupils scoring equal to or greater than the scores shown along the base line. The proportions of w.i.t.a. - taught pupils are greater at every level. Also, whilst about 6% of w.i.t.a. pupils scored equal to or above 85, no T.O. pupil scored so high.

Fig. 6.5. Bar Diagram of Standard One (Lagos) Pupils' Scores on English Reading Test - July 1968

ENGLISH READING, STANDARD ONE, LAGOS, JULY 1968



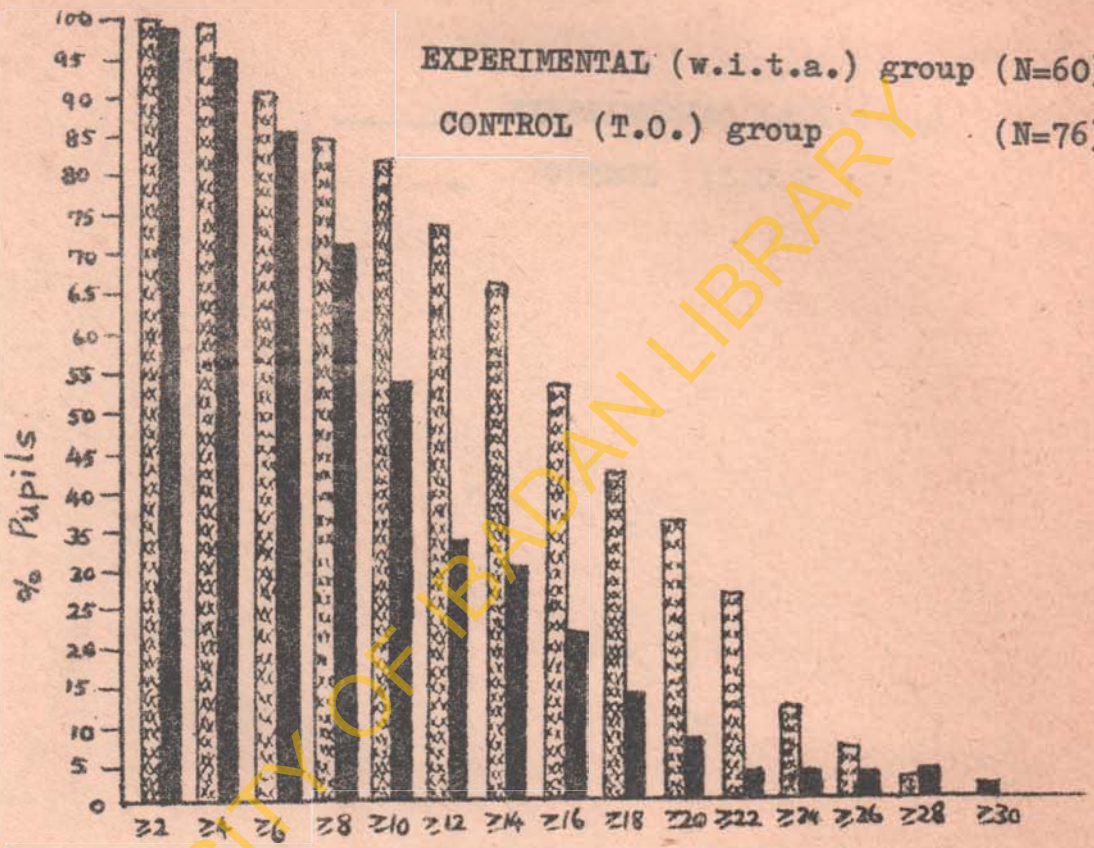
SCORES ON THE SCHONELL GRADED WORD READING TEST.

(The experimental group is obviously superior)

These frequency polygons (continuous line for w.i.t.a. and broken line for T.O.) show that a greater proportion of w.i.t.a. pupils had higher scores (from 30 to 90) than T.O. pupils; while a greater proportion of T.O. pupils had lower scores (0 - 20).

Fig. 6.6. Frequency Polygons of Standard One (Lagos) Pupils' Scores on English Reading Test - July 1968

ENGLISH SPELLING, PRIMARY FOUR, JULY 1968

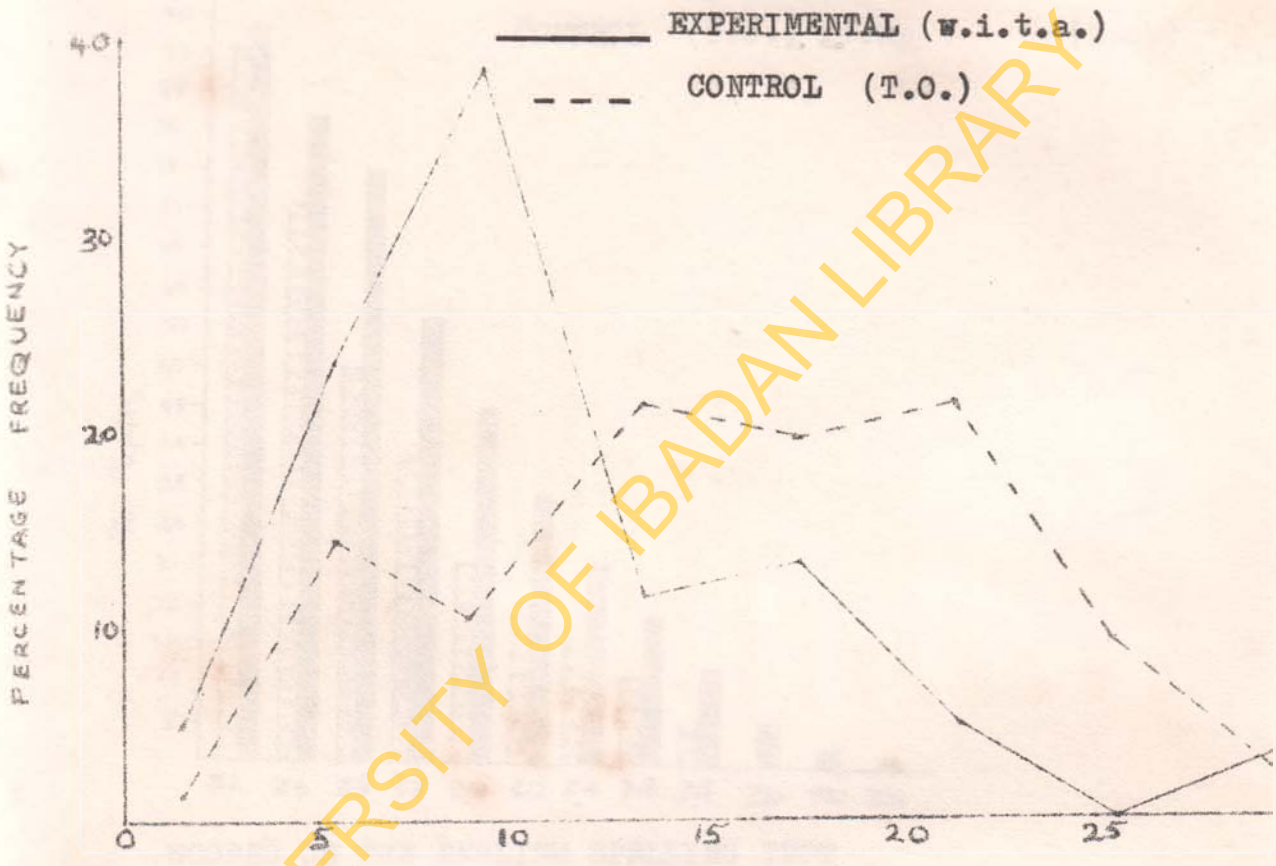


(The Control group is obviously superior)

The bars (black for w.i.t.a. and shaded for T.O.) show that much greater proportions of T.O. than of w.i.t.a. pupils scored marks from 10 to 26, although a slightly greater proportion of the latter scored between 28 and 30.

Fig. 6.7. Bar Diagram of Primary Four Pupils' Scores on English Spelling Test - July 1968

ENGLISH SPELLING PRIMARY FOUR, JULY 1968

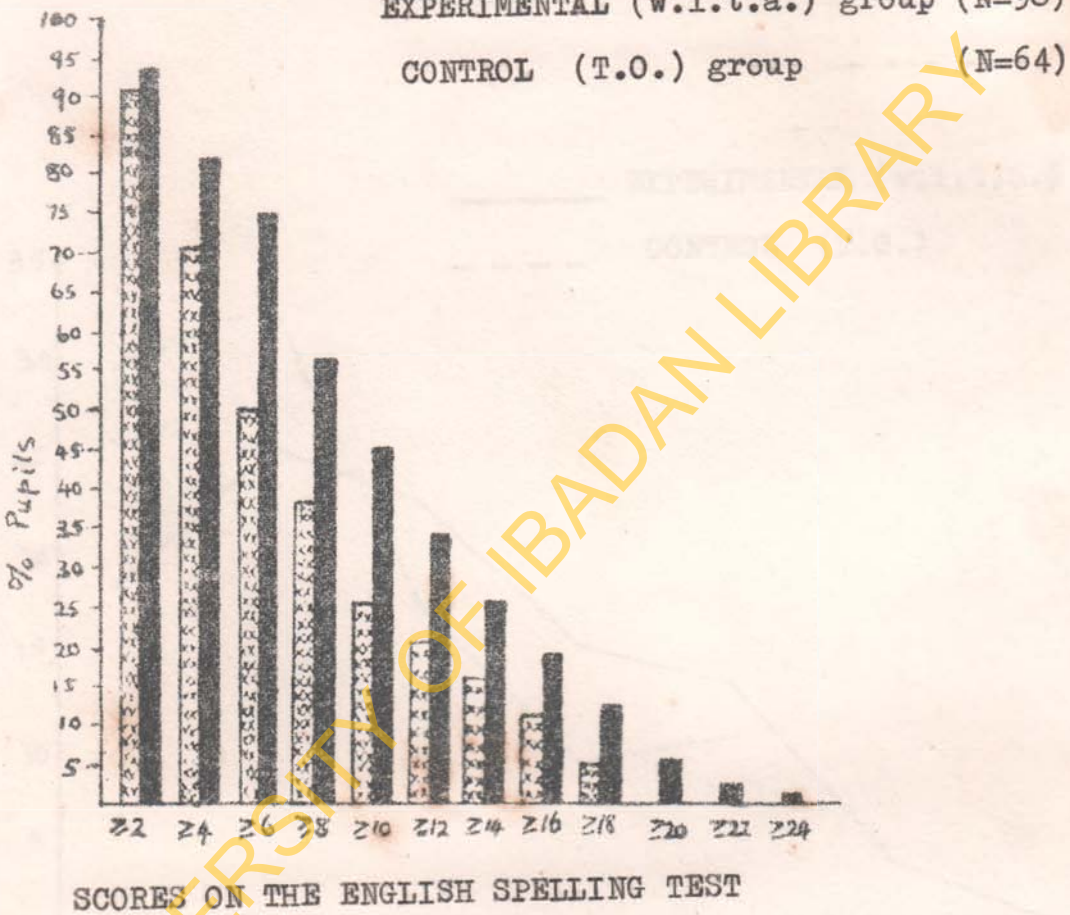


(The Control group is obviously superior)

The frequency polygons (continuous line for w.i.t.a. and broken line for T.O.) show that a greater proportion of w.i.t.a. than T.O. pupils had lower scores -2from to 12 whilst a greater proportion of T.O. than of w.i.t.a. pupils had higher scores of 15 to 28 marks.

Fig. 6.8. Frequency Polygons of Primary Four Pupils' Scores on English Spelling Test - July 1968

ENGLISH SPELLING, PRIMARY THREE, JULY 1968

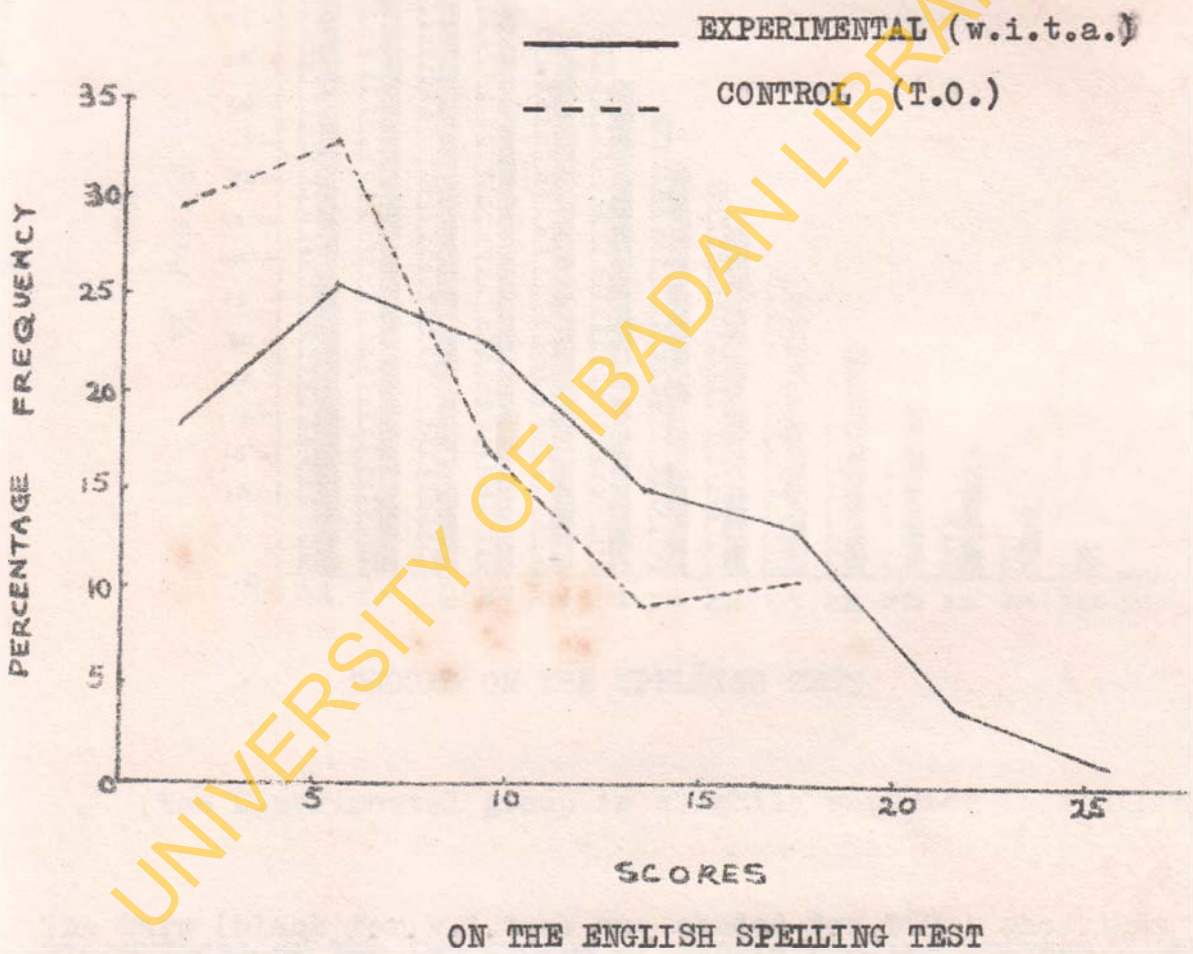


(The Experimental group is obviously superior)

The bars (black for w.i.t.a. and shaded for T.O.) show that greater proportions of w.i.t.a. than of T.O. pupils scored above each category of marks shown from 2 to 18. Also, whilst about 5% of the former scored between 20 and 24 marks, none of the latter scored so high.

Fig. 6.9. Bar Diagram of Primary Three Pupils' Scores on English Spelling Test - July 1968

ENGLISH SPELLING, PRIMARY THREE, JULY, 1968

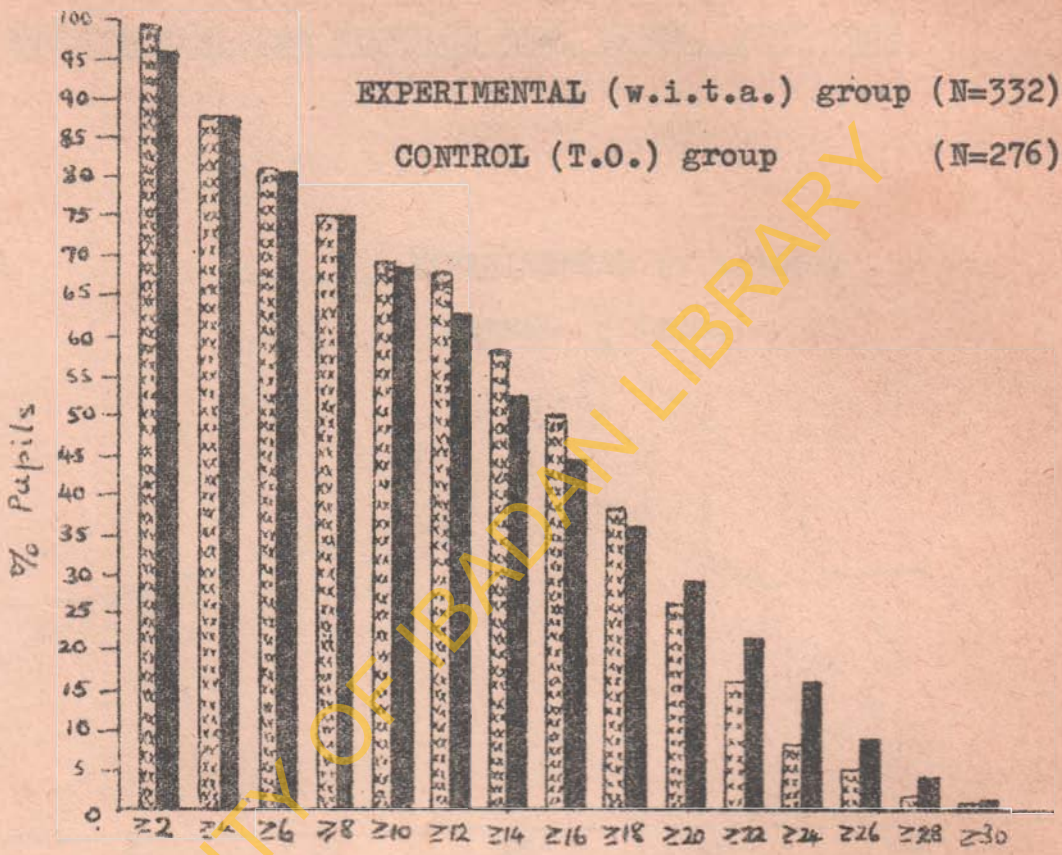


(The Experimental group is obviously superior)

The frequency polygons (continuous line for w.i.t.a. and broken line for T.O.) show that a greater proportion of T.O. than of w.i.t.a. pupils scored low marks between 2 and 7, whilst a greater proportion of the latter scored higher marks between 10 and 25; and none of the T.O. pupils scored between 20 and 25.

Fig. 6.10. Frequency Polygons of Primary Three Pupils' Scores on English Spelling Test - July 1968

ENGLISH SPELLING, STANDARD ONE, LAGOS, JULY 1968

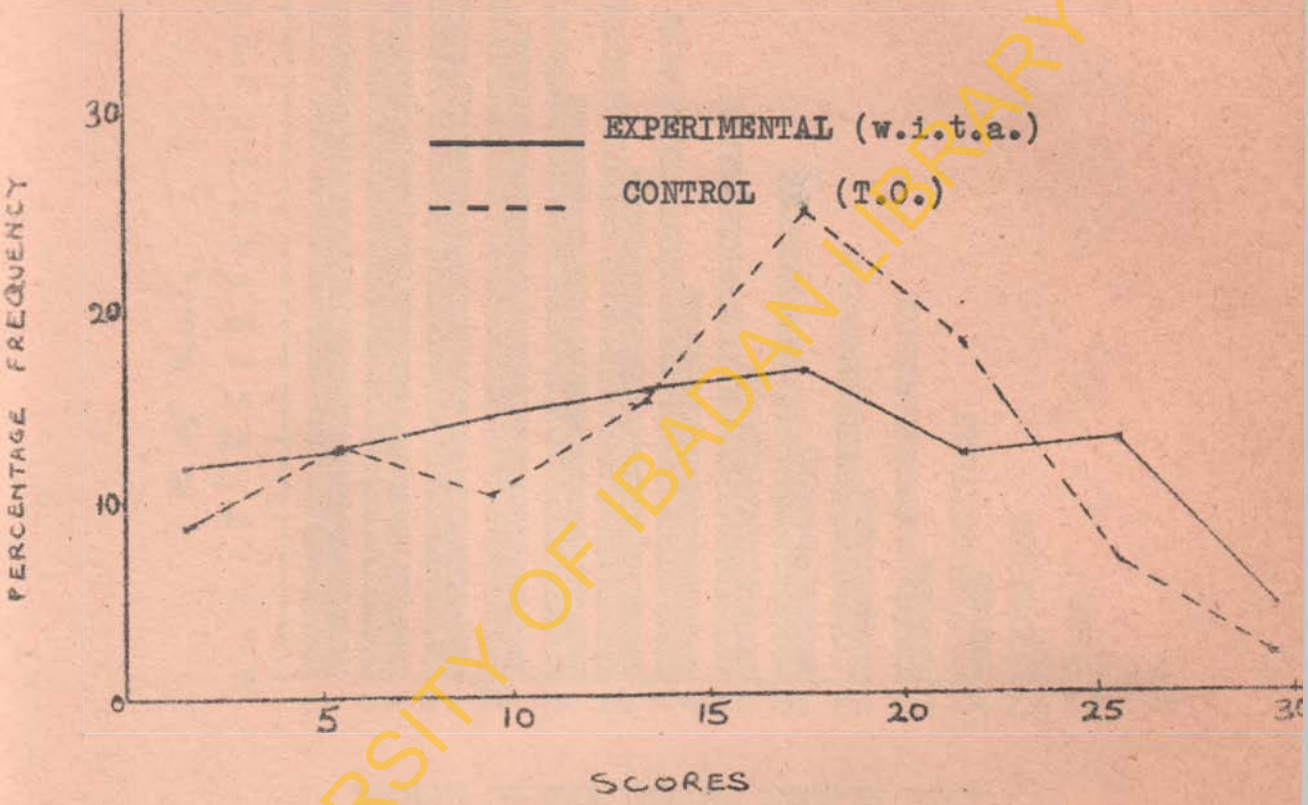


(The Experimental group is slightly superior in spelling)

The bars (black for w.i.t.a. and shaded for T.O.) show that proportions of the two groups of pupils scoring between 2 and 18 are not much different. But greater proportions of w.i.t.a. pupils scored between 20 and 30 than of T.O. pupils.

Fig. 6.11. Bar Diagram of Standard One (Lagos) Pupils' Scores on English Spelling Test - July 1968

ENGLISH SPELLING STANDARD ONE, LAGOS, JULY 1968



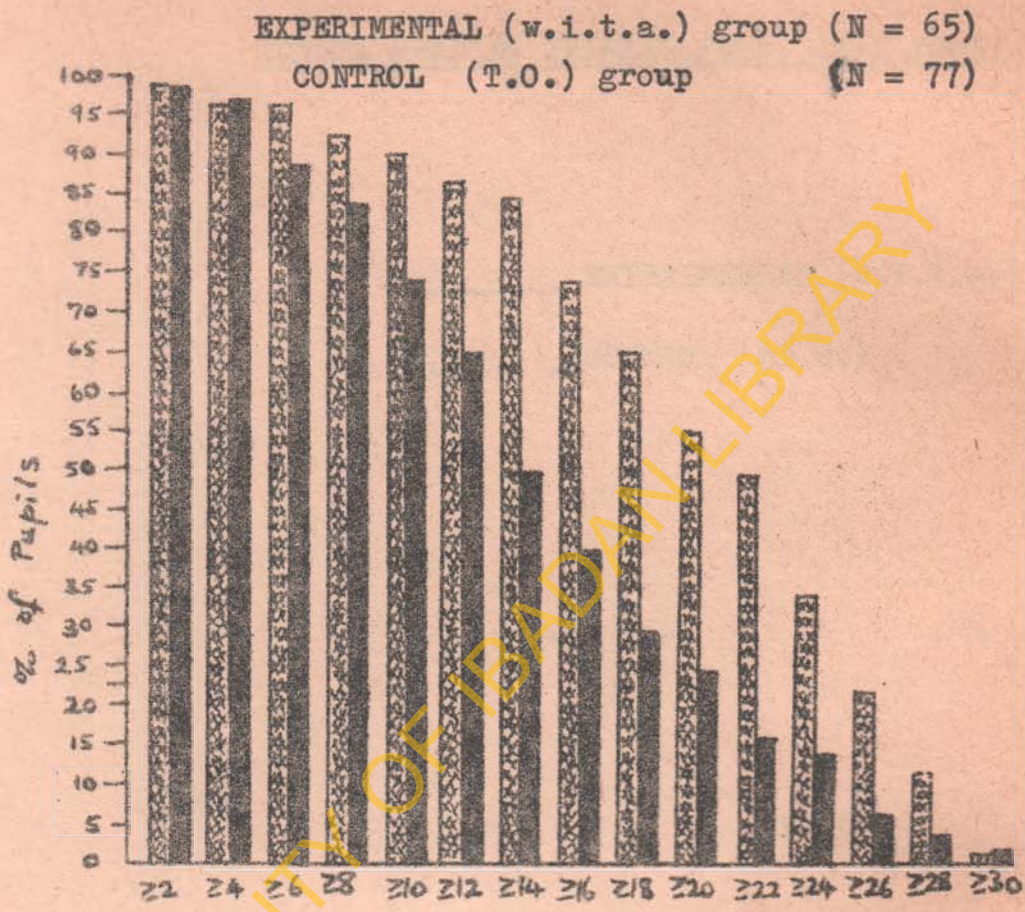
ON THE ENGLISH SPELLING TEST

(The Experimental group is slightly superior)

The frequency polygons (continuous line for w.i.t.a. and broken line for T.O.) show that the two groups are not much different, although a greater proportion of T.O. pupils had scores between 15 and 23 whilst a greater proportion of w.i.t.a. pupils had higher scores between 25 and 30.

Fig. 6.12. Frequency Polygons of Standard One (Lagos) Pupils' Scores on English Spelling Test - July 1968

YORUBA READING, PRIMARY FOUR, JULY 1968

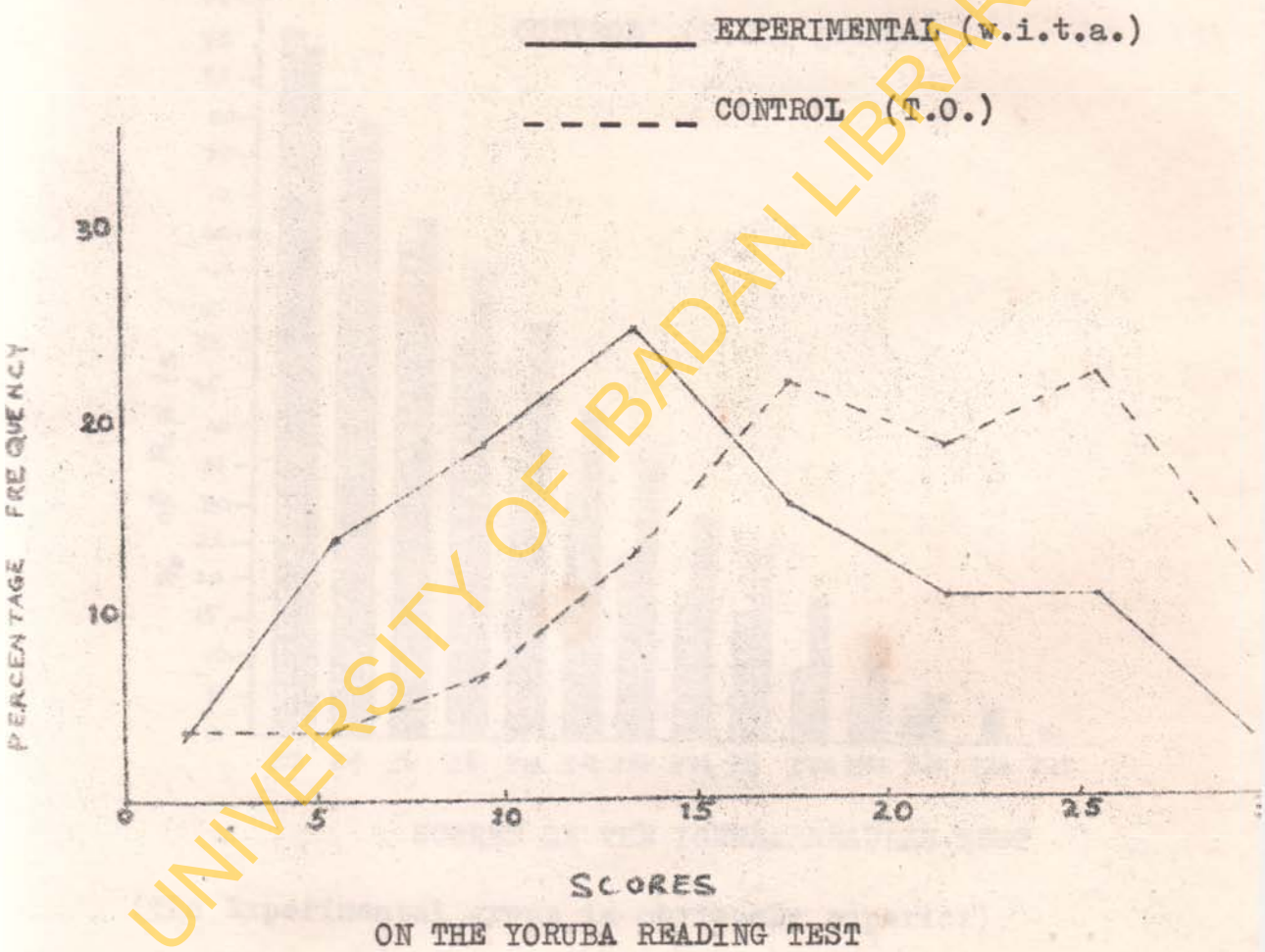


(The Control group is obviously superior)

The vertical bars (black for w.i.t.a. and shaded for T.O.) show that proportions of the two groups scoring up to 4 marks are not different. But greater proportions of the T.O. group than of the w.i.t.a. group scored above marks from 6 to 28. A slightly greater proportion of w.i.t.a. than of T.O. pupils however reached the maximum possible score of 30.

Fig. 6.13. Bar Diagram of Primary Four Pupils' Scores on Yoruba Reading Test - July 1968.

YORUBA READING PRIMARY FOUR, JULY 1968



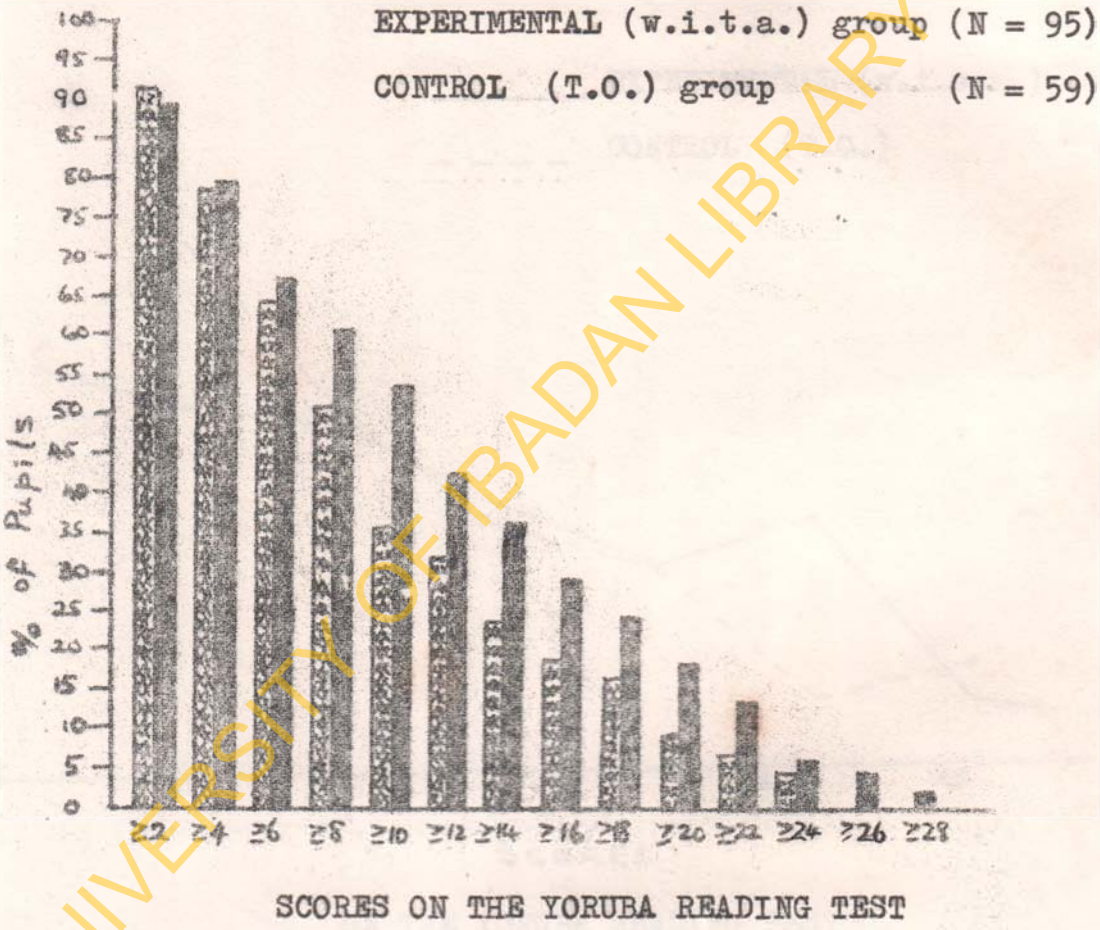
ON THE YORUBA READING TEST

(The Control group is obviously superior)

The frequency polygons (contimuous line for w.i.t.a. and broken line for T.O.) show that a greater proportion of w.i.t.a. pupils had lower scores between 4 and 16, whilst a greater proportion of T.O. than w.i.t.a. pupils had higher scores from 17 to 30.

Fig. 6.14. Frequency Polygons of Primary Four Pupils' Scores on Yoruba Reading Test - July 1968

YORUBA READING PRIMARY THREE, JULY 1968

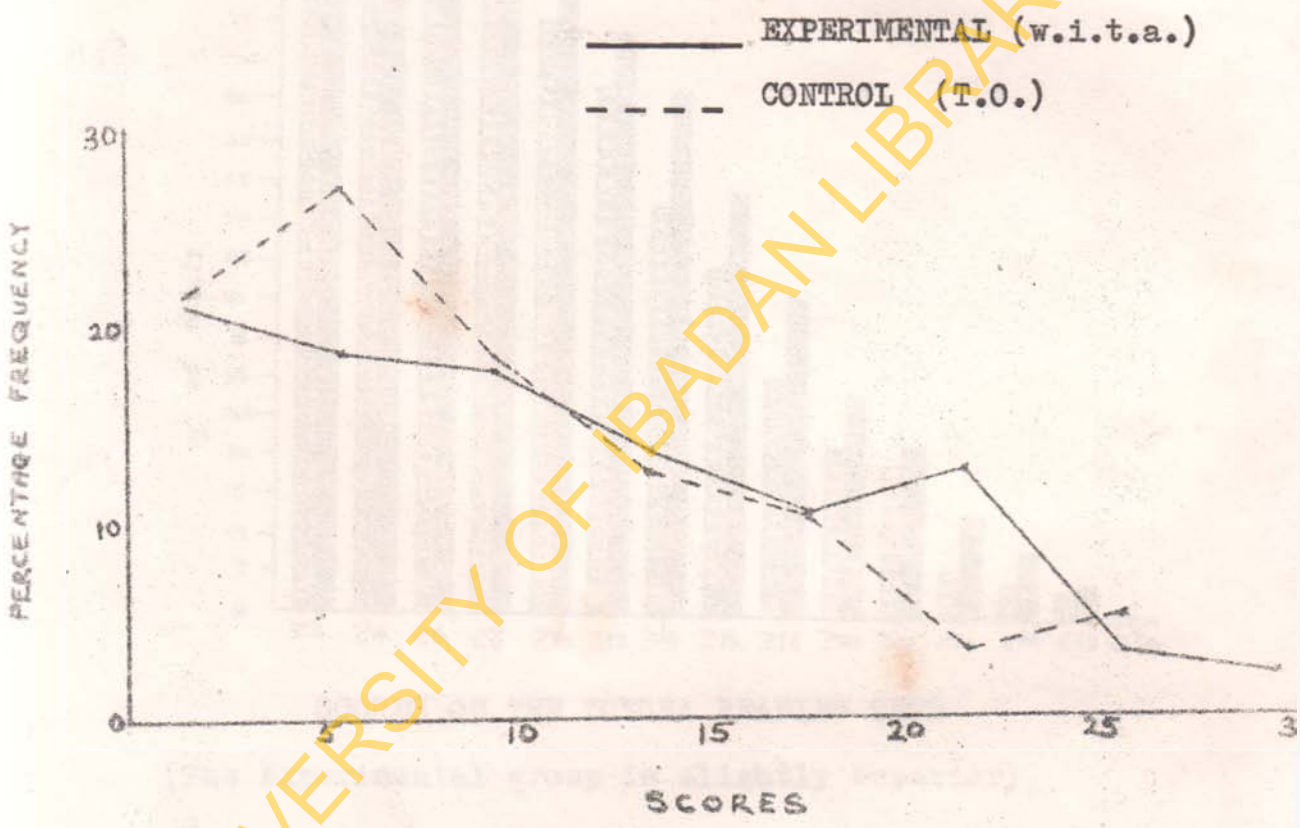


(The Experimental group is obviously superior)

The bars (black for w.i.t.a. and shaded for T.O.) show that greater proportions of w.i.t.a. than of T.O. pupils had scores between 10 and 24. Whilst about 5% of w.i.t.a. pupils scored between 26 and 28 no T.O. pupil scored so high.

Fig. 6.15. Bar Diagram of Primary Three Pupils' Scores on Yoruba Reading Test - July 1968

YORUBA READING, PRIMARY THREE, JULY 1968



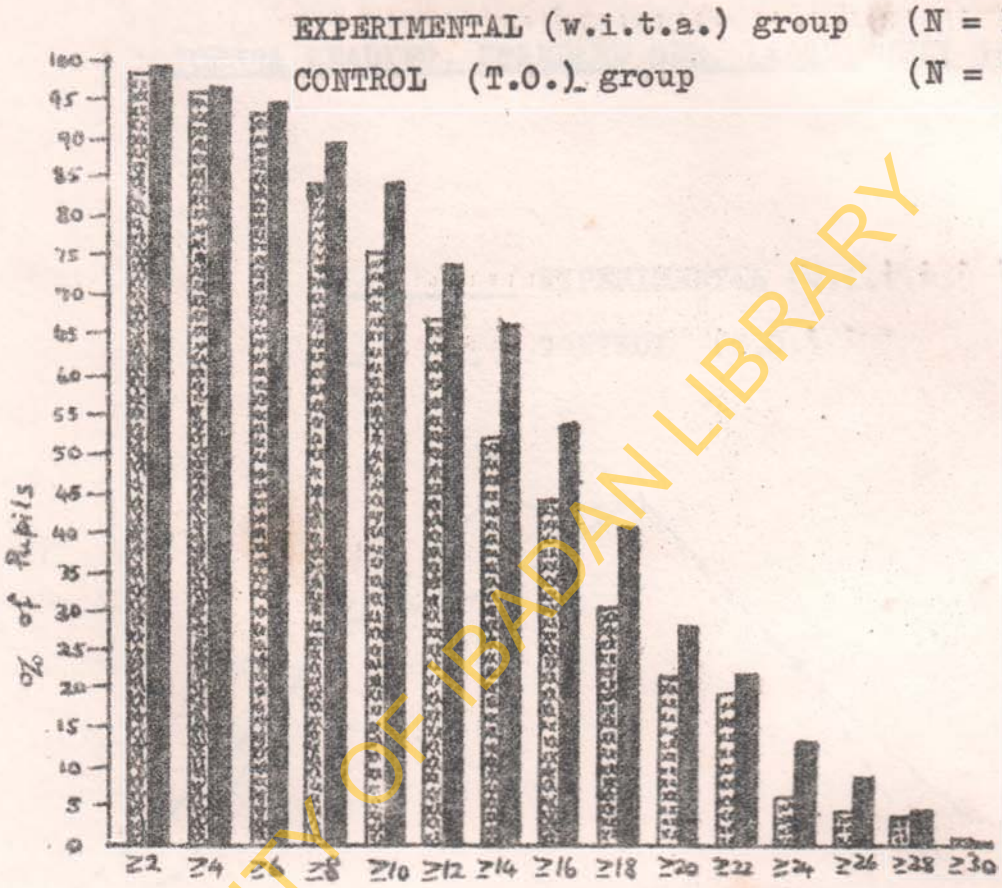
ON THE YORUBA READING TEST

(The Experimental group is slightly superior)

The frequency polygons (continuous line for w.i.t.a. and broken line for T.O.) show that greater proportions of T.O. than of w.i.t.a. pupils had low scores between 2 and 10, whilst greater proportions of w.i.t.a. than T.O. pupils had higher scores between 18 and 30 and no T.O. pupil scored above 26 marks.

Fig. 6.16. Frequency Polygons of Primary Three Pupils' Scores on Yoruba Reading Test - July 1968

YORUBA READING, STANDARD ONE, LAGOS, JULY 1968

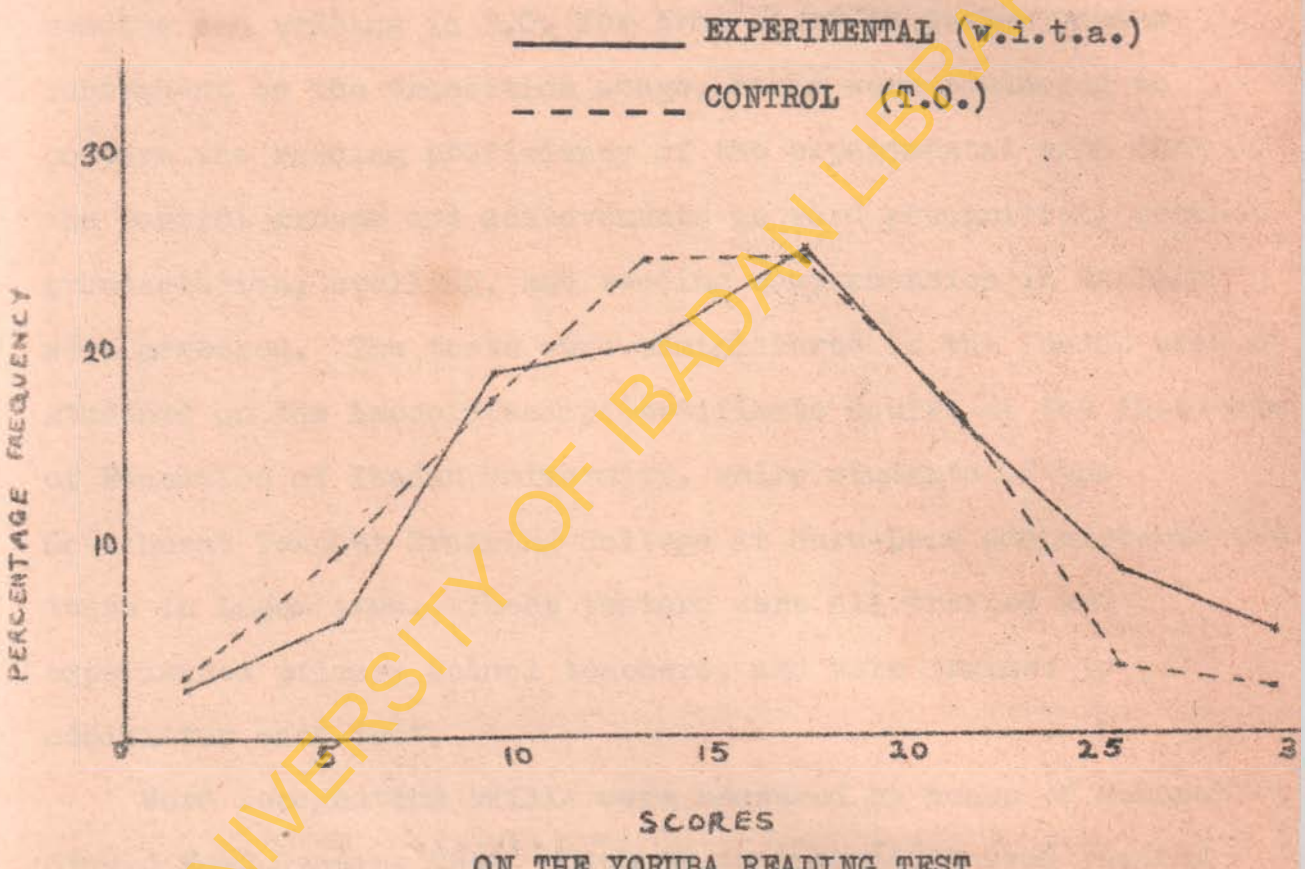


(The Experimental group is slightly superior)

The bars (black for w.i.t.a. and shaded for T.O.) show that proportions of pupils scoring between 2 and 8 are not different for the two groups. But the proportions of the w.i.t.a. group scoring between 10 and 28 are greater than those of the T.O. group

Fig. 6.17. Bar Diagram of Standard One (Lagos) Pupils' Scores on Yoruba Reading Test - July 1968

YORUBA READING, STANDARD ONE, LAGOS, JULY 1968



(The experimental group is slightly superior)

The frequency polygons (continuous line for w.i.t.a. and broken line for T.O.) show that the two groups are not much different but a greater proportion of the w.i.t.a. group than of the T.O. group scored between 22 and 30.

Fig. 6.18. Frequency Polygons of Standard One (Lagos) Pupils' Scores on Yoruba Reading Test - July 1968

CHAPTER VII

RESULTS, III - FINAL ASSESSMENT

A. TESTS CONDUCTED IN DECEMBER, 1968.

When in December 1968, the main experimental groups had been reading and writing in T.O. for from eight to twelve months subsequent to the transition stage, tests were conducted to compare the reading proficiency of the experimental with that of the control groups and achievements in word recognition, correct pronunciation, spelling, and reading comprehension in English were assessed. The tests were administered in the Ibadan area by students on the Associateship Certificate course at the Institute of Education of Ibadan University, while students of the Government Teacher Training College at Suru-Lere administered the tests in Lagos area. These testers were all trained and experienced primary school teachers, and were trained to administer each test.

Word recognition skills were measured by means of Schonell's Graded Word Reading Test[1] which is an individual oral reading test. The results obtained on this test were supplemented by information from the pupils' scores on Part One of Spooncer's[2]

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1. Schonell, F.J., & Schonell, F.E. (1960). Diagnostic and Attainment Testing. London, Oliver & Boyd. 4th Edition. p. 42.
2. Spooncer, F.A. (1962). Group Reading Assessment. U.L.P. Leaflet and Manual of Instructions. U.L.P. 15 pp.

Group Reading Assessment, a pencil and paper test in which words dictated by the tester were to be identified and underlined by the testees amongst other words bearing some visual and/or phonic resemblance to those dictated. An individually administered reading test[1] constructed by the writer was used to assess the pupils' pronunciation in English. Spelling skills were assessed by means of Schonell's Graded Word Read Spelling Test A (S I)[2], which consists of words to be written from dictation. For the assessment of reading comprehension, a pencil and paper Sentence Completion Test[3] constructed by the writer was used, and it was supplemented by the pupils' scores on Part Two of Spooncer's[4] Group Reading Assessment which is also a sentence completion test.

The Means and standard deviation of the scores of the matched pairs of experimental and control classes on each of the various tests were calculated and compared by means of the $\bar{z}$-ratio. The results[5] thus obtained are discussed in succeeding sections of this Chapter.

B. WORD RECOGNITION

The scores of the matched pairs of classes on the Schonell Graded Word Reading Test (in December 1968) are as shown in Table 7.1. Eight of the twelve pairs of matched experimental

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1. See Appendix XVII: Individual Reading (Pronunciation) Test.
2. Schonell, F.J., & Schonell, F.E. (1960). op. cit. p. 71.
3. See Appendix XVIII.
4. Spooncer, F.A., (1962). op. cit. (Part Two of the Test).
5. See also graphic presentation of results on pages 275-289.

and control classes compared showed significant differences at the 95% level of confidence or more. In the case of Group A, that is, Primary Four (1968) classes in Ibadan area, two of the three pairs showed significant differences in favour of the control classes, while the difference within the third pair falls only slightly short of significance at the 95% level. The control group of primary four pupils were therefore superior in word recognition.

In the case of Group 'B' that is, Primary Three (1968) classes in Ibadan area, the experimental classes in all the three pairs compared were superior to the control classes, while three of the six pairs of the Standard One (1968) classes in Lagos showed significant differences in favour of the experimental groups. Among Primary Three and Standard One pupils therefore, the experimental groups were superior to the control groups. These results thus confirmed almost exactly those obtained in July 1968*, except that one pair of classes in the Lagos area (Nos. 22 & 23) which had shown significant difference in favour of the experimental group in July showed no such difference in December, whilst one pair (Nos. 24 & 25) within which there had been no significant difference in July, showed significant difference at the 99% level in favour of the experimental group in December. The relative attainments of the experimental and control classes in word recognition skills in December 1968 were therefore largely as they had been in July 1968.

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* c.f. Table 6.1.

Table 7.1: Comparative Scores by matched pairs of of classes on the Schonell Graded Word Reading Test - December 1968.

GROUP	Experimental Classes				Control Classes				Z for Diff.
	Class No+	Mean	s.d.	N	Class No+	Mean	s.d.	N	
'A' Primary Four (Ibadan)	1	19.65	12.38	17	2	34.37	15.57	19	-3.067**
	3	15.87	8.38	22	4	20.61	7.23	18	-1.874
	5	15.83	18.32	17	6	30.75	23.02	16	-2.376*
	ALL	17.00	9.68	56	ALL	28.61	17.99	53	-3.425**
'B' Primary Three (Ibadan)	8	17.00	11.51	23	9	8.34	4.64	15	3.149**
	10	23.06	14.01	19	11	14.50	6.98	20	2.332*
	12	19.81	9.01	16	13	7.72	4.95	14	4.478**
	ALL	19.76	12.08	58	ALL	10.67	6.61	49	4.887**
'C' Std. One (Lagos)	22	19.50	16.24	30	23	18.00	15.78	40	0.382
	24	21.50	19.10	30	25	13.75	7.85	28	2.013*
	26	30.60	29.56	32	27	20.24	22.78	34	1.565
	28	36.21	27.18	38	29	21.46	17.51	37	2.762**
	30	16.52	9.38	31	31	21.09	9.81	33	-1.881
	32	26.59	17.26	24	33	15.87	16.80	31	2.266*
	ALL	25.60	22.56	185	ALL	18.60	15.38	203	3.535**

\+ 'Class No.' refers to the numbers in Tables 4.4, 4.5, and 4.7.

* Difference significant at the 95% level.

** Significant at the 99% level or more.

These results obtained on the Schonell Graded Word Reading Test as described above were also confirmed by those obtained on Part One of Spooncer's Group Reading Assessment as shown in Table 7.2.

Table 7.2: Comparative Scores by Matched Pairs of Classes on Part One of Spooncer's Group Reaing Assessment - December 1968.

GROUP	Experimental Classes				Control Classes				Z for Diff.
	Class No+	Means	s.d.	N	Class No+	Mean	s.d.	N	
'A' Primary Four (Ibadan)	1	10.35	3.05	17	2	9.84	1.96	19	0.573
	3	8.73	2.50	22	4	11.17	2.34	18	-3.089*
	5	7.94	1.83	17	6	8.29	2.74	17	-0.420
	ALL	8.99	2.74	56	ALL	9.77	2.68	54	-1.538
'B' Primary Three (Ibadan)	8	7.44	2.81	23	9	7.27	2.02	15	0.211
	10	8.11	2.53	19	11	7.75	2.82	20	0.409
	12	8.50	2.09	16	13	6.07	2.09	14	3.076*
	ALL	7.95	2.73	58	ALL	7.12	2.54	49	1.596
'C' Std. One (Lagos)	22	7.14	2.91	29	23	8.31	2.97	38	-1.591
	24	6.45	2.54	31	25	6.25	3.34	28	0.253
	26	8.38	3.58	32	27	8.06	3.29	34	0.372
	28	11.03	2.88	38	29	7.34	3.51	38	4.940**
	30	8.30	3.30	30	31	8.42	2.79	33	0.015
	32	9.88	2.78	24	33	7.00	2.95	31	3.646**
	ALL	8.38	3.39	184	ALL	8.39	3.76	202	-0.030

Although the differences obtained on the latter test are in the same directions as those obtained on the Schonell Word Reading Test, however, they are not as many. The writer feels that Part One of Spooncer's test is liable to be complicated by differences in the pronunciation of the words in this test by different testers, since the identification of the words by the testees depends on their hearing such words properly from the tester. The results of such a test are therefore not likely to agree too closely with those obtained from a test in which the testees themselves pronounce the words.

C. ENGLISH PRONUNCIATION

An individually administered reading (pronunciation) test[1], consisting of ten short sentences, was used to assess the quality of the pupils' English pronunciation. Each sentence contained, among others, four underlined words in which the articulation of certain contrastive sounds could be assessed.[2] One mark was awarded for the correct pronunciation of each word underlined, and another mark for a smooth rendering of the sentence with correct rhythm and intonation. The scores obtained on the ten sentences were summed for each pupil, and from these the Mean score and standard deviation were calculated for each class. Table 7.3 shows the scores of the matched pairs of classes on the English Pronunciation Test.

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1. See Appendix XVII (a) & (b).
2. See Section F of the nineth chapter for a discussion of the question of a standard model of English pronunciation.

Table 7.3: Comparative Scores by matched Pairs of Classes on the Individual Pronunciation Test - December 1968

GROUP	Experimental Classes				Control Classes				Z for Diff.
	Class No+	Mean	s.d.	N	Class No.+	Mean	s.d.	N	
'A' Primary Four (Ibadan)	1	22.88	8.22	17	2	31.47	5.86	19	-3.464**
	3	16.95	9.15	22	4	28.83	8.99	18	-4.014**
	5	13.06	6.89	17	6	21.82	13.36	17	-2.330*
	ALL	17.61	9.06	56	ALL	27.56	10.47	54	-5.265**
'B' Primary Three (Ibadan)	8	20.64	12.06	22	9	6.79	3.31	14	4.964**
	10	26.26	10.94	19	11	12.70	8.16	20	4.251**
	12	12.31	8.48	16	13	11.07	7.66	14	2.046*
	ALL	21.58	11.30	57	ALL	10.50	7.73	48	5.862**
'C' Std. One (Lagos)	22	24.09	14.93	33	23	24.33	17.21	40	0.063
	24	18.61	15.78	31	25	15.46	10.97	28	0.882*
	26	27.06	14.71	32	27	19.09	16.22	32	2.028*
	28	29.92	15.47	39	29	29.97	12.01	38	-0.016
	30	29.74	10.53	31	31	30.64	12.37	33	-0.310
	32	32.50	12.64	24	33	21.34	11.97	32	3.282**
	ALL	26.83	14.90	190	ALL	23.89	14.83	203	1.960*

\+ 'Class No.' refers to the numbers in Tables 4.4, 4.5, and 4.7.

* Difference significant at the 95% level.

** Significant at the 99% level or more.

According to the scores shown in Table 7.3, the control classes of Group 'A' (i.e. Primary Four) pupils were superior in English

pronunciation to the experimental classes, for all the three pairs of classes compared showed significant differences in favour of the control classes. But in the case of the Group 'B' (i.e. Primary Three) pupils, the experimental classes proved superior. Of the six pairs of experimental and control classes of Group 'C' (i.e. Standard One, Lagos) pupils, two showed significant differences in favour of the experimental classes. It is clear therefore that the experimental classes of Primary Three and Standard One pupils in Lagos were superior in English pronunciation to their control counterparts, although the difference was not so large in the case of Standard One pupils. The control classes, however, were superior to their experimental counterparts in the case of Primary Four pupils. It may be said that those classes which were superior in word recognition skills, as described in Section B above were also superior in pronunciation.

There is thus an indication that w.i.t.a. helped the experimental classes of Primary Three (Ibadan) and Standard One (Lagos) pupils, who had started the experimental programme in their first year in school, to develop superior word recognition and pronunciation skills, whereas it did not appear to have helped similarly those in Primary Four (Ibadan) who had started the experimental programme in their second year in school. This confirms the results obtained in June 1967 (as described

in Section B of the Fifth Chapter) before the pupils transferred to reading in T.O.

D. SPELLING

Achievement in spelling was measured by means of two tests. The first was Schonell's Graded Word Spelling Test (A)[1] which consists of words to be written from dictation. The second was a group pencil and paper test constructed by the writer, in which the only one correct spelling of each word was to be identified from amidst four different plausible spellings of the word: there were ten words in the test and the tester dictated and illustrated orally in a sentence the word whose spelling should be identified in each case.[2]

The mean scores and standard deviations for the matched pairs of classes on the Schonell Graded Word Spelling Test and the Group Spelling Test are shown in Tables 7.4 and 7.5, respectively.

Inspection of Table 7.4 reveals that only three of the twelve pairs of matched experimental and control classes compared were significantly different. One of these differences is in favour of a control class of Group A (i.e. Primary Four), another is in favour of an experimental class of Group B (i.e. Primary Three), while the third difference is also in favour

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1. Schonell, F.J. & Schonell, F.E. (1960). Diagnostic and Attainment Testing. Edinburgh, Oliver & Boyd. 4th Edition, p. 71.
2. See Appendix XIX.

Table 7.4: Comparative Scores by Matched Pairs of Classes on the Schonell Graded Word Spelling Test 'A' - December 1968.

GROUP	Experimental Classes				Control Classes				Z for Diff.
	Class No.+	Mean	s.d.	N	Class No.+	Mean	s.d.	N	
'A' Primary Four (Ibadan)	1	12.62	6.98	17	2	16.18	8.07	19	-1.380
	3	9.14	7.64	22	4	14.83	6.33	18	-2.507*
	5	6.03	4.68	17	6	7.91	7.85	17	-0.825
	ALL	9.25	7.14	56	ALL	13.13	8.36	54	-2.587**
'B' Primary Three (Ibadan)	8	12.76	8.77	23	9	14.23	6.57	15	0.592
	10	15.87	8.68	19	11	11.30	7.44	20	1.712
	12	13.25	6.32	16	13	2.93	3.01	14	5.639**
	ALL	13.91	8.26	58	ALL	9.81	7.71	49	2.628**
'C' Std. (Lagos)	22	12.06	7.85	32	23	14.54	10.26	39	-1.132
	24	6.25	6.03	28	25	9.36	7.01	28	-1.1757
	26	10.68	9.69	31	27	10.75	9.80	32	0.034
	28	15.69	11.23	39	29	17.22	10.24	37	-0.617
	30	12.03	7.39	29	31	14.27	7.20	33	-1.164
	32	18.00	9.71	24	33	10.38	7.58	32	3.123**
	ALL	12.49	9.61	183	ALL	13.00	9.30	201	-0.580

+ 'Class No.' refers to the numbers in Tables 4.4, 4.5, and 4.7.

* Difference significant at the 95% level.

** Significant at the 99% level or more.

of an experimental class of Group C (i.e. Standard One, Lagos). There was thus no consistent evidence from this test to show that either the experimental or the control group as a whole was superior to the other, although comparison of the average score over all the

experimental classes in each Group with the average score over all the control classes in the Group shows that the control classes were superior in the case of Group A, and the experimental classes were superior in the case of Group B, while there was no statistically significant difference between the two sets in the case of Group C. Table 7.5, in which scores on the second spelling test are listed, confirms the conclusion that there was no consistent difference between experimental and control groups, because it shows that only one of the twelve pairs of classes compared indicated significant differences within the pair.

There had thus been a change from the pattern obtained in July 1968*. The superiority of the control classes of Group A (i.e. Primary Four), and of the experimental classes of Group B (i.e. Primary Three) over their counterparts seems to have been reduced. Similarly, the slight superiority of the control classes of Group C (i.e. Standard One, Lagos) over their experimental counterparts seems to have nearly disappeared. It may be said therefore that there was a progressive tendency for comparable classes to approach homogeneity in their average spelling skills and it is not possible to say at this stage that either w.i.t.a. or T.O. produced better spelling than the other. What is clear however is that w.i.t.a. did not have such adverse effects on the subsequent T.O. spelling abilities of the experimental group as had been feared by some people.

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* cf. Table 6.3.

Table 7.5: Comparative Scores by Matched Pairs of Classes on the Group Spelling Test - December 1968.

GROUP	Experimental Classes				Control Classes				Z for Diff.
	Class No.+	Mean	s.d.	N	Class No.+	Mean	s.d.	N	
'A' Primary Four (Ibadan)	1	7.29	1.84	17	2	7.74	1.41	19	-0.806
	3	5.82	2.05	22	4	7.06	1.87	18	-1.944
	5	6.12	1.68	17	6	6.35	1.97	17	0.354
	ALL	6.35	1.99	56	ALL	7.07	1.90	54	-2.946
'B' Primary Three (Ibadan)	8	5.91	1.62	23	9	5.33	1.62	15	1.049
	10	6.16	2.30	19	11	5.93	1.94	20	0.300
	12	6.88	1.27	16	13	3.71	1.32	14	6.443**
	ALL	6.88	2.28	58	ALL	5.12	1.98	49	4.293**
'C' Std. One (Lagos)	22	6.69	2.17	32	23	6.82	2.45	39	-0.234
	24	5.96	2.46	28	25	6.07	2.05	28	0.179
	26	6.13	2.45	31	27	6.47	2.19	32	-0.573
	28	7.56	2.21	39	29	7.05	1.84	37	1.081
	30	6.17	2.07	29	31	7.06	1.61	33	-1.039
	32	6.33	2.39	24	33	6.31	1.70	32	0.034
	ALL	6.54	2.39	183	ALL	6.87	2.06	201	-1.435

+ 'Class No.' refers to the numbers in Tables 4.4, 4.5, and 4.7.

** Difference significant at the 99% level or more.

E. COMPREHENSION

Reading comprehension was assessed by means of a sentence completion test[1] consisting of sentences to be completed by filling certain blanks in them with an appropriate word or words selected from a list provided at each location. The selection of the appropriate word or words is dependent upon the understanding of the completed sentence[2]. The results obtained on this test are shown in Table 7.6, and it is supplemented by information collected from the pupils' scores on Part Two of Spooncer's Group Reading Assessment (as shown in Table 7.7) which is also a sentence completion test.

It may be observed from Table 7.6. that significant differences were obtained within only three of the twelve pairs of matched experimental and control classes compared. One of these differences (i.e. between classes Nos. 12 & 13) shows that one experimental class of Group B (i.e. Primary Three) was superior to its control class. Another significant difference (between classes Nos. 22 & 23) shows that one control class (No. 23) among the Standard One classes was superior to its experimental counterpart, while the third significant difference (between Nos. 30 & 31) is in favour of the experimental class. There is thus no consistent evidence to show that one treatment (i.e. w.i.t.a. or T.O.) is superior to the other in producing better reading comprehension scores.

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1. See Appendix XVIII: Sentence Completion Test.
2. See page 320

Table 7.6: Comparative Scores by Matched Pairs of Classes on the Sentence Completion (Comprehension) Test - December 1968.

GROUP	Experimental Classes				Control Classes				Z for Diff.
	Class No.+	Mean	s.d.	N	Class No.+	Mean	s.d.	N	
'A' Primary Four (Ibadan)	1	10.12	3.92	17	2	9.11	3.77	19	0.758
	3	9.50	2.69	22	4	8.56	2.81	18	1.044
	5	6.29	1.99	17	6	7.94	4.53	17	-1.289
	ALL	8.71	3.37	56	ALL	8.56	3.77	54	0.217
'B' Primary Three (Ibadan)	8	6.52	2.15	23	9	6.40	1.83	15	0.179
	10	7.79	3.02	19	11	8.15	3.68	20	-0.336
	12	7.00	3.46	16	13	4.21	1.82	14	2.735**
	ALL	7.07	2.92	58	ALL	6.51	3.65	49	0.818
'C' Std. One (Lagos)	22	6.83	3.81	29	23	11.79	5.22	38	-4.429**
	24	7.29	3.48	31	25	7.04	3.68	27	0.260
	26	6.38	3.65	31	27	6.70	3.88	33	-0.346
	28	10.80	5.35	39	29	11.61	4.40	38	-0.717
	30	9.07	2.36	30	31	7.58	3.53	33	1.961*
	32	10.04	4.90	24	33	9.52	3.32	31	0.437
	ALL	8.46	4.39	184	ALL	9.44	4.62	200	-2.130**

\+ 'Class No.' refers to the numbers in Table 4.4, 4.5, and 4.7.

* Difference significant at the 95% level.

** Significant at the 99% level or more.

Table 7.7: Comparative Scores by Matched Pairs of Classes on Part Two of Spooncer's Group Reading Assessment - December, 1968.

GROUP	Experimental Classes				Control Classes				z for diff.
	Class No.+	Mean	s. d.	N	Class No.+	Mean	s. d.	N	
'A' Primary Four (Ibadan)	1	6.00	1.61	17	2	5.53	3.23	19	0.777
	3	8.64	2.86	22	4	5.22	1.62	18	4.648**
	5	4.71	1.56	17	6	6.71	1.34	17	-3.891**
	ALL	7.35	2.76	56	ALL	5.80	2.40	54	3.100**
'B' Primary Three (Ibadan)	8	4.74	2.34	23	9	5.53	1.50	15	1.234
	10	5.32	1.92	19	11	5.00	2.24	20	0.468
	12	5.06	2.41	16	13	4.29	1.83	14	0.958
	ALL	5.02	2.53	58	ALL	4.96	1.99	49	0.133
'C' Std. One (Lagos)	22	4.86	2.45	29	23	7.58	2.89	38	-4.103**
	24	5.91	2.32	31	25	5.79	2.31	28	0.196
	26	6.13	1.83	32	27	5.59	2.22	34	1.065
	28	7.47	2.23	38	29	6.71	2.87	38	1.269
	30	6.10	1.91	30	31	4.85	2.56	33	2.178*
	32	6.67	2.46	24	33	7.07	3.03	31	-1.922
	ALL	6.29	2.37	184	ALL	6.42	2.79	202	-0.482

+ 'Class No.' refers to the numbers in Tables 4.4, 4.5, and 4.7

* Difference significant at the 95% level.

** Significant at the 99% level or more.

The scores shown in Table 7.7 lend support to the conclusion that one group was not consistently better than the other. For although four pairs of classes indicate significant differences between the experimental and control classes within each pair, these differences are not consistently in favour of either w.i.t.a. or T.O. within any given group (i.e. A, B, or C). Explanation for differences obtained in comprehension must therefore be sought in other directions than in the method of instruction in English.

F. COMPOSITE READING ACHIEVEMENT

Spooncer's Group Reading Assessment is a tripartite test of reading achievement which includes word identification, sentence completion and a form of pronunciation test through the selection of homonyms. Total scores on this test therefore provided a basis for the comparison of experimental and control classes on their general reading achievement. According to the scores listed in Table 7.8, there is no consistent or conclusive evidence that either w.i.t.a. or T.O. produced better over-all reading performance than the other. For, of the three pairs of matched experimental and control classes which showed significant differences within each pair, two are in favour of the experimental classes and one in favour of a control class.

The general reading performances of the two groups therefore did not differ markedly, although the experimental classes of

Groups B and C have been found to be superior to the control classes in word recognition and pronunciation skills, while the control classes of Group A were superior in these skills, as described in earlier sections of this chapter.

Table 7.8: Comparative Scores by Matched Pairs of Classes on Spooncer's Group Reading Assessment - December, 1968.

GROUP	Experimental Classes				Control Classes				z for diff.
	Class No.+	Mean	s.d.	N	Class No.+	Mean	s.d.	N	
'A' Primary Four (Ibadan)	1	21.91	4.01	17	2	19.13	4.82	19	1.829
	3	23.86	7.35	22	4	20.50	4.10	18	1.778
	5	17.56	3.00	17	6	19.09	4.84	17	-1.077
	ALL	21.35	6.00	56	ALL	19.57	4.65	54	1.728
'B' Primary Three (Ibadan)	8	16.59	3.98	23	9	16.77	3.25	15	-0.148
	10	17.03	4.10	19	11	17.70	3.97	20	-0.504
	12	19.00	4.03	16	13	14.50	3.69	14	3.082**
	ALL	17.40	4.16	58	ALL	16.50	3.87	49	1.139
'C' Std. One (Lagos)	22	14.66	5.02	29	23	18.95	6.28	38	-3.064**
	24	15.61	4.41	31	25	16.21	5.00	28	-0.480
	26	18.81	5.73	32	27	17.41	5.46	34	1.000
	28	22.47	5.31	38	29	18.53	6.40	38	2.876**
	30	16.80	4.10	30	31	17.00	4.82	33	-0.174
	32	20.50	4.79	24	33	20.94	6.58	31	-0.282
	ALL	17.99	5.46	184	ALL	19.53	6.75	202	-0.408

+ 'Class No.' refers to the numbers in Tables 4.4, 4.5, and 4.7.

** Difference significant at the 99% level or more.

G. SEX DIFFERENCES IN READING ACHIEVEMENT

In order to discover whether there were any consistent differences between boys and girls in their levels of reading attainments, the mean scores of boys and girls within each experimental and control sub-group were calculated separately. These mean scores, by sex, within each group on the Schonell Graded Word Reading Test, the Individual Pronunciation Test, the Schonell Graded Word Spelling Test, the Sentence Completion Test, and Spooncer's Group Reading Assessment, are shown in Tables 7.9, 7.10, 7.11, 7.12, and 7.13, respectively.

Only six of the thirty pairs of comparisons made, by means of the z-ratio, between boys and girls' mean scores show significant differences, and they are all in favour of the boys. These differences are observed however in only two of the six sub-groups, viz. four within the experimental sub-group of Primary Three and two within the experimental sub-group of Standard One. They were probably either chance errors or an indication of a genuine difference between the boys and the girls in the particular sub-groups, since the difference was observed in a minority of cases. It seems therefore that neither of the two sex-groups was consistently superior to the other in any particular aspect of reading. But, considering that both the significant differences obtained and a majority of the slight and statistically insignificant differences were

in favour of the boys, it may be reasonably said that boys tended to perform slightly but not significantly better than girls in reading. Neither w.i.t.a. nor T.O. favoured one sex-group more than the other.

The lack of consistent differences between boys and girls within the same 'treatment' groups was also observed in the June 1967 tests, as described in Section B(iv) of the fifth chapter. It may be said that the relative performances of boys and girls within the same groups remained unchanged after the transition to T.O.

Table 7.9: Boys' and Girls' Scores on the Schonell Graded Word Reading Test - December, 1968.

GROUP	BOYS			GIRLS			z for difference between Means
	Mean	s.d.	N	Mean	s.d.	N	
PRIM. IV							
Exp.	17.25	8.94	40	16.37	11.95	16	0.271
Cont.	30.00	18.98	35	25.89	15.51	18	0.824
PRIM. III							
Exp.	21.77	11.71	43	14.00	11.20	15	2.220*
Cont.	11.37	7.67	32	9.35	3.46	17	1.232
STD. ONE							
Exp.	28.74	24.19	95	22.28	20.11	90	1.970*
Cont.	18.94	17.34	116	17.17	12.32	87	0.843

* Difference significant at 95% level of confidence.

Table 7.10: Boys and Girls' Scores on the Individual Pronunciation Test - December, 1968.

GROUP	B O Y S			G I R L S			z for diff. between Means
	Mean	s.d.	N	Mean	s.d.	N	
PRIM. IV							
Exp.	17.50	8.87	40	17.88	9.60	16	-0.136
Cont.	27.67	9.30	36	27.33	12.47	18	0.070
PRIM. III							
Exp.	23.71	10.56	42	15.60	10.62	15	2.473*
Cont.	11.94	8.58	31	8.06	4.93	17	1.945
STD. ONE							
Exp.	27.97	13.87	100	25.67	14.95	90	1.090
Cont.	23.13	14.28	117	24.93	15.48	86	-0.841

* Difference significant at the 95% level of confidence.

Table 7.11: Boys' and Girls' Scores on the Schonell Graded Word Spelling Test 'A' - December, 1968.

GROUP	B O Y S			G I R L S			z for diff. between Means
	Mean	s.d.	N	Mean	s.d.	N	
PRIM. IV							
Exp.	10.15	6.74	40	6.88	7.41	16	1.486
Cont.	13.11	8.03	36	13.17	8.99	18	-0.023
PRIM. III							
Exp.	15.57	7.90	43	9.17	7.36	15	2.759*
Cont.	10.13	8.27	32	9.21	6.36	17	0.422
STD. I							
Exp.	13.31	10.04	96	11.59	9.03	87	1.211
Cont.	12.66	9.34	116	13.46	9.23	85	-0.601

* Difference significant at the 95% level of confidence.

Table 7.12: Boys' and Girls' Scores on the Sentence Completion (Comprehension) Test - December, 1968

GROUP	B O Y S			G I R L S			z for diff. between Means
	Mean	s.d.	N	Mean	s.d.	N	
PRIM. IV							
Exp.	8.58	3.61	40	9.06	2.63	16	-0.054
Cont.	8.61	3.89	36	8.44	3.56	18	0.157
PRIM. III							
Exp.	7.28	3.02	43	6.47	2.50	15	0.990
Cont.	7.28	3.26	32	7.94	4.18	17	-0.550
STD. I							
Exp.	9.08	4.31	95	7.79	4.38	89	2.003*
Cont.	9.44	4.27	117	9.45	5.07	83	-0.015

* Difference significant at the 95% level of confidence

Table 7.13: Boys' and Girls' Scores on Spooncer's Group Reading Assessment Test - December, 1968.

GROUP	B O Y S			G I R L S			z for diff. between Means
	Mean	s.d.	N	Mean	s.d.	N	
PRIM. IV							
Exp.	22.05	6.41	40	20.37	5.31	16	0.982
Cont.	19.56	4.51	36	19.61	4.91	18	-0.035
PRIM. III							
Exp.	17.99	4.23	43	15.70	3.41	15	2.040*
Cont.	17.00	4.09	32	15.56	3.30	17	1.309
STD. I							
Exp.	18.75	6.12	95	17.75	5.16	89	1.190
Cont.	19.43	6.76	118	19.68	6.75	84	-0.284

* Difference significant at the 95% level of confidence.

H. EVALUATION OF PUPILS' READING ATTAINMENTS ACCORDING TO BRITISH NORMS.

Schonell's Graded Word Reading Test and Graded Word Spelling Test, as well as Spooncer's Group Reading Assessment have norms based on British populations. These norms were used to provide information on the relative performance of pupils participating in the experiment although British norms are by no means directly applicable to Nigerian populations for whom the English language is a second language and formal education before age six is very rare.

The median scores of the matched experimental and control classes in each group on the three tests mentioned above were obtained. These were then converted to Reading or Spelling Ages, as the case may be, according to the norms provided by the author of each test. The results obtained are shown in Table 7.14

The reading and spelling ages shown for the different groups in Table 7.14 indicate that the pupils who participated in the experiment had reading and spelling attainments much below the standards for British populations - considering their chronological ages. According to Schonell's norms, Nigerian children in Primary classes Three and Four were about 2½ to 3 years below the standards expected of British children in reading and spelling, while those in Standard One (Lagos) were about 2 to 2½ years below such standards. The performance of pupils in Lagos was therefore relatively better than that of pupils in the

Table 7.14
Median Reading and Spelling Ages from Three Tests: according to British norms - December, 1968.

GROUP	Median Reading Age (Yrs.) from Schonell's Graded Word Reading Test	Median Reading Age (Yrs.) from Spooncer's Group Reading Assessment	Median Spelling Age from Schonell's Graded Word Spelling Test
PRIM. IV (Median C.A. = 10 years)			
Experimental	6.5	7.9	5.6
Control	7.3	7.8	6.4
PRIM. III (Median C.A. = 9 years)			
Experimental	6.8	7.6	6.5
Control	6.0	7.5	5.9
STD. I (Median C.A. = 8½ years)			
Experimental	6.8	7.7	6.1
Control	6.5	7.8	6.2

Median C.A. = Median Chronological Age.

Ibadan area. Although, for reasons stated earlier in this section, the performances of Nigerian children in reading and spelling could be expected to fall below those expected of

British children, the gap might appear surprisingly wider than anticipated. But when one considers the extent of the British children's contact with spoken and written English both at home and at school, through the radio, television and newspapers, as compared with that of Nigerian children, this difference is not so surprising.

It may be observed that spelling ability lags behind reading ability for all groups, as shown in Table 7.14, and the attainments of the Primary Four pupils in spelling are no better than those of Primary Three and Standard One pupils who were relatively younger. Probably more conscious effort at teaching spelling is called for on the part of teachers since English spelling is so phonically irregular and inconsistent.

It is interesting to note that the reading ages obtained from Spooncer's norms are consistently higher than those obtained from Schonell's norms as shown in the second and third columns of Table 7.14. This difference may be accountable to any or all of three reasons. The first is that a reading test consisting of words selected and arranged in order of their difficulty, such as Schonell's test, is not the same as a composite one, such as Spooncer's, which is much more than the sounding of words. But since Spooncer[1] has tried to make the

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1. Spooncer, Frank A. (1964). Group Reading Assessment: Manual of Instructions. p. 15. London, U.L.P.

standards of his own test conform to those of the word reading tests, this is probably not a very important reason for the discrepancy.

The second probable reason is that Spooncer's Reading Assessment, being a paper-and-pencil test administered to groups of children, allows for cheating on the parts of pupils unless proper precautions are taken by the tester. Further more, since the tester plays a more important role in this test through the instructions he has to give to the testees, greater variability is expected than in Schonell's test where instructions from the tester are minimal. This reason probably contributed to the discrepancy between the results obtained on the two tests.

The third reason is connected with Spooncer's standardisation procedure. Spooncer had found that the standards of the individual reading tests (Vernon's and Schonell's Graded Word Reading Tests) were not sufficiently severe for children at the time of his own testing, and he concluded that standards had improved. In other words, children of a particular age group obtaining the median score for that age group on his own test would have been given a higher Reading Age on the older individual reading tests. But then, Spooncer turned round and decided to make the standards of his own test conform to those of the older tests; thus making his own standards more

lenient too. He appears to have overlooked one important consideration that, because those individual tests (Schonell's and Vernon's) had long been used for testing children, books and other instructional materials might have consciously incorporated some of the words contained in the tests and some teachers might consciously have been teaching towards those tests. It meant therefore that when these tests were given subsequently, they would indicate median reading ages higher than expected, so that the standards would appear lenient. But a new test like Spooncer's does not suffer from such familiarity, so that children who would have got a higher reading age on the older individual and more familiar tests would have a lower but probably more accurate reading age on it. By turning round to make his own standards conform to those of the older tests, Spooncer was making his standards less severe. When the two types of tests were given in a country like Nigeria where both tests were equally unfamiliar, a median reading age obtained from Schonell's test would be lower than that obtained from Spooncer's. This is exactly what happened in this case. Probably if Spooncer had retained the norms which he had obtained originally, much more similar results might have been obtained in Nigeria on his own test and Schonell's test.

It is important to develop reading tests with norms based on Nigerian populations so that the reading attainments of individual children or groups can be compared with such norms.

I. THE RELATIVE DIFFICULTY OF WORDS

The number of pupils in each group who misread or could not read each of the first sixty words on Schonell's Graded Word Reading Test was obtained, and this was converted to per-centage proportion of the total number of pupils tested in that group. The words were then arranged in rank order so that the one with the lowest proportion of errors was at the top and that with the highest proportion at the bottom.

The rank order obtained for control pupils agreed more closely with Schonell's arrangement than did the rank order obtained for experimental pupils. The rank correlation of Schonell's arrangement of the words with the order obtained for pupils in the control group was .90, whereas its correlation with the order obtained for experimental pupils was .85.

The ranking of each word for all pupils tested was compared with its ranking according to Schonell's arrangement. Similarly, the ranking of each word according to the results obtained for all pupils in the experimental group was compared with its ranking on the results obtained for all pupils in the control group. A bried description of the results follows.

(i) Comparison with Schonell's arrangement of the Words in Order of Difficulty.

Although it is clear, as already shown in Table 7.14, that the pupils did not attain the standards set down by Schonell in

terms of reading age according to British norms, yet the analysis of errors showed that Nigerian pupils found certain words relatively easier than others which Schonell's arrangement had placed as more difficult, and vice versa. The arbitrary criterion used by the writer was to regard as significant a difference of more than five rank places (in either direction) between the ranking of a word according to the performance of Nigerian pupils and its ranking according to Schonell's arrangement, because such a difference would mean a change of about six months or more in the reading-age placement of that word. If the shift of the word was towards a higher rank it was regarded as more difficult than Schonell's arrangement would suggest.

According to this criterion, fourteen of the first sixty words were found to be relatively more difficult and ten easier than indicated in Schonell's arrangement. Table 7.15 shows these two sets of words.

The words which were found to be relatively more difficult than suggested by their position in Schonell's presentation, as shown in the first column of Table 7.15, are either unfamiliar to the pupils or irregularly spelt or both. One apparent surprise, however, is the inclusion of the short and relatively phonically consistent word 'bun'. But the word is not only unfamiliar to the pupils, but its second letter - **u** - normally

represents in Yoruba a sound slightly similar to the vowel sound in 'food', which may have misled the pupils. It does appear that pupils find words they encounter frequently relatively easier to recognise than phonically simple but unfamiliar ones. It was observed for instance, that a larger proportion of pupils made errors on the simple word 'frog' than on such words as playing, road, clock, little, and school, which were more familiar because they had been read by the pupils in their books.

Table 7.15

Words Found Relatively more Difficult or Easier than indicated by Schonell's Arrangement.

WORDS FOUND MORE DIFFICULT			WORDS FOUND EASIER		
WORD	Schonell's Rank	Obtained Rank	WORD	Schonell's Rank	Obtained Rank
bun	10	16	Something	20	13
downstairs	22	38	postage	29	23
appeared	34	46	disposal	43	25
shepherd	24	34	university	46	27
thirsty	25	37	canary	36	30
crowd	26	32	smoulder	41	31
gradually	40	48	forfeit	56	39
island	30	49	siege	57	40
gnome	35	43	recent	58	41
nephew	39	56	intercede	54	47
diseased	45	52			
situated	50	57			
audience	49	58			
choir	53	59			

An inspection of the ten words which were observed to have been found relatively easier than was indicated in Schonell's arrangement, as shown in the fourth column of Table 7.15, reveals that all these words are either phonically simple, that is, they are devoid of misleading cues in their spelling, or were familiar to the pupils. The word 'university' for instance, was recognised by many children who could not read so many words preceding it on Schonell's list. This is probably because both Lagos and Ibadan are university towns, and the children must have seen the word many times.

(ii) Comparison of Experimental and Control Groups.

From the rankings of each word according to the errors made on it by experimental and control groups, it was possible to decide which words were found to be relatively more difficult by one group than by the other.

It should be noted that the relative and not the absolute difficulty of each word for experimental and control groups was compared. Indeed a word may have been read correctly by a greater proportion of one group than of the other, and yet it may appear as relatively more difficult for the former than for the latter, that is, in relation to the other words in the test. For instance, the word 'bun' was read correctly by 38% of the experimental and 36% of the control group of Primary Three pupils; but it came in the 20th rank for the former and in 12th

rank for the latter, so that it was relatively easier for the control than for the experimental group in that particular class, whereas in terms of absolute difficulty the experimental group found it easier than the control group.

A difference of more than five points between the rankings of the same word by experimental and control groups was regarded as significant. According to this criterion, ten of the sixty words appeared to have been relatively easier and eight relatively more difficult for the experimental than for the control pupils, as shown in Table 7.16. The results suggest that children who had learnt to read initially through w.i.t.a., that is those in the experimental group, made fewer errors on long and unfamiliar words provided those words contain a minimum of misleading cues; that is, if the sounds represented in w.i.t.a. notation by the constituent letters of a T.O. word could be used in that T.O. word without much error. For example, the words plausible, disposal, thirsty and others in the first column of Table 7.16 contain a minimum, or none, of such misleading cues, except recent which contains two misleading cues - in the second and third letters, respectively. That is probably why the experimental group found these words relatively easier than the control group.

Table 7.16
Comparison of the relative Eifficulty of Words for Experimental and Control Groups - December, 1968.

Words relatively easier for the experimental than for the control group.			Words relatively more difficult for the experimental than for the control group.		
WORD	Rank for Exp. Group	Rank for Cont. Group	WORD	Rank for the Exp. Group.	Rank for the Cont. Group.
shepherd	28	42	biscuit	31	25
thirsty	32	43	crowd	41	29
imagine	29	36	saucer	34	27
smoulder	26	38	angel	36	26
disposal	24	30	ceiling	43	32
nourished	33	47	appeared	50	40
intercede	40	53	gnome	47	37
fascinate	48	56	orchestra	56	46
recent	35	44			
plausible	49	55			

On the other hand, each of the eight words which the experimental group found relatively more difficult than did the control group, as shown in the fourth column of Table 7.16, contains at least one important misleading cue as far as the transfer of skills from w.i.t.a. to T.O. is concerned, as follows:

biscuit: the letter-group 'ui' is not used in w.i.t.a., and a blending of the sounds usually represented by the two letters, either in w.i.t.a. or in Yoruba, would be misleading.

crowd: the letter-group 'ow' is not used in w.i.t.a. and would be more familiar to the control than to the experimental group.

saucer: the letter 'c' does not have the same sound as 's' in w.i.t.a.; so that the use of both letters for the same sound in one word would be more confusing to the experimental group.

angel: the letter 'g' would confuse because it represents the consonant sound in 'go' both in w.i.t.a. and in Yoruba. The letter 'a' would also create some difficulty because the sound it represents in w.i.t.a. or Yoruba cannot be used by analogy in this particular case without error.

appeared: there seems to be little justification for this word to be relatively more difficult for the experimental than for the control group, besides the fact that the letter group 'ea' is not used in w.i.t.a.

gnome: the first, third, and last letters are misleading if habits learnt in reading w.i.t.a. are transferred.

orchestra: the letter group 'ch', or a recognisable modification of it, represents in w.i.t.a. the initial consonant sound in 'chain', so that its use for 'k' would confuse the experimental pupils whereas those who learnt T.O. initially would be more familiar with both uses of this letter-group.

The fore-going comparisons are not based on whether a greater proportion of one group than of the other could read certain words correctly, because the group with the higher average word recognition score also tended to record the lower proportion of errors on most words. Rather, the ranking of each word relative to the other words in the list when arranged in their order of difficulty for one group was compared with its ranking for the other group. Those which appeared to be relatively easier or more difficult for one group than the other have been discussed. It seems that the other words were, for one reason or another, not much different in their relative difficulties for the two groups.

J. PERFORMANCE OF PRIMARY II (i.e. GROUP D) PUPILS.

The pupils in Primary Two (GROUP D, Ibadan area) were also tested in English and Yoruba Reading in December 1968 when they had had about twelve to fifteen months of English reading. The English reading test used was the 'Word Reading

Test in English for Infants and Juniors'[1] constructed by the writer and presented in w.i.t.a. for experimental and in T.O. for control groups. Another reading Test[2] constructed by the writer was also used to test Yoruba reading. The mean scores and standard deviations for the two pairs of matched experimental and control classes on each of these tests are shown in Table 7.17.

Table 7.17
Group D (i.e. Primary Two) Pupils' Scores on the English and Yoruba Reading Tests - December 1968.

SUBJECT	Experimental Classes				Control Classes				z for Diff.
	Class No.+	Mean	s.d.	N	Class No.+	Mean	s.d.	N	
ENGLISH	15	55.41	31.25	22	16	30.83	25.75	18	2.657**
	17	85.00	30.36	24	18	45.07	28.00	21	4.481**
YORUBA	15	65.35	38.72	21	16	21.96	36.50	17	3.449**
	17	79.96	30.02	21	18	49.96	40.72	22	2.735**

+ 'Class No.' refers to the numbers in Table 4.6.

** Difference significant at the 99% level or more.

1. See Appendix IV.
2. See Appendix III.

The two pairs of experimental and control classes compared indicate significant differences in favour of the experimental classes in both English and Yoruba reading. This means that the pupils who had been learning to read English through w.i.t.a. were superior in both English and Yoruba reading than their counterparts (in control classes) who had read in T.O. all the time. The results of these tests given before the pupils in experimental classes had reached the transition stage to T.O. therefore confirmed those previously reported for other experimental groups* prior to transition to T.O. as well as afterwards.

K. SUMMARY.

The pupils in Primary Three, Primary Four, and Standard One (Lagos) were tested in various English reading skills in December 1968 after the experimental classes had changed to reading in T.O. When the mean scores obtained by matched pairs of experimental and control classes were compared it was found that the experimental classes of Primary Three and Standard One were superior in word recognition and English pronunciation skills than the control classes; but in the case of Primary Four pupils the control classes were superior. There were, however, no consistent differences in favour of either group

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* c.f. Tables 5.6, 5.8, 6.1, 6.2, and 6.6.

in spelling, reading comprehension, and general reading abilities.

No consistent differences were found between boys and girls within the same experimental or control group in their reading skills. But the boys tended to have a slight edge over the girls in most cases.

The pupils' levels of achievement in reading and spelling were about two to three years behind the norms set for British children by Schonell. Spelling in particular lagged behind reading progress.

Comparison of the ranking of words in the order of their difficulty for Nigerian pupils with the order of their arrangement by Schonell in his 'Graded Word Reading Test' revealed that words found relatively more difficult by the Nigerian pupils tested were either unfamiliar or irregularly spelt or both. Similarly, comparison of the rankings of the same words for experimental and control groups showed that the former, who had learnt to read through w.i.t.a., found words which were phonically consistent in their spelling relatively easier to read than did the latter, whereas they found unfamiliar words containing phonically inconsistent letters relatively more difficult.

Results of testing in English and Yoruba reading for Primary Two pupils confirmed previous results indicating superiority of experimental classes in these skills prior to transition to T.O.

SCHONELL GRADED WORD READING TEST

PRIMARY IV DECEMBER 1968.

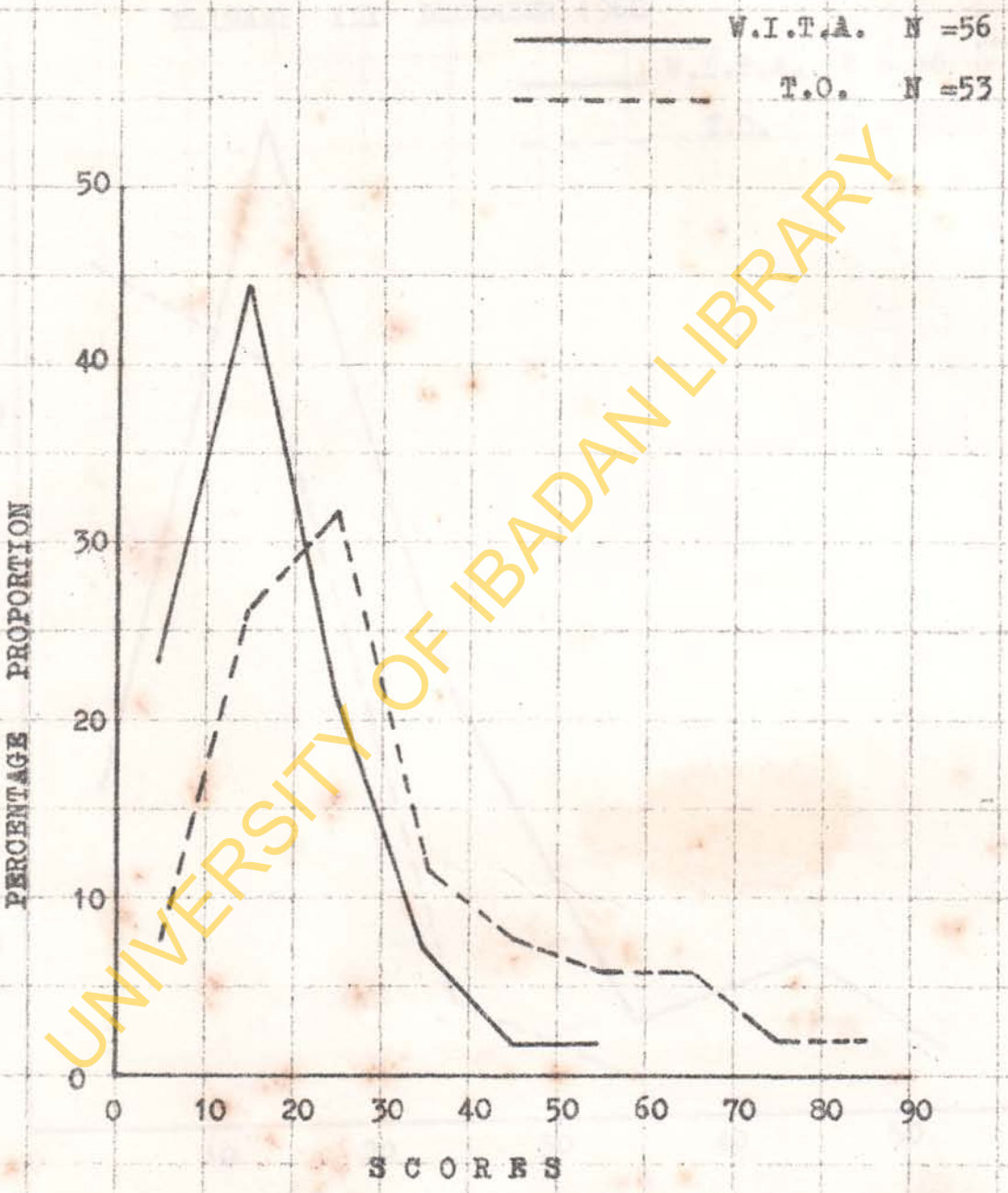

Fig. 7.1: Group A (i.e. Primary IV, 1968) pupils' performance on the Schonell Graded Word Reading Test (Dec. 1968). The control obviously performed better than the experimental group, for while none of the latter scored above 55, about 2% of the former scored above 80.

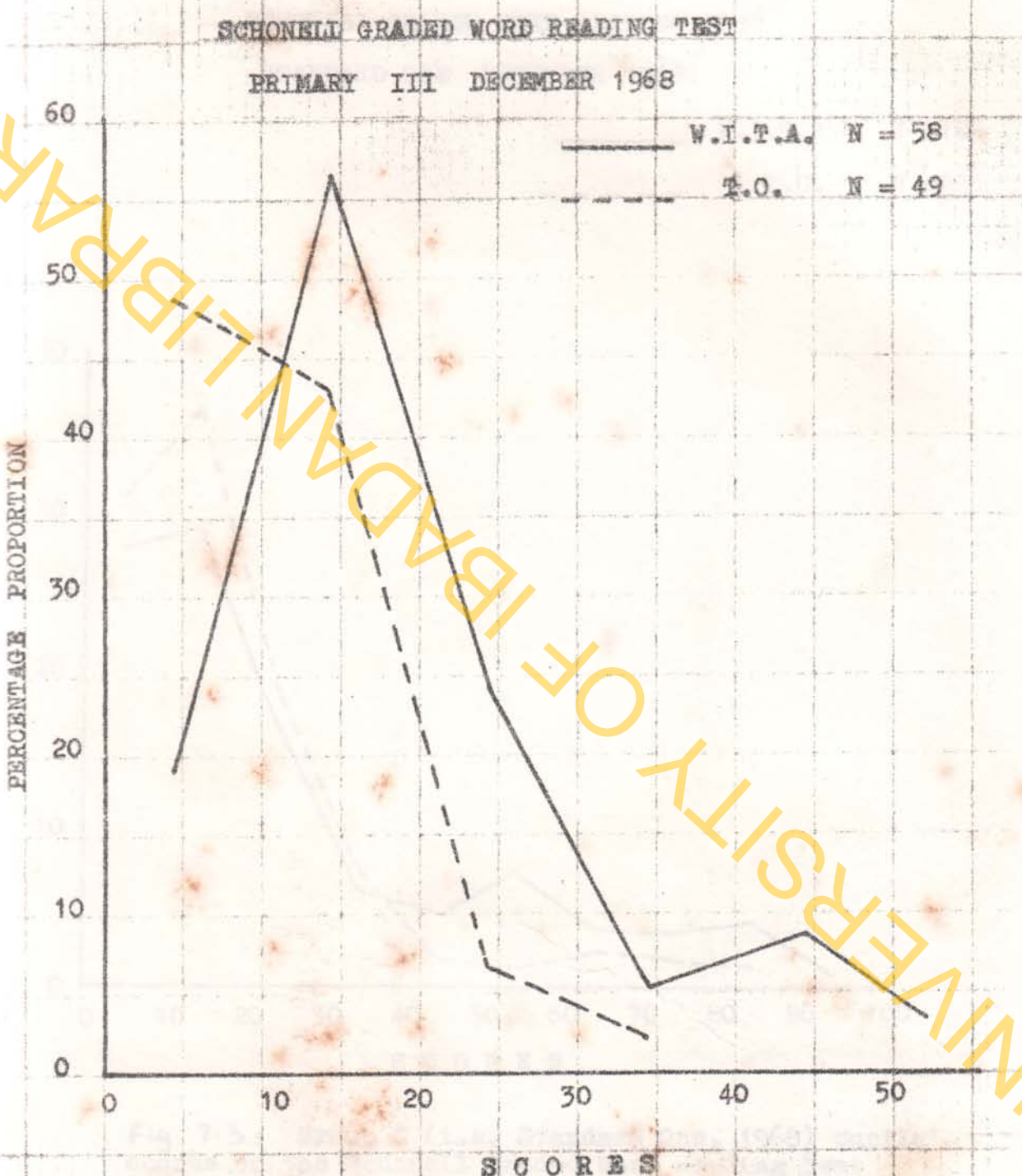

Fig. 7.2: Group B (i.e. Primary III, 1968) pupils' performance on the Schonell Graded Word Reading Test (Dec. 1968). The experimental group is obviously superior.

SCHONELL GRADED WORD READING TEST

STANDARD ONE DECEMBER 1968.

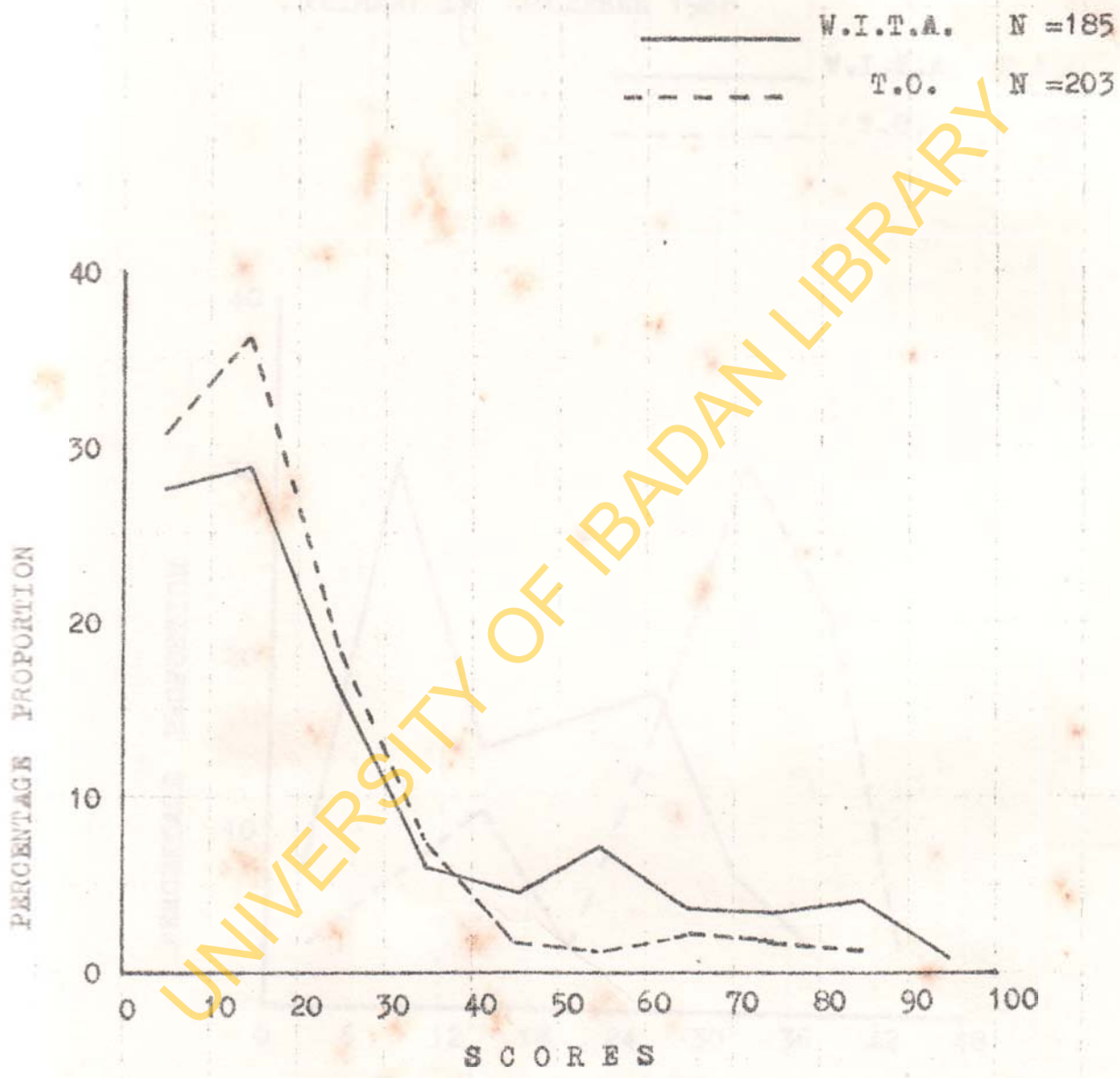

Fig. 7·3: Group C (i.e. Standard One, 1968) pupils' scores on the Schonell Graded Word Reading Test (Dec. 1968). The experimental group is slightly superior to the control group.

INDIVIDUAL PRONUNCIATION TEST

PRIMARY IV DECEMBER 1968

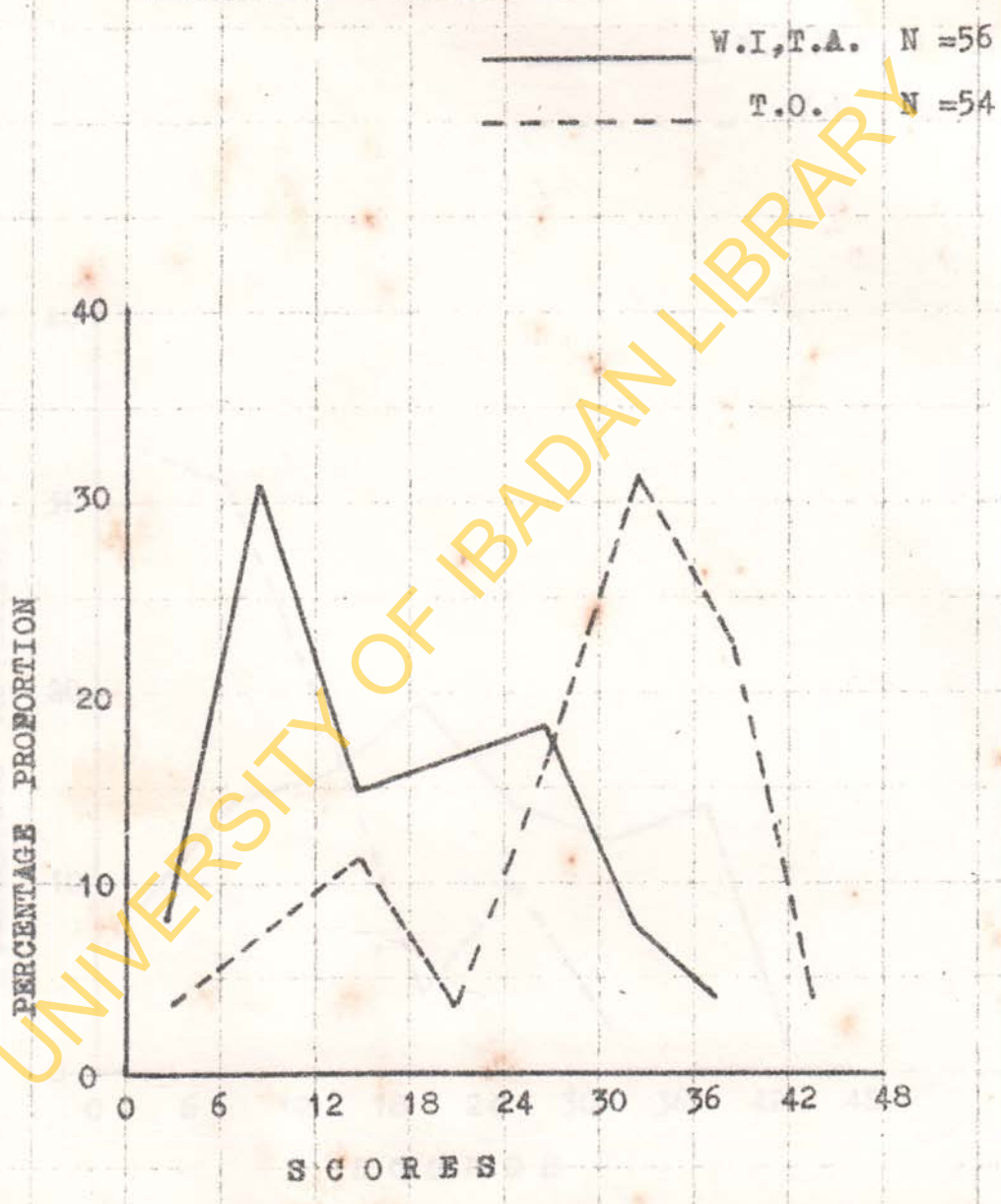

Fig. 7·4: Group A (i.e. Primary IV, 1968) pupils' scores on the Individual Pronunciation Tests, Dec. 1968. The control group is obviously superior to the experimental group.

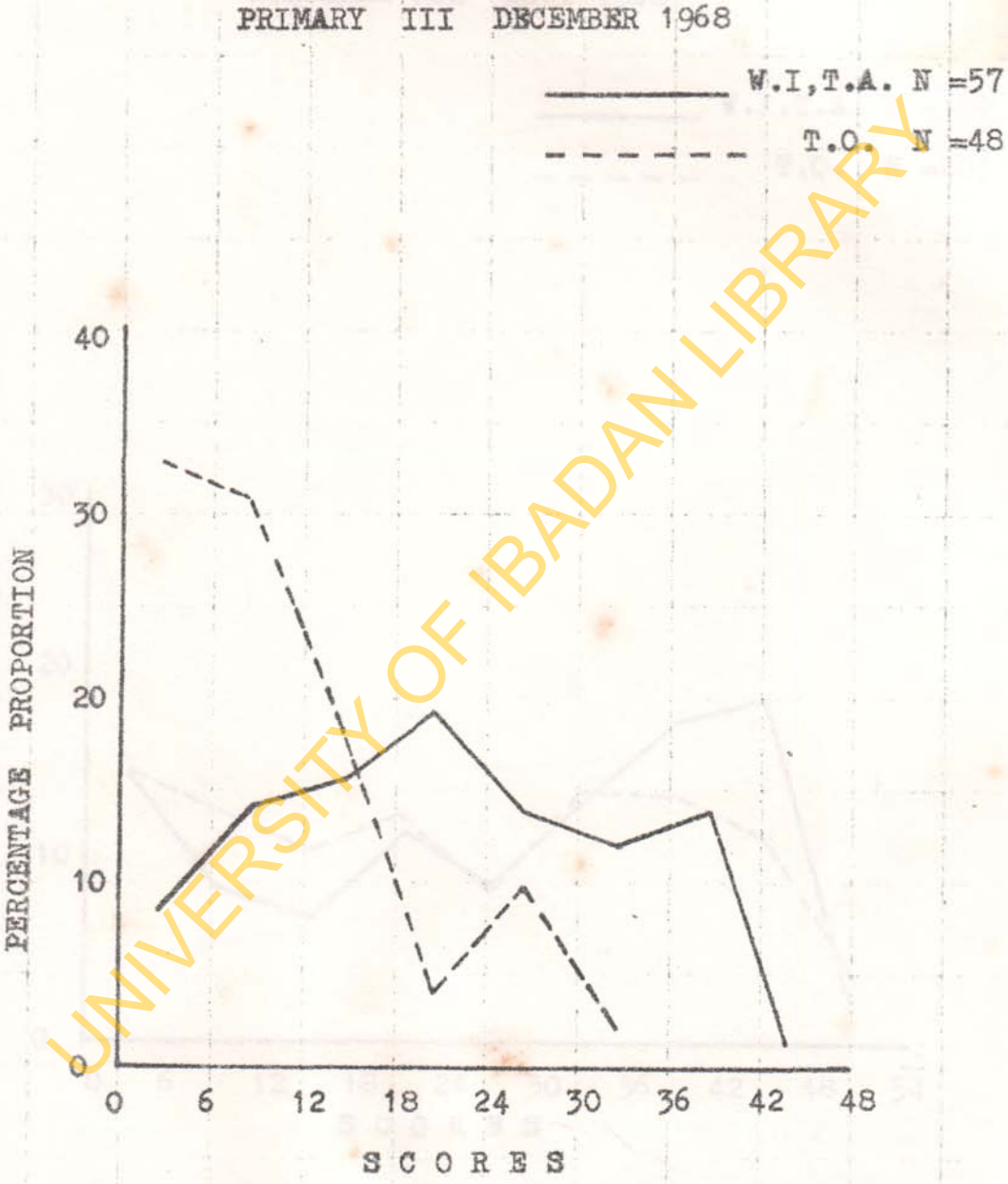

Fig. 7.5 : Group B (i.e. Primary III, 1968) pupils scores on the Individual Pronunciation Test, Dec. 1968. The experimental group is obviously superior.

INDIVIDUAL PRONUNCIATION TEST

STANDARD ONE DEC. 1968

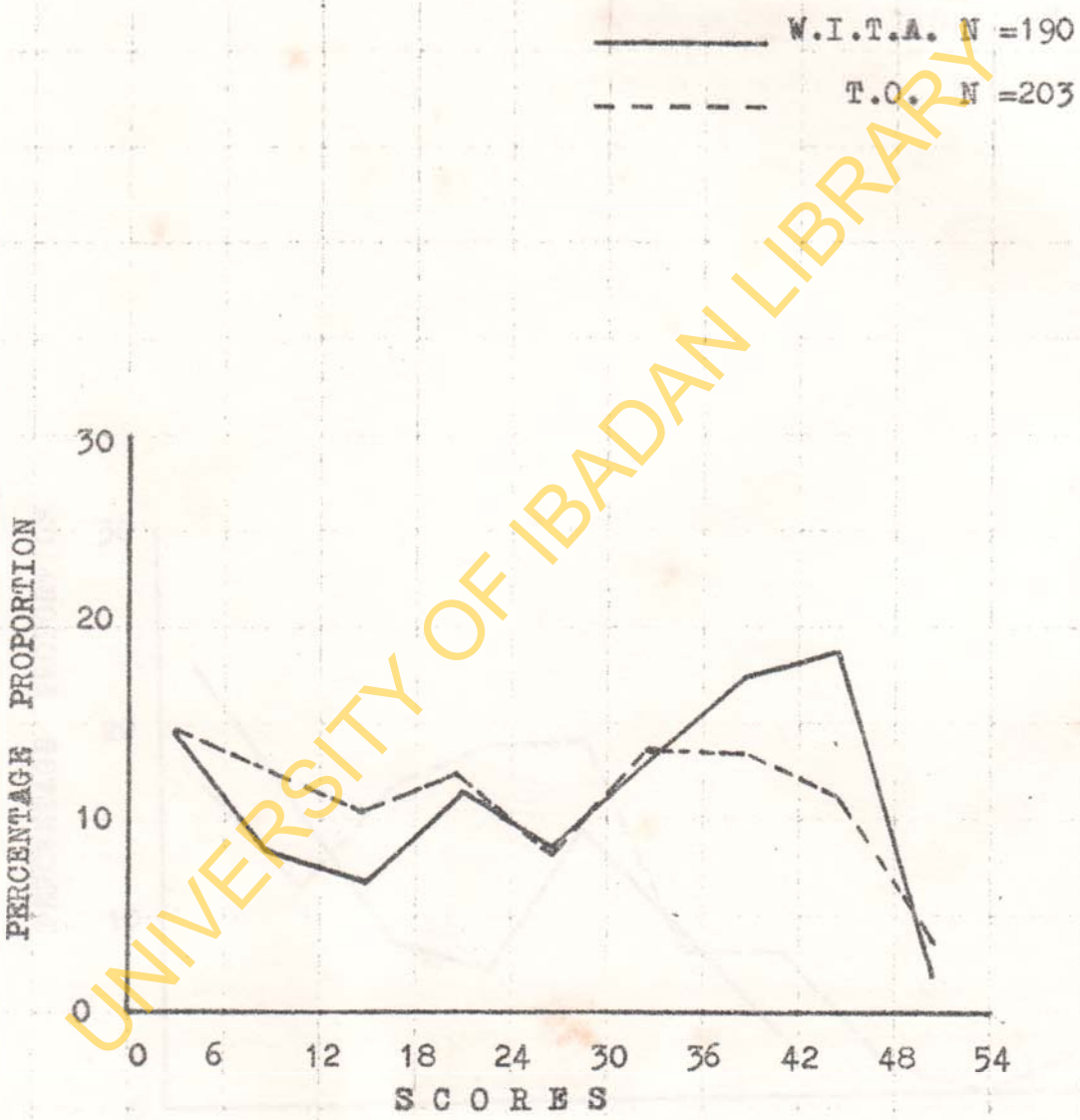

Fig. 7.6 : Group C (i.e. Standard One, 1968) pupils' scores on the Individual Pronunciation Test, Dec. 1968. The experimental group is slightly superior to the control group.

GRADED (WRITTEN) SPELLING TEST

PRIMARY IV DECEMBER 1968.

———— W.I.T.A. N =56

- - - - - T.O. N =54

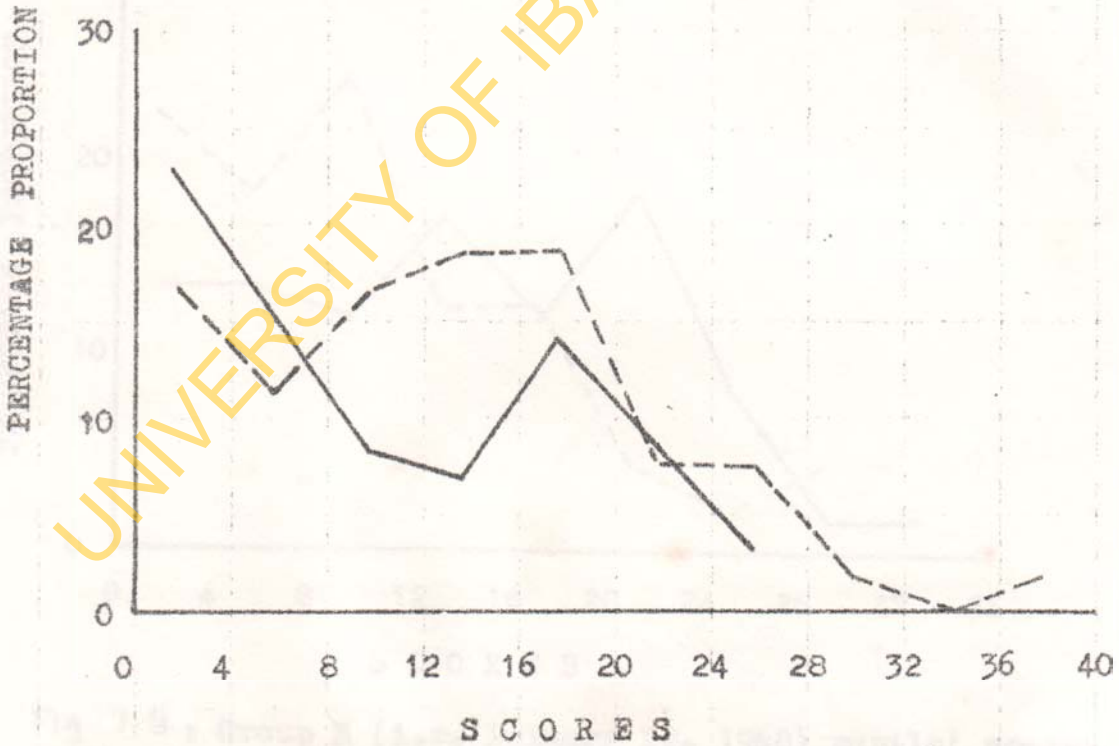

Fig. 7.7: Group A (i.e. Primary IV, 1968) pupils' scores on the Graded (Written) Spelling Test, Dec. 1968. The control group is obviously superior to the experimental group.

GRADED (WRITTEN) SPELLING TEST

PRIMARY III DECEMBER 1968

———— W.I.T.A. N =58

- - - - - - T.O. N =49

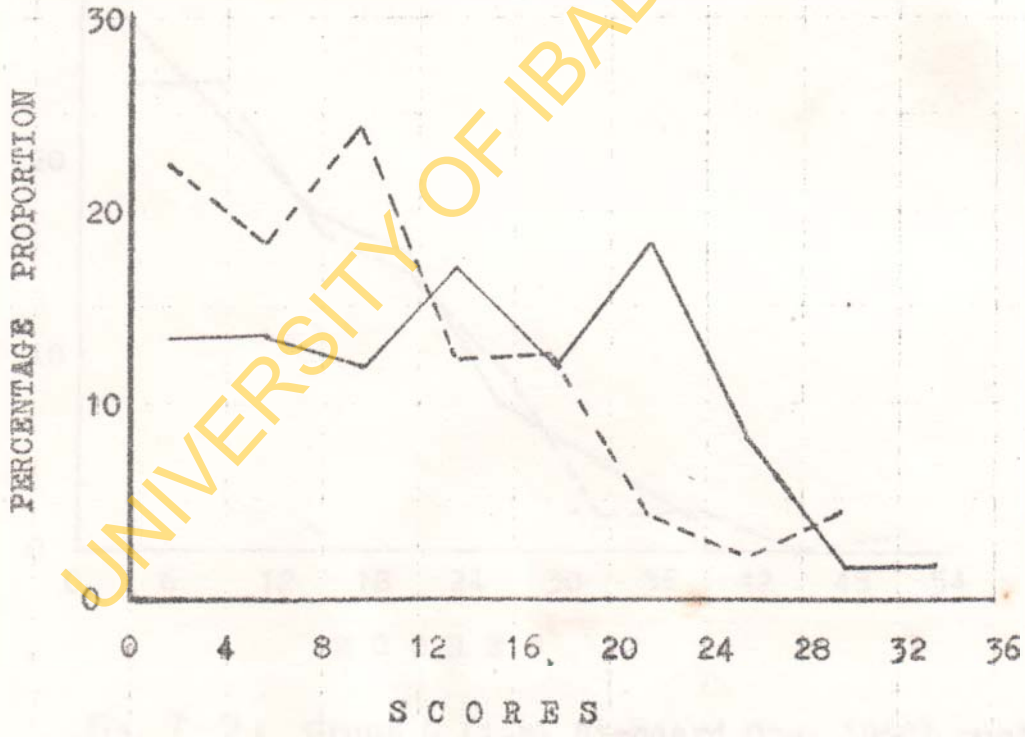

Fig. 7.8 : Group B (i.e. Primary IV, 1968) pupils' scores on the Graded (Written) Spelling Test, Dec. 1968. The experimental group is slightly superior to the control group.

GRADED (WRITTEN) SPELLING TEST

STANDARD ONE DECEMBER 1968

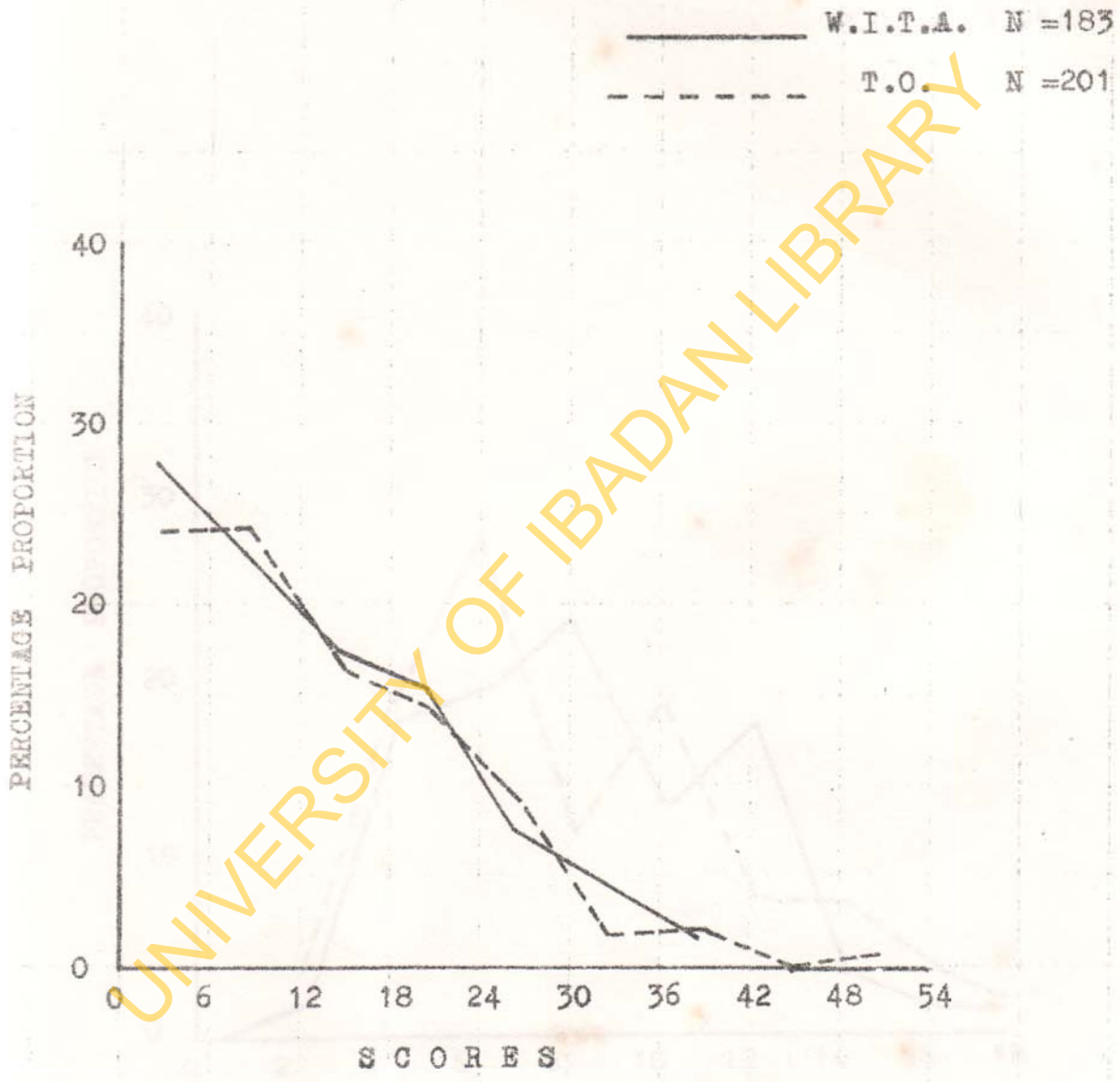

Fig. 7.9: Group C (i.e. Standard One, 1968) pupils' scores on the Graded (Written) Spelling Test, Dec. 1968. There is hardly any difference between experimental and groups.

SENTENCE COMPLETION TEST

PRIMARY IV DEC. 1968.

——— W.I.T.A. N =56

– – – – T.O. N =54

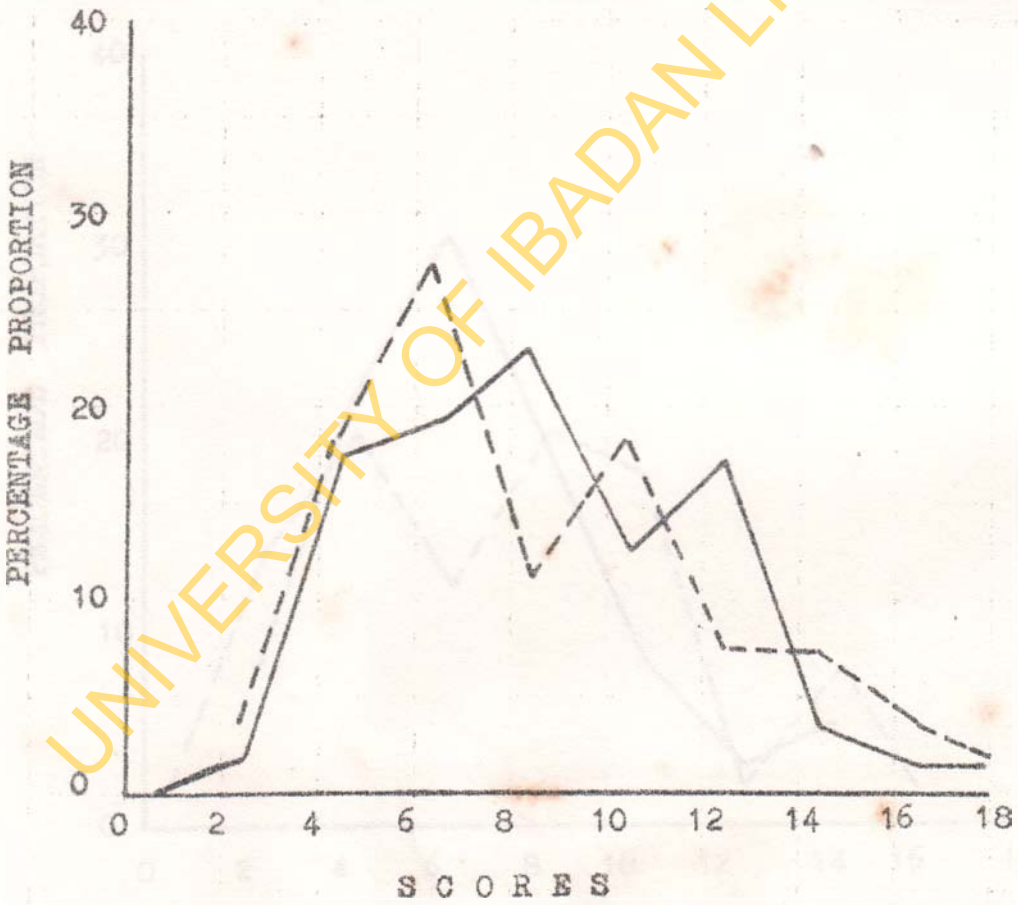

Fig. 7.10: Group A (i.e. Primary IV, 1968) pupils' scores on the Sentence Completion Test, Dec. 1968. There is no discernible difference between experimental and control groups.

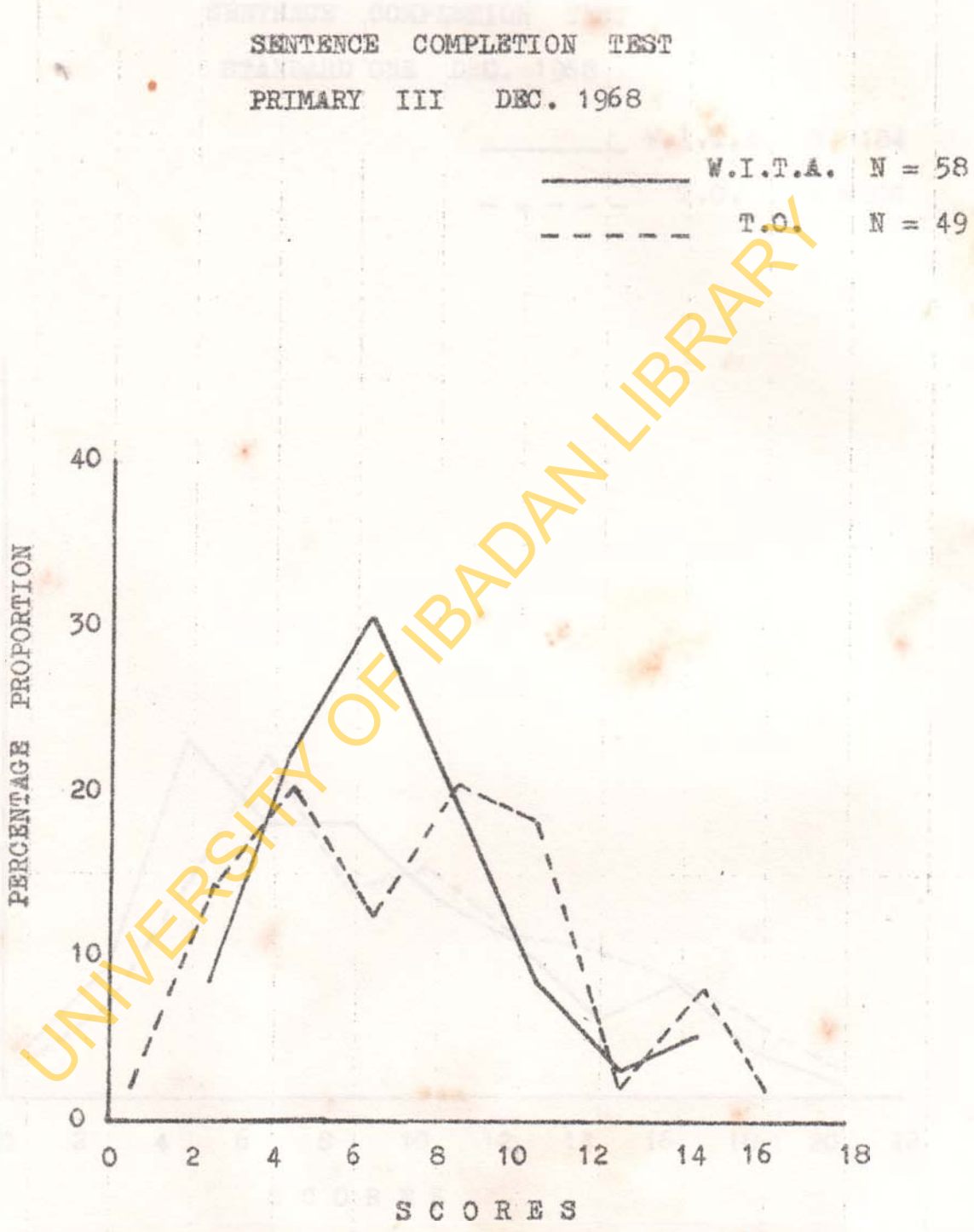

Fig. 7.11 : Group B (i.e. Primary III, 1968) pupils' scores on the Sentence Completion Test, Dec. 1968. There is hardly any difference between experimental and control groups.

SENTENCE COMPLETION TEST

STANDARD ONE DEC. 1968

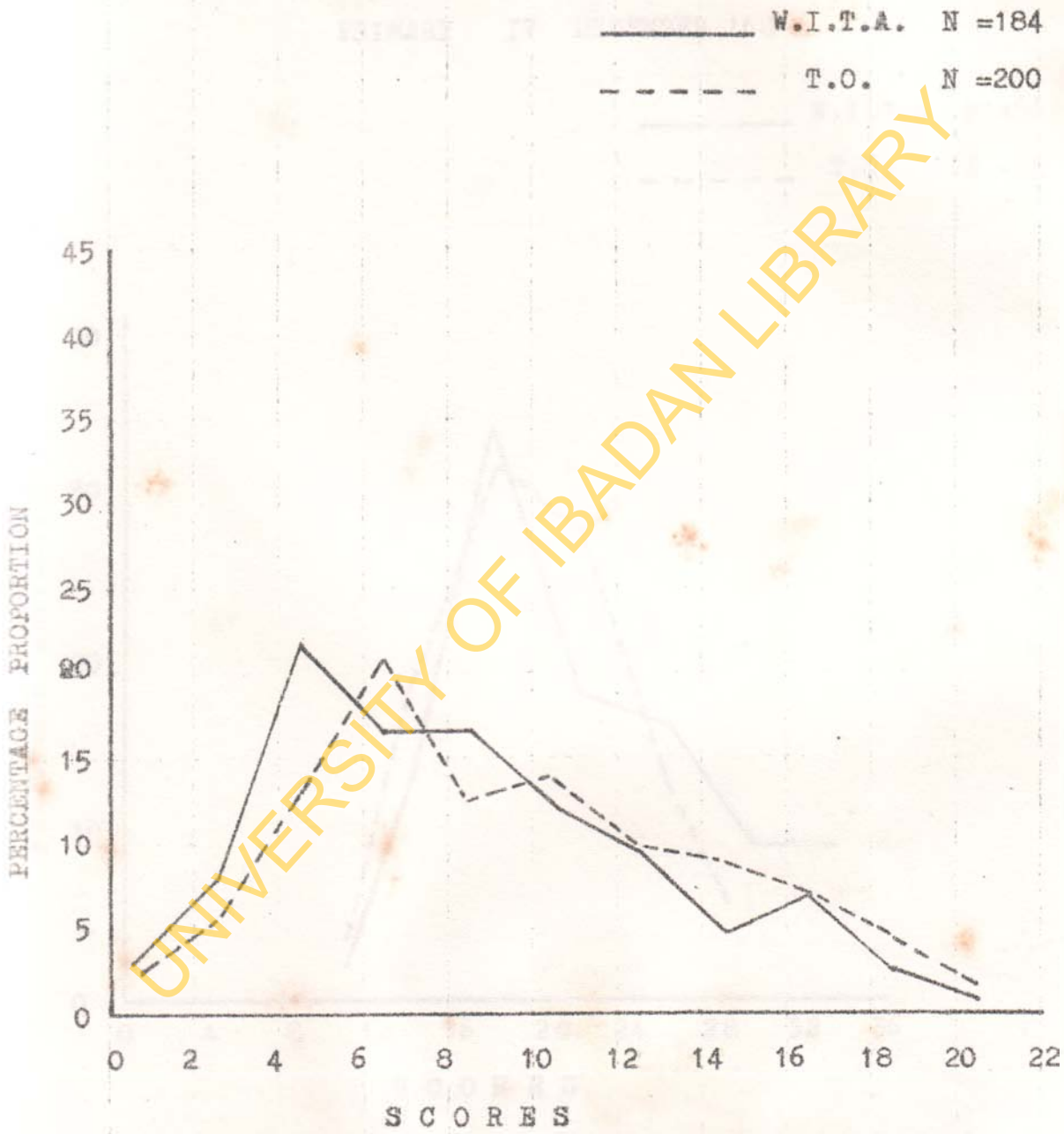

Fig. 7.12: Group C (i.e. Standard One, 1968) pupils' scores on the Sentence Completion Test, (Dec. 1968). There is no discernible difference between experimental and control groups.

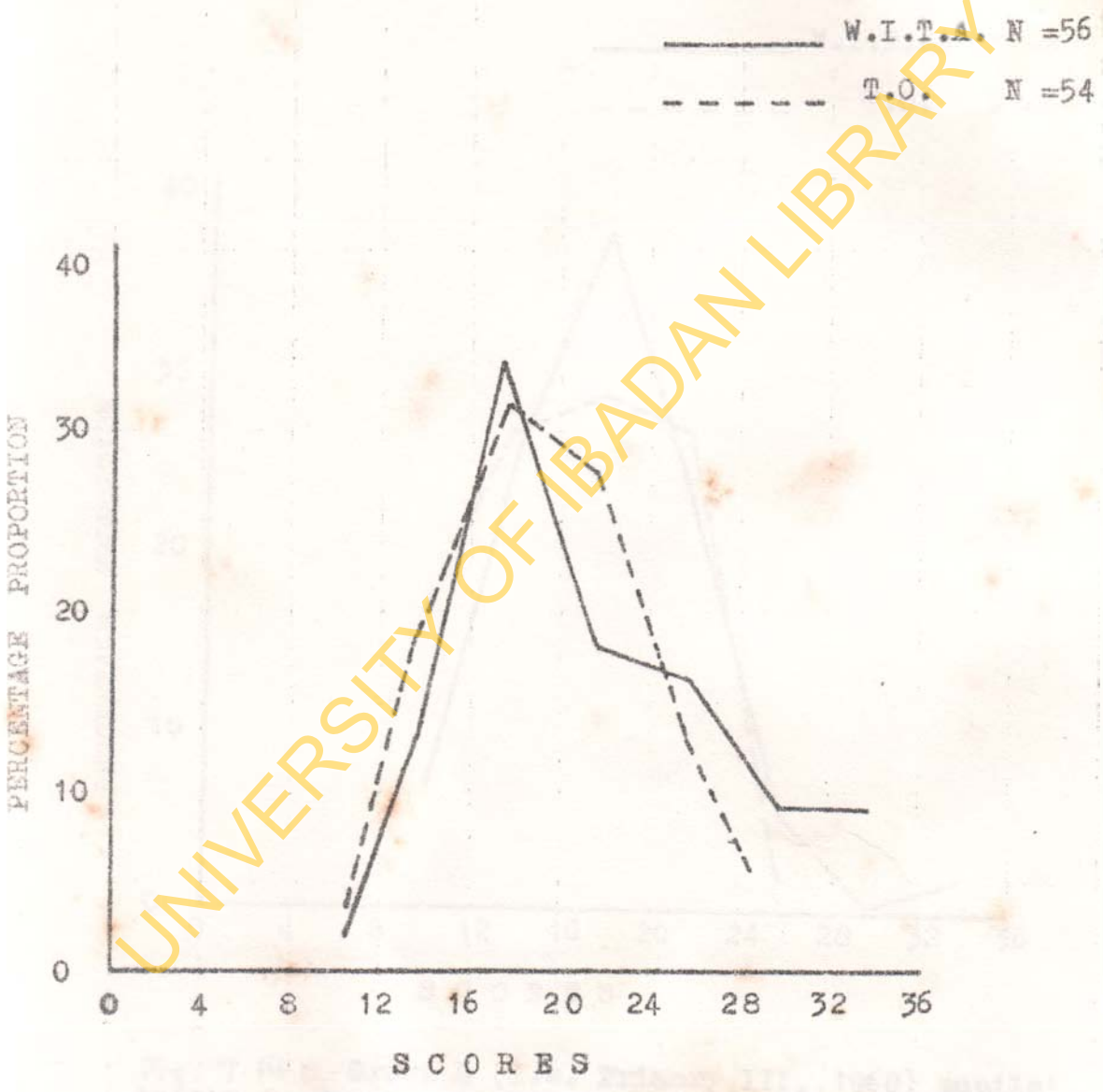

Fig. 7.13 : Group A (i.e. Primary IV, 1968) pupils' scores on Spooncer's Group Reading Assessment, Dec. 1968. There is hardly any difference between experimental and control groups.

READING ASSESSMENT TRST

PRIMARY III DEC. 1968.

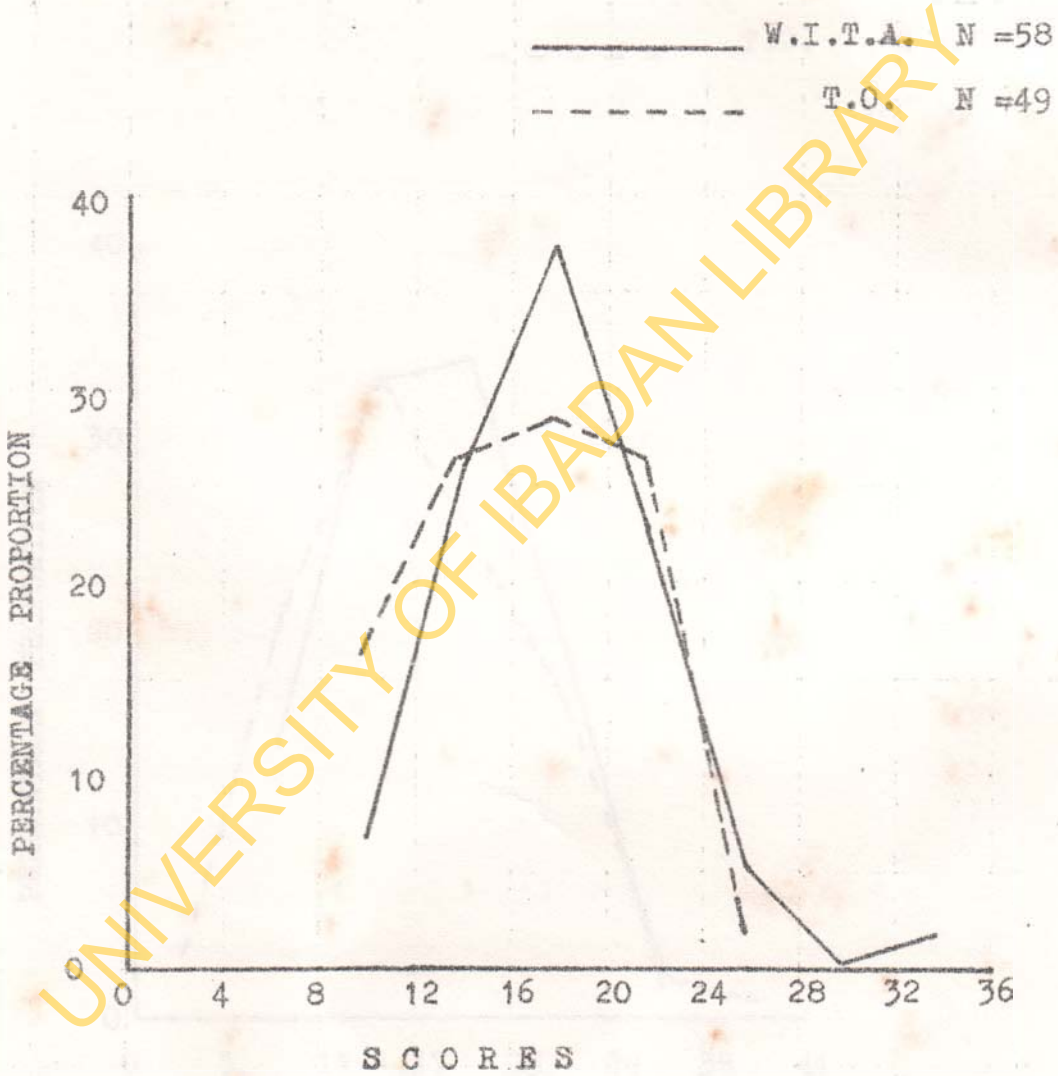

Fig. 7.14: Group B (i.e. Primary III, 1968) pupils' scores on Spooncer's Group Reading Assessment, Dec. 1968. The experimental group is very slightly superior to the control group.

READING ASSESSMENT TEST

STANDARD ONE DEC. 1968

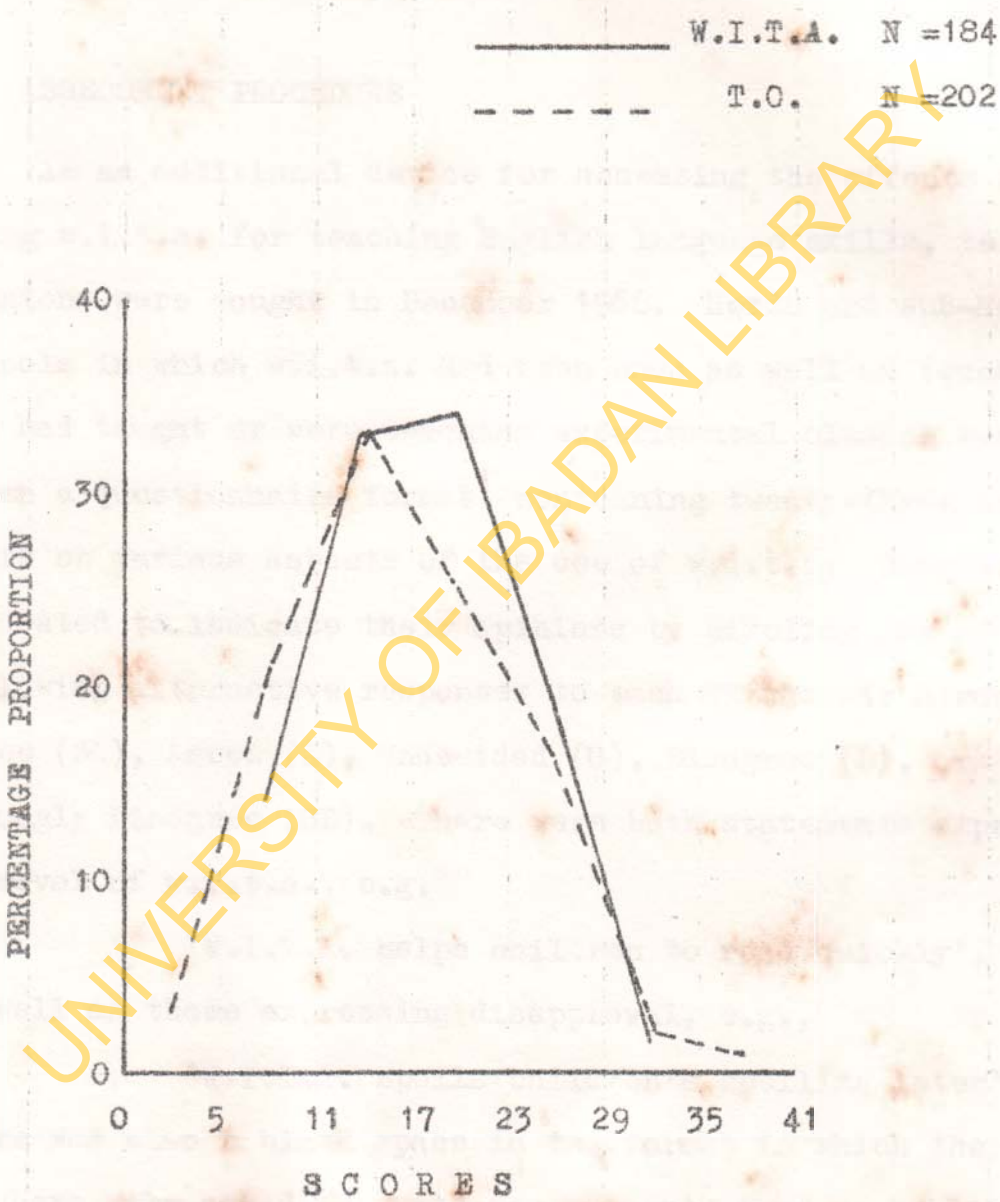

Fig. 7.15: Group C (i.e. Standard One, 1968) pupils' scores on Spooncer's Group Reading Assessment, Dec. 1968. There is hardly any difference between experimental and control groups.

CHAPTER VIII

TEACHERS' OPINIONS ON THE EFFECTS OF USING W.I.T.A.

A. ASSESSMENT PROCEDURE

As an additional device for assessing the effects of using w.i.t.a. for teaching English language skills, teachers' opinions were sought in December 1968. Heads and sub-heads of schools in which w.i.t.a. had been used as well as teachers who had taught or were teaching experimental classes were given a questionnaire format[1] containing twenty-three statements on various aspects of the use of w.i.t.a. They were requested to indicate their opinions by circling one of the following alternative responses to each statement: Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), or Strongly Disagree (SD). There were both statements expressing approval of w.i.t.a., e.g.

'W.I.T.A. helps children to read quickly',

as well as those expressing disapproval, e.g.,

'W.I.T.A. spoils children's spelling later'.

There was also a blank space in the format in which the teachers were asked to write any comments they might like to make on the experimental project. Thirteen teachers in Ibadan and twenty-one in Lagos schools completed the questionnaire.

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1. See Appendix XX (a) & (b).

Teachers' responses to the statements were quantified by awarding the following numerical scores to each response-category in the case of a statement expressing approval:

response category:	SA	A	U	D	SD
Score :	9	7	5	3	1 ;

but in the case of a statement expressing disapproval, the following numerical scores were awarded:

response category:	SA	A	U	D	SD
Score :	1	3	5	7	9 .

It meant therefore that the higher the score, the greater the approval of W.I.T.A. expressed by the respondent.

The scores on those statements related to the learning of specific aspects of the English language, e.g. reading, spelling, and pronunciation, were summed over all the teachers responding to the statements. The sum was then divided by the number of contributing statements and the number of respondents, to obtain the approval score. An approval score lower than 5 indicates disapproval, while 5 indicates indecision or neutrality, and a score greater than 5 indicates approval. This approval score, together with the teachers' comments, provided useful information on the teachers' opinions regarding the values of w.i.t.a. in relation to the various aspects of learning the English language. Their opinions are described below.

B. RELATIONSHIP BETWEEN W.I.T.A. AND ENGLISH READING.

Three statements in the questionnaire, viz.

2. W.I.T.A. helps children to read quickly

9. W.I.T.A. makes the children backward in reading

19. W.I.T.A. produces more backward readers

are directly related to the influence of w.i.t.a. on reading. Scores on these were used to assess teachers' opinion on the effects of w.i.t.a. on reading.

The approval score of 7.5 obtained for all teachers indicates that they felt that w.i.t.a. helped children in reading and strongly approved of it. The score (7.8) obtained for Ibadan teachers was slightly higher than that (7.3) obtained for the Lagos teachers.

Twelve teachers also made reference to the effects of w i.t.a. on reading in their comments. These comments show that almost all of them believed that w.i.t.a. had helped the children to read quickly. One headmistress in Lagos put it thus,

> "It is discovered that the I.T.A. project has enhanced quick reading and has also helped the children's phonetics and understanding. I am happy that my misconception of the project is unfounded." (30)*

Another teacher who had had long experience at teaching an experimental class commented thus:

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* Numbers shown in brackets at the end of teachers' comments refer to the numbers in Appendix XXIX.

In my candid opinion, I declare that the project is a successful one because the I.T.A. symbols lessen children's problems in reading." (14)

The teachers therefore obviously approved of w.i.t.a. as helping pupils to learn to read English quickly, thus confirming the superiority of most experimental classes over the control ones as shown by the test results.

C. THE EFFECTS OF W.I.T.A. ON PRONUNCIATION:

The highest approval score (8.3) was obtained for this aspect of the learning of English through w.i.t.a. This indicated the teachers' belief that w.i.t.a. was useful in promoting the English pronunciation of their pupils. The relevant statements which tapped this information were as follows:

8. W.I.T.A. improves the children's pronunciation

16. W.I.T.A. does not improve the children's pronunciation.

All the teachers in Ibadan and 90% of those in Lagos indicated agreement or strong agreement with statement No. 8 which is one of approval; while 92% in Ibadan and 95% in Lagos indicated disagreement or strong disagreement with the second statement (i.e. No. 16) which is one of disapproval.

The comments written by all those teachers who made reference to this aspect of learning to read through w.i.t.a.

also showed their strong conviction on its utility for the acquisition of good pronounciation skills. One teacher in Ibadan area expressed the opinion rather strongly thus:

> "The use of w.i.t.a. in the primary schools is good especially for beginners. The use of w.i.t.a. makes young children speak fluently with good pronunciation. It teaches young children to read with confidence. If the use of w.i.t.a. continues in primary schools in the Western State , our young school children will surely be equal with children in the U.S.A. especially in spoken English. In brief, it worths using in schools." (1)

Even a teacher who was not so convinced about the value of w.i.t.a. in other directions confirmed that it resulted in superior pronunciation. She commented as follows,

> "The other Standard One classes we have in the school did better in General Written English and Arithmetic tests that we gave them for the promotion or End of Term Examination. The children (i.e. w.i.t.a. children) are better anyway in pronunciation." (27)
> (Words in parentheses mine).

Testing, as described in chapters six and seven indeed showed that w.i.t.a.-taught children were superior in English pronunciation than T.O.-taught ones.

D. EFFECTS OF W.I.T.A. ON SPELLING IN T.O.

The relevant statements in this connection were as follows:

4. Children who used W.I.T.A. can spell very well in T.O.

14. W.I.T.A. spoils children's spelling later.

These resulted in an approval score of 5.5. which is only slightly greater than the neutral score of 5: thus indicating that the teachers were not quite convinced of the value of w.i.t.a. in promoting good spelling skills, although they did not condemn it as producing bad spelling.

The only two teachers who made reference to spelling in their comments felt that w.i.t.a. had affected the children's spelling. The two are quoted below:

> "W.I.T.A. gives the children confidence in reading and improves their pronunciation. It gives them better understanding of English language and thus increases their knowledge of English words. But the fact that the children using i.t.a. seem to be backward in spelling needs much to be considered." (20)

and,

> "W.I.T.A. helps to improve children's pronunciation, it gives them better understanding of English and a good command of vocabulary, but I am afraid it can weaken their knowledge of correct spellings of words." (21)

The relevant portions have been underlined by me in each case. The view that w.i.t.a. probably had adverse effects on the children's spelling was however not justified by the test results described in previous chapters. It may be that since spelling was not taught in experimental classes during the w.i.t.a.-reading period prior to transition to T.O., the pupils involved would appear to have inferior spelling skills

shortly after changing to T.O. in comparison with those in control classes who had been learning T.O. spelling all along. The impression gained shortly after the transition stage was probably retained by some teachers even when the pupils had become as good as, or even better than, the control groups, in T.O. spelling.

E. EFFECTS OF W.I.T.A. ON WRITING.

Two aspects of this were considered as follows:

(i) The influence of w.i.t.a. on children's handwriting; that is, the mechanics of writing, and

(ii) The effects of w.i.t.a. on the expression of ideas in writing.

Three statements in the questionnaire format are relevant to the first aspect. They are as follows:

1. Children find it difficult to write W.I.T.A. symbols

13. The children could write W.I.T.A. easily

22. W.I.T.A. spoils the children's handwriting.

Among the respondents to these statements, 68% indicated disagreement or strong disagreement with statement No. 1, 74% indicated agreement or strong agreement with statement No. 13, while 76% indicated disagreement or strong disagreement with statement No. 22. The approval score obtained over these statements was 6.4.

It is obvious from these that the teachers did not regard w.i.t.a. as having had adverse effects on children's handwriting or as having caused difficulties in writing for young children.

As regards the second aspect of writing, teachers' opinions were obtained partly through one statement in the questionnaire and partly through their written comments. The relevant statement was No. 22 which runs as follows:

22. Children write their own ideas better in W.I.T.A. than in T.O.

Barely 24% of the respondents expressed agreement or strong agreement with this statement. The obtained approval score of 4.5, which falls below the neutral score of 5, indicates that the teachers felt that w.i.t.a. did not help children to write their own ideas better, but probably hindered such expression.

Several of the teachers indeed commented that the children did not have sufficient practice in written English because the course-books used little or no written exercises in the early stages. One teacher commented as follows:

> "All school teachers should be given the opportunity to learn I.T.A. through in-service training. I.T.A. may not be encouraged in Primary IV as it only helps a lot in oral English, Written English is poor in I.T.A. in higher classes." (34) (Underlining mine).

Another teacher also remarked:

> "..... The Text-books are all right but more exercises could have been provided especially with the I.T.A. Book II... (29)

This is a serious point, because teachers in Nigeria tend to depend almost entirely on exercises provided in the course books for giving their pupils necessary practice in written English. Since the pupils lack the vocabulary to undertake any reasonable free writing, teachers were wont to use almost exclusively the question-and-answer type of writing for which little or no provision was made in the NNE books.* That free writing was undertaken in some classes has been shown, however, in the sixth chapter. Much depended on the teachers' own ability to initiate and direct free writing by carefully guiding the pupils to use the few words they knew.

F. EFFECTS OF W.I.T.A. ON CHILDREN'S ATTITUDES.

The three statements relevant to the teachers' assessment of the influence of w.i.t.a. on children's attitudes are as follows:

10. Children like reading W.I.T.A.

11. W.I.T.A. makes children afraid to read

17. Children are confident when they read W.I.T.A.

It is clear from the responses made to these statements, and the approval score of 7.6 which was obtained, that the

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* See Section H for further discussion on the NNE books.

Table 8.1
Teachers' Response Patterns to the Questionnaire on the use of w.i.t.a. - December, 1968.

Statement No.	Frequency of Responses in each Category									
	Ibadan Teachers					Lagos Teachers				
	SA	A	U	D	SD	SA	A	U	D	SD
1	-	3	-	1	9	2	2	4	13	-
2	8	5	-	-	-	12	5	3	1	-
3	3	7	1	1	1	4	7	2	5	3
4	2	4	1	5	1	3	7	4	6	1
5	1	-	1	2	9	1	1	3	8	8
6	1	-	1	6	5	3	3	-	10	5
7	-	-	3	4	6	-	-	3	13	5
8	10	3	-	-	-	15	4	1	-	1
9	-	1	-	3	9	2	1	1	9	8
10	3	10	-	-	-	5	13	2	1	-
11	-	-	1	7	5	-	-	-	11	10
12	5	3	4	1	-	7	4	2	5	3
13	4	8	-	-	1	2	11	3	4	1
14	1	4	3	2	3	-	4	3	12	2
15	3	2	6	2	-	6	6	4	3	2
16	-	1	-	2	10	-	-	1	6	14
17.	3	10	-	-	-	11	8	1	1	-
18.	1	-	9	2	1	-	4	4	7	6
19	-	1	1	7	4	-	-	2	12	7
20	5	4	3	1	-	9	9	1	2	-
21	4	1	5	1	2	-	3	8	6	4
22	1	-	2	5	5	1	4	-	13	3
23	4	7	-	-	2	10	8	1	2	-

Table 8.2
'Approval Scores' on some Aspects of the W.I.T.A. Project - December, 1968

Aspects of the Project	Relevant Statements (Serial Numbers)	Approval Scores
Reading	2, 9, 19	7.5
Pronunciation	8, 16	8.3
Spelling	4, 14	5.5
Writing		
(i) Mechanics	1, 13, 22	6.4
(ii) Free Writing	21	4.5
Children's Attitudes	10, 11, 17	7.6
Transition to T.O.	20	7.2
The NNE Books	23	7.2

teachers were convinced of the children's interest and confidence in reading w.i.t.a. Indeed, 94% of the respondents disagreed with statement No. 11.

Comments written by teachers also confirmed that children showed confidence and interest in reading w.i.t.a. The third sentence of the first comment quoted in Section C, and the first sentence of the first comment quoted in Section D indicate the children's confidence in reading w.i.t.a.

Comments made by some other teachers similarly confirmed the children's interest in reading w.i.t.a. For instance, one teacher's comments included the remark, "children always show interest when they read w.i.t.a." (10)

G. ON THE TRANSITION TO T.O.

Most teachers obviously believed that the children experienced little or no difficulties in changing from w.i.t.a. to T.O. because 79% of them agreed with the following statement on the questionnaire:

20. Children change easily from W.I.T.A. to T.O.

This gave an approval score of 7.2 which indicates positive approval of w.i.t.a. with specific reference to any problems associated with the transition stage.

That the teachers were not unanimous on this is, however, shown by the comments made by them. One headteacher stated:

> "The Project is a good project as it teaches good pronunciation and fluency in reading, but the children find it difficult to change from W.I.T.A. to T.O. I wish the organisers to improve this...." (4); (Underlining mine).

whereas another teacher who had taught an experimental class and seen the pupils through the transition stage listed the advantages of using w.i.t.a. thus:

"As w.i.t.a. class teacher, and according to my personal observation since I have been participating in the teaching I recommend that it should continue for the following reasons:

(i) it helps the children to read quickly,

(ii) it improves the children's pronunciation,

(iii) children always show interest when they read w.i.t.a.

and (iv) no difficulty when changing from W.I.T.A. to T.O." (10)
(Underlining mine).

One teacher felt that "changing from w.i.t.a. to T.O. could be done before the third year" (24), while another headteacher remarked that "what happens during the transition stage should be thoroughly investigated and necessary innovations made." (15)

But in spite of this seeming controversy over the transition stage, the responses made to statement No. 20 on the questionnaire and the performance of the experimental groups shortly after transition to T.O. as compared with that of the control groups, suggest that little or no serious problems were encountered during the transition stage.

H. ON THE NEW NATION ENGLISH COURSE.

The last statement on the questionnaire which runs thus:

'23. The New Nation English Course is good', was designed to elicit teachers' opinion on the course books used in the

experiment. The statement was endorsed by 85% of the teachers, and the approval score of 7.2 indicates their positive approval of the NNE course. There were criticisms of the course books, however, and they seem to have been more favourably received in Lagos (where an approval score of 7.5 was obtained from the teachers' responses to statement No. 23) than at Ibadan (where an approval score of 6.7 was obtained). Comments written by teachers indicate more clearly what they felt about the NNE course, and a selection of these are quoted to illustrate;

One teacher commented as follows:

> "The illustrations or pictures in NNE books enable the pupils to understand what they read easily. I suggest that more exercises are included in the pupils' Books in the future edition." (2)

Another teacher said:

> "The using of 'Key to New Nation English' and the Pre-reader books made the children understand the sentences verbally first before they recognize the sentences in the NNE reading book, w.i.t.a. makes my pupils read faster and more fluently than the other schools using T.O. books like N.O.E.C."* (5)

Another teacher also said,

> ".... The New Nation English Course should be thoroughly graded. There is a sharp contrast between work in Book II and that of Book III. Book Three appears too difficult." (15)

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* i.e. the New Oxford English Course, Nigeria. By French, F.G., Ibadan, Oxford University Press.

What this teacher obviously meant was that children who had gone through Book Two encountered considerable difficulty when they went on to read Book Three.

One head teacher, after commenting on the NNE books, went on to suggest what alterations could be made. Her full statement runs thus:

> "The New Nation English Book is not adequate. There should be some sort of work books to give children practice on work done. Unless the Readers are meant to teach reading and correct phonetic pronunciation alone, they need to deal with other aspects of the English language like (i) comprehension (ii) grammar, etc.; or the children's books might have revisional or comprehension questions and grammar exercises." (23)

Another teacher suggested what could have been done to make the books more useful thus:

> "The NNE Course could have been good reading books if they are written lesson by lesson and if questions follow each lesson right from Book II. The idea of writing the new words at the end of the books is a good one..." (24)

Remarks made by three other teachers were on the same note, as follows:

> "..... The Text-Books are all right but more exercises could have been provided especially with the W.I.T.A. Book II...." (29)

> "The New Nation English Books I and II have no exercises but the ones in Book III is rather too advance for the pupils who have not been practising such exercises in the former two books before...." (33)

"W.I.T.A. is good for primaries one and two pupils but the reading book is lack of suitable exercises both written and oral, otherwise it could have been very good." (35)

One thing that emerges clearly from all these comments on the NNE course books is the teachers' disatisfaction with the absence of the type of exercises to which they were accustomed in the more commonly used books like the N.O.E.C. books. In this connection, the teachers in the Ibadan area showed more unwillingness or inability to formulate different exercises for their pupils, than those in Lagos area. That is probably why a lower approval score for the NNE Course was obtained from the responses of the teachers in Ibadan area than from the responses of those in Lagos area.

The teachers' reaction to the course books used has been discussed at length because it is intimately bound with their reaction to the entire experimental project. Impatience was usually expressed by them when they considered the type of work that was being done by the other non-participating arms of the same class.

I. MISCELLANEOUS.

(i) As regards whether all children should learn to read through w.i.t.a., several teachers expressed the opinion that this should be so.

One such opinion runs thus:

> "All primary school teachers should be given the opportunity to learn w.i.t.a. so that primaries I and II in all schools may have the privilege to learn I.T.A. because it helps the pupils in oral English and reading." (6)

Another teacher concluded her comments on the project thus:

> "..... I advise more i.t.a. projects in schools with qualified teachers trained for the project." (17)

And another said,

> "All school teachers should be given the opportunity to learn w.i.t.a. through in-service training....." (34)

A more cautious remark came however from one headteacher. He said:

> "The project so far has proved workable and comparison in the years ahead will place us in position to decide better on its advantages over the old method." (19)

An approval score of only 6.1 was obtained from the teachers' responses to two statements in the questionnaire which sought information on the teachers' opinion as regards the extension of the use of w.i.t.a. The statements were:

12. Every child should learn to read through W.I.T.A.

18. Children should use T.O. not W.I.T.A.

Statement No. 12 was endorsed by 56% of the respondents while statement No. 18 was rejected by only 47%. These figures,

as well as the approval score of 6.1 indicate that, although some teachers approved of the use of w.i.t.a. by all children, almost as many others were either undecided or were opposed to such a move. It is remarkable, however, that 82% disagreed with the statement No. 7, "I shall not use I.T.A. again" while the others were undecided.

(ii) Three statements included in the questionnaire extracted information on the type of children the teachers felt could benefit by using w.i.t.a. The statements are as follows:

3. The dull ones need W.I.T.A. most

5. W.I.T.A. is not suitable for young children

6. Only bright children gain by using I.T.A.

Analysis of the teachers' responses to these statements showed that 79% of them disagreed with statement No. 5. A large majority of them therefore felt that w.i.t.a. is suitable for young children. It was also found that 62% agreed with statement No. 3, thereby indicating that the less-intelligent (i.e. dull) pupils gained most by using w.i.t.a. But since a good proportion (38%) either disagreed with or were undecided on this statement, there were obviously those who felt that bright children equally needed w.i.t.a. In this respect, the fact that 76% of the teachers disagreed with statement No. 6 implied the belief on the part of the teachers that both dull and bright pupils gained by using w.i.t.a.

Only two teachers made reference to the idea of dull and bright pupils in their written comments. One of these reflects the belief that w.i.t.a. helps both types of pupils. She wrote:

> "I strongly recommend for the W.I.T.A.'s continuation for the simple fact that it gives great help to the backward pupils in the class. Also gives room to brilliant pupils to go on their own." (8) (Underlining mine).

The other teacher felt that w.i.t.a. was probably responsible for widening the gap between dull and bright pupils. She remarked:

> ".... It is observed that the bright pupils are exceptionally bright and the dull ones are extremely dull, perhaps the project has caused this." (29)

By 'the project', this teacher apparently meant the use of w.i.t.a. The phenomenon observed by her may have arisen because once the bright pupils had started to make satisfactory progress, the teacher regarded the others as 'dull' and for that reason paid inadequate attention to them thereafter. The inevitable result would be a progressive widening of the gap between the two groups, so that the apparently dull seem even duller in comparison with the ever-improving 'bright' ones. This shows that w.i.t.a. is not a magic wand that will solve all problems. The teacher still has to make determined efforts in order to get the less able children on the road to reading. This is the idea adumbrated in one teacher's remark that:

> "The teacher's effort in the class is really needed to make the W.I.T.A. Project a success." (26)

The effect of the use of w.i.t.a. therefore is not to reduce the importance of the teacher's efforts, especially in paying greater attention to the slower ones, but to lessen the problems usually encountered in learning to read. Presumably, the less able would still encounter relatively greater difficulty than the brighter ones.

(iii) Some of the teachers' comments were related to the organization rather than the effects of the w.i.t.a. project itself. One teacher in Lagos wrote:

> "In my opinion, I think that NNE book II should be used in Standard I. Children are not to read book III in Standard I as the contents are rather difficult for them." (16)

This is an interesting observation because it clearly demonstrates the widely varying progress made by pupils in different classes. For while this teacher, who taught an experimental class, felt that Standard One (i.e. third year) pupils should not read Book Three, there were very many children in other experimental classes who finished reading that book when they were in Standard One.

Another teacher in Lagos expressed the opinion that:

> "Changing from W.I.T.A. to T.O. could be done before the third year. The W.I.T.A. and T.O. should have a class each in each school taking part and the teachers should work hand in hand." (24)

Indeed, a few children who attained the criterion level before the end of the second year did change over to T.O., but the large majority did not do so until the beginning of the second term of the third year. The teachers were free to decide when each child was ready. As regards having a W.I.T.A. class and a T.O. class in the same school, this was in fact done in two cases in Lagos, as it was regarded as the best method of ensuring the equality of experimental and control groups. It was found, however, that pupils in the two classes were often mixed. There was also surprising unwillingness on the part of one teacher to teach the other class when her colleague was absent because each was more interested in showing that her own class was better than the other one.

In contrast to this, one headmaster has suggested that two w.i.t.a. classes should be located in each school. He wrote:

> "In selecting classes for the project in any school, I suggest two classes at a time so as to promote competitive work. Refresher courses are to be organised termly for teachers participating in the teaching of the project. More individual apparatus or wall charts to be provided." (25)

It would probably be better to have two w.i.t.a. and two T.O. classes in each school so that either a w.i.t.a. or a T.O. class would have a willing teacher to rely upon if the regular teacher happened to be absent. Another possibility would be

to have the same teacher teach English in both classes as Downing did in his second experiment. But one weakness of this is that the w.i.t.a. class would suffer more in the absence of the English teacher because a stand-in for the T.O. class would be more readily available. Another weakness is that the teacher could have a bias in favour of one system as against the other, which might be reflected in her handling of each group; and it is difficult to guarantee that she would spend equal amounts of time with both classes.

Finally, two teachers from the same school in the Ibadan area commented on the tests given to their pupils. They complained that the tests were too difficult and were not taken from the pupils' reading books. One wrote:

> "The way the English test is set and conducted is above the knowledge of the pupils. The words have no bearing with their textbook - New Nation English." (11)

and the other also remarked:

> "W.I.T.A. is good and children gain from it, but the test given them in English is above their knowledge. And most of the tests are not from their books." (7)

It is remarkable that these comments came from teachers in the same school in which performance was poorer than it was in other schools. It was not considered either necessary or even desirable to take the tests from the pupils' textbooks. If this was done, there would be no basis for comparison either with other similar groups of children using different

textbooks, or between groups participating in the project, because the performance of each group would depend on whether the particular portions selected had been treated in class or not, and on how recently or how thoroughly it had been taught by the teacher. There was an obvious tendency by teachers to coach pupils towards specific tests if they suspected such tests would be used. For these reasons, tests which would be equally strange to all participating groups were used in the 1968 testing programmes.

J. SUMMARY.

Teachers' assessments of the effects of w.i.t.a. on various aspects of language learning were obtained both from their responses to statements contained in a questionnaire and from their free comments. Analysis of these responses and comments indicated that the advantages which teachers associated with the use of w.i.t.a. in descending order of unanimity of opinion (as shown by the approval scores listed in Table 8.2), were the improvement of English pronunciation, improvement of the rate of learning, promotion of interest in and favourable attitudes towards reading, and the ease of transfer to the reading of the more complex T. O. Both the

bright and the less-able pupils were believed to have gained by using w.i.t.a.

The teachers also appeared to have felt that, although writing and spelling were not impaired, w.i.t.a. did not confer appreciable advantages in these directions. They apparently felt that w.i.t.a. did not improve written English and probably affected it adversely.

Most of these expressions of opinion corroborated the test results described in previous chapters, and could therefore be regarded as having provided fairly reliable information on some aspects of the use of w.i.t.a.

CHAPTER IX

DISCUSSION OF RESULTS

A. INTRODUCTION.

Descriptions of tests conducted, the results obtained, and an indication of the conclusions derivable therefrom are contained in the last three chapters. In this chapter, the results are collated and discussed in relation to the hypotheses originally proposed, as listed in the fourth chapter.

B. DIFFERENTIAL RESULT FOR DIFFERENT AGE GROUPS.

It will be recalled that the pupils in Group A were already in their second year, of the Primary course when they started the experimental programme in January 1966 at an average age of seven years. A few of them were already beginning to read English in T.O. But according to the experimental programme, this group did not begin to read English until the third term of that year, so that they all most probably continued to have some contact with T.O. print. When reading later started in the classroom therefore, in W.i.t.a. for the experimental and T.O., for the control classes, it seems that pupils in experimental classes suffered some setback; although this did not show in the test conducted in December 1966 barely three months after reading had been formally introduced. But thereafter and even after transfer to T.O., the control classes in this Group (i.e. A) continued to perform better in English reading than the experimental classes.

Since the experimental classes in the other Groups, i.e. Groups B, C, and D, who started the experimental programme during their first year in school, performed better than the control classes, it appears that the stage at which the new orthography (w.i.t.a.) was introduced constituted an important factor in determining progress in learning to read it as compared with T.O. Presumably, the absolute age of the pupils was not the important consideration, but whether they had made some contact with T.O. before w.i.t.a. was introduced or not.

Some kind of 'proactive inhibition'[1] caused by the interference of the previously learnt T.O. with efforts to learn w.i.t.a. may have been responsible for the inferior performance of the experimental classes of Group A pupils. That the obtained differences in reading attainments did not reflect fundamental differences in abilities between the experimental and control classes in this Group was however indicated by the lack of significant differences between their performances in Yoruba reading and Arithmetic. But that it may have been partly due to better teaching of English generally in the control classes is suggested by their significantly better performance in Oral English[2] at the end of the first year.

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1. i.e. the phenomenon whereby something previously learnt interferes with new learning in such a way that the latter is distorted or forgotten.

2. See Table 5.3.

Hypothesis (xi) which states that

> "The influence, if any, of age at which reading is started, would not differ significantly for the two groups" (i.e. experimental and control groups)

is therefore rejected, for it appears that the later w.i.t.a. is introduced in the school programme the less likely it is to help the pupils. It does appear that transfer from one medium to the other affects progress adversely, and it is therefore better to stick to one medium than to change in mid-stream.

C. RATE OF PROGRESS THROUGH READING BOOKS.

Excepting for the differential results observed for Group A pupils, it was found that pupils in the experimental classes made faster progress through the NNE reading books than those in the control classes. There was, however, a slowing down of progress during the transition stage since pupils tended to go back to read in T.O. the same book they had been reading in w.i.t.a. The explanation for this is that the children had to learn new symbol-sound relationships at the transition stage. For example, words containing the sound /ai/[1] such as my, buy, and high, usually gave some difficulty at transition, as did all words containing sounds which are differently represented in the two systems, i.e. w.i.t.a. and T.O. The experimental pupils, however, soon caught up again after the slight initial setback at this stage.

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1. I.P.A. notation.

It would seem that the relative consistency of w.i.t.a. helped those reading through this medium to proceed at a faster rate than those reading through T.O.[1] The teachers were however worried that different children were ready for transfer at different times so that it was difficult to organize lessons for them together when a good proportion had made the transition but others had not. It appeared that the teachers' worry was due largely to lack of ability to handle group work, owing to inadequate training for primary school teachers.

Hypothesis (i) which states that,

> "The two groups (i.e. experimental and control) would not differ in their rate of progress through the reading books"

is therefore rejected in favour of the experimental group, although the case of Group A is an exception.

D. WORD RECOGNITION SKILLS IN ENGLISH.

The results of tests conducted in 1967 and 1968[2] to assess word recognition skills in English showed that the experimental classes of Groups B and C pupils were superior in these skills both before and after transfer to T.O., although the difference was not so large after transfer as before it in the case of Group C pupils. In the case of Group A, however, the control classes were superior throughout as already discussed in Section B above.

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1. See Table 5.3.
2. See Tables 5.2, 6.1, 6.2, 7.1, 7.2

It appears that the use of w.i.t.a. helped pupils to recognize English words more easily than T.O. did, and the superiority of the w.i.t.a.-taught pupils persisted after they had started reading T.O. The comparatively consistent relationship between symbol and sound which is a characteristic feature of w.i.t.a. presumably facilitated logical analysis of new words, and consequently pupils initially taught through the system were able to read more words. It also seems that this skill was transferred to the reading of T.O., although this was not always to the advantage of the learner, owing to the illogicality of T.O. According to the theory of the transfer of training, transfer is most effective when there are identical elements of contents and techniques in the original and a later learning materials. In this case, it is observed that many of the elements of w.i.t.a. are directly transferable to reading in T.O. But it is also known that when elements remain the same, but expected responses differ, negative transfer, i.e. interference, usually occurs. It was shown in this connection in Table 7.16 that words found relatively more difficult by w.i.t.a.-taught than by T.O.-taught pupils were predominantly those containing elements which demand different responses in w.i.t.a. and T.O. and sometimes in Yoruba orthography as well, while words found easier by the former group tended to contain a minimum of misleading cues in terms of the sound values of symbols in w.i.t.a., even though such words were unfamiliar.

It would appear that w.i.t.a.-taught pupils realised better that "a word", according to Hunter Diack[1], "is a time-chart of sounds", for they showed greater persistence in trying to break unfamiliar words by analysing them phonically, than did the T.O.-taught pupils.

On the other hand, the inferior performance of the experimental classes of Group A pupils indicated that where pupils had had some prior contact with T.O. material, the use of w.i.t.a. might create confusion in their minds: a confusion which could be accentuated by the simultaneous reading of Yoruba, since some identical elements in T.O., w.i.t.a., and Yoruba orthography would demand different responses in each system.

Hypothesis (ii) which states that,

> "They (i.e. the experimental and control groups) would not differ significantly in the amount of English words they can recognise"

is rejected, since pupils taught to read through w.i.t.a. before they had had any appreciable contact with T.O. could read more English words than those taught through T.O., while those who used w.i.t.a. after they had had some contact with T.O. could read fewer words than their counterparts taught through T.O. This is true both before and after transfer to T.O.

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1. Diack, Hunter (1965) op. cit. p. 53 and passim.

It may well be that the introduction of phonically graded material by means of the 'phonic word method' at the initial stages of learning to read in T.O. would produce similar if not superior results to those produced by using i.t.a., as suggested by Diack.[1] This should be investigated.

E. READING COMPREHENSION.

Reading comprehension is here used to mean the extent to which one grasps the meaning of the words and sentences that one reads as distinct from the mere ability to sound them out. The method used to assess this was that of sentence completion; the reasoning being that unless one appreciates the meaning or lack of meaning of the resulting complete sentence when one uses each of the alternatives supplied to fill a blank in a sentence it is unlikely that the correct alternative will be selected, although sentence structure or the occurrence of a 'learning unit' may sometimes give the cue to the correct alternative.

The scores obtained both on the Sentence Completion Test and on Part Two of Spooncer's Group Reading Assessment in December 1968, as shown in Tables 7.6 and 7.7, respectively, provided information on the achievements of the different groups of pupils in English reading comprehension. It was found that there were no consistent significant differences

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1. Diack, Hunter (1965) op. cit. p. 175.

between the experimental and control classes in any groups in this respect.

Reading comprehension obviously depends on the extent of the reader's contact[1] with the language and the size of vocabulary acquired by him. But since the pupils in comparable experimental and control classes were apparently equally limited in vocabulary it is not surprising that they were equally limited in reading comprehension. It may be observed from Tables 7.6 and 7.7, however, that the slight though statistically insignificant differences obtained were mostly in favour of the experimental groups. The probable explanation for this is that since pupils in the experimental classes tended to read more, they presumably had slightly more contact with the language than those in the control classes, and this was reflected in their slightly better performance in the reading comprehension test.

Hypothesis (iii) which states that;

> "They (i.e. experimental and control groups) would not differ significantly in reading comprehension"

is therefore accepted.

It seems that in order to improve reading comprehension, the pupils' contact with the English language in both the spoken and written forms should be increased both within and without the classroom.

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1. 'Extent of contact' includes both the frequency and range of exposure to forms of the language through books, teachers and other people, as well as the period of exposure.

F. ENGLISH PRONUNCIATION.

Assessment of the quality of pronunciation in English presumes the existence of a model against which proficiency may be measured. The question therefore arises as to what this model should be in the Nigerian context. But it is well known that any language, English not excepted, shows local variations even among native speakers let alone among those who use it as a second language, due to varying physio-lingual as well as cultural factors. It is therefore sometimes argued that just as distinctive local variants of the English language are used and recognized in the U.S.A., Canada, and even in different parts of Britain, a brand of English which is distinctively Nigerian should be recognized as the standard model in this country.

While it is true that the inevitable local variations may eventually lead to the emergence of a distinctive Nigerian model of English, such a model cannot now (1969) be used as a measuring standard for various reasons. Firstly, the characteristics of such a model are still to be defined. Secondly, since the well known tendency of habits associated with the mother-tongue to interfere with proficiency in a second language demands that allowance be made for such interference in assessing performance in the latter, it becomes much more difficult to define the characteristics of a distinctively Nigerian model for

Nigeria which is a multi-lingual country. Would different models be used for different ethnic or linguistic groups in the country? Such a move would obviously result in chaos.

One important objective in the definition of a model is the attainment of international intelligibility both in the structural and the articulatory aspects of the English language used in Nigeria. In other words, a model which is internationally intelligible should be the target. One form which is known to be internationally intelligible and the characteristics of which have been well defined is 'Received Pronunciation' (R.P.) This has been described in some detail by Daniel Jones[1] and it corresponds roughly to the speech of the educated folk of southern England, in and around London. Objections might be raised to the use of this as a model on the grounds that it is also a 'regional dialect', that is, a local variant of English, and that consequently other people who were not brought up in that part of the world are not likely to be able to speak exactly in this way. These are, however, not very serious objections.

In the first place, if international intelligibility is to be attained and maintained, a fairly widely recognized model is essential as the target and such a model will almost inevitably be a 'regional dialect': whichever dialect it is, is immaterial

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1. Jones, Daniel (1956). The Pronunciation of English. Cambridge University Press. 4th Edition.
" " (1963). Everyman's English Pronouncing Dictionary. London, J.M. Dent. 12th Edition. pp.XV-XIX.

provided the objectives are achieved. In the second place, people in different parts of the world need not acquire exactly the same forms of R.P. What is essential is that they should attain such approximations to R.P. as would make it possible to distinguish adequately the different phonemes of English, so that there is as little chance as possible of confusion. It is for this reason, and with these reservations that R.P., on which transliterations into w.i.t.a. were based, is regarded by the writer as a suitable target model for Nigeria.

Those aspects of R.P. which are likely to constitute a problem to pupils in those parts of Nigeria where w.i.t.a. was used experimentally, that is, mainly for Yoruba-speaking pupils, were in the articulation of certain consonant and vowel sounds which either do not exist, or are not adequately differentiated, in the mother-tongue, as well as in the proper use of stress and intonation patterns which are not significant features of the mother-tongue. Improvement of pronunciation in English has therefore meant largely increased proficiency in these aspects in particular as well as in the articulation of English phonemes generally according to R.P. standards bearing in mind, of course, the limitations.

From the results of the tests conducted in 1967 and 1968, it was observed in most cases that pupils in the experimental classes of Groups B and C were rated as significantly superior

in English pronunciation to those in control classes, although as usual, the result for Group A was an antithesis of this.

This superiority of the experimental classes in pronunciation is not surprising since w.i.t.a. contains a more reliable cue to the phonemes and stress patterns of English than T.O. does. It is interesting that this superiority of the w.i.t.a.-taught pupils persisted after they had started reading in T.O., as shown both by the results of tests conducted in December 1968[1], and from the teachers' observations - as described in Section C of the eighth chapter. It seems that the habits of using good pronunciation and appropriate stress patterns are best inculcated at the early stages, and that w.i.t.a. could serve as a suitable means of establishing such habits, for it would guide not only the pupils when they read but also their teachers who would thereby be able to serve as more reliable models for their pupils to imitate.

Hypothesis (iv) proposed in Section D of the fourth chapter as follows:

> "They (i.e. the experimental and control groups) would not differ significantly in the quality of their English pronunciation"

is therefore rejected, and it is concluded that w.i.t.a. produces better pronunciation.

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1. That is, about eight to twelve months after transition to T.O., when the pupils would have been reading material containing a good proportion of vocabulary and structure not previously read in w.i.t.a.

G. SPELLING IN T.O.

Downing[1] has proposed the hypotheses that, "The clarification of linguistic structure (through the use of systems such as i.t.a.) facilitates children's perception of the phonemes, the spoken words, the grapheme, and the written word as separate units; this facilitation of the perception of linguistic units leads to improvement in the process of synthesis of phonemes into whole words; this improved perception of these linguistic units as units in early reading is an important cause of superior attainments in reading and spelling". Attention was paid to the effects of w.i.t.a. on subsequent spelling in T.O. in the Nigerian experiment here reported.

The spelling test conducted in June 1968, roughly three to six months after the experimental groups had transferred to T.O., indicated that the experimental classes of Group B were superior to the control classes, while the control classes were superior to the experimental classes in the cases of Groups A and C, as shown in Table 6.3. But six months later, i.e. in December 1968, no consistent significant differences were found in favour of either the experimental or the control classes in any of the three Groups - A, B, and C - when they were given both written and recognition spelling tests, as shown in Tables

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1. Downing, J.A. (1969). The Perception of Graphemic and Phonemic structure in Learning to Read. (Abstract) Bulletin of the British Psychological Society. Vol. 22, No. 75, (April), p. 138.

7.4 and 7.5.

It seems that the T.O. spelling achievements of comparable groups of children who had learnt to read through w.i.t.a. on the one hand and those who had learnt to read through T.O. on the other became progressively more homogeneous according to the length of time since the w.i.t.a.-taught group transferred to reading T.O. It may well be, however, that the experimental groups will eventually become superior to the control groups, but since grapheme-phoneme relationships are inconsistent in T.O. spelling, it seems that T.O. spelling attainments will depend on the amount of contact with written English plus any formal or incidental spelling drill.

According to the available information to date, it may be said that w.i.t.a. neither had any adverse effects on the pupils' spelling in T.O., nor did it produce superior spelling attainments. This confirms results previously reported by Swales.[1]

Hypothesis (vi) proposed in the fourth chapter that,

> "They (i.e. experimental and control groups would not differ significantly in the number of words they can spell correctly",

is therefore accepted.

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1. Swales, T.D. (1966). The Attainments in Reading and Spelling of children who learned to read through the i.t.a. M.Ed. Thesis, Manchester 1966. Abstract in British Journal of Educational Psychology. Volume 37 (1967), pp. 126-127.

H. GENERAL READING ATTAINMENTS.

According to the results[1] obtained from Spooncer's Group Reading Assessment, which is a composite test of word recognition, reading comprehension and word sounding, neither the experimental nor the control classes within each Group could be said to be superior to the other in general reading attainments. It appears that the differential effects of w.i.t.a. and T.O. were limited to word recognition and pronunciation skills, as already discussed above, probably because performance on this type of composite reading test, as on the reading comprehension test, depends more on the level of proficiency in other language skills than on the ability for mere word recognition or word sounding.

Improvements in this area will come with more contact with the language through reading and listening. The children should read more books, the teachers should provide more opportunities for them to listen to spoken English both through their own speech and through appropriate radio broadcasts, for according to Miller[2] children and adults are indirectly influenced by the stream of English from the radio in their use and understanding

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1. See Table 7.8.

2. Miller, D.C. (1964). The Limitations of Radio in the Teaching of English as a Second Language in countries like Nigeria. Teacher Education. Volume 5, No. 1, (May) pp. 21-29.

of English, and this stream constantly stimulates fuller use of the language.

I. ATTAINMEN S IN OTHER SCHOOL SUBJECTS.

It was conjectured that if w.i.t.a. and T.O. differently influenced progress in learning to read English, they might also differently affect the pupils' attitudes and their methods of approach to learning tasks in school generally, which could be reflected in their progress in some other school subjects such as Yoruba Reading and Arithmetic. The performances of the experimental and control groups of pupils in Yoruba Reading and Arithmetic were therefore assessed and compared as already described in previous chapters. The results obtained are here discussed.

(i) Yoruba Reading: In the Yoruba Reading tests conducted in 1966 and 1967, no significant differences were found[1] between experimental and control groups, except in the case of Group B where the experimental sub-group was decidedly superior to the the control group in 1967. In 1968, however, the experimental class within only one of the three pairs of matched experimental and control classes compared in Group B was significantly superior to the control class, while one of the three pairs compared in Group A and one of the five pairs compared in

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1. See Table 5.12.

Group C showed significant difference in favour of the control class in each case.[1] It is clear therefore that significant differences were obtained between experimental and control classes in Yoruba Reading in only a minority of cases. But since the obtained differences tended to point in the same directions as those obtained in English Reading, they suggest that there was a slight positive relationship between performances in English and Yoruba Reading.[2] The relationship was, however, observed in too few cases to justify any conclusion other than that the use of w.i.t.a. or T.O. in the teaching of English reading apparently had little or no influence on attainments in Yoruba reading. Although it may be expected that since both Yoruba orthography and w.i.t.a. are relatively phonically consistent, proficiency in Yoruba reading would more favourably influence progress in English reading when learnt through w.i.t.a. than when learnt through T.O., it seems that this advantage was offset by the fact that some symbols, such as e, o, and u, which are common to both Yoruba orthography and w.i.t.a., have different phonemic values in the two writing systems thereby constituting a source of difficulty for the w.i.t.a.-taught pupils.

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1. See Table 6.5.

2. See Appendix XXVIII.

(ii) Arithmetic:[1] No significant differences were obtained between the experimental and control classes within either Group A or Group C in Arithmetic. But in the case of Group B, the experimental classes had significantly higher scores. It has been argued that this difference obtained in one out of three cases probably arose from other factors than that attributable to the differential effects of w.i.t.a. and T.O., although these might have contributed to the obtained differences. The conclusion here therefore is that the use of w.i.t.a. or T.O. in the teaching of English reading had no discernible influence on performance in Arithmetic.

Hypothesis (vii) proposed that,

> "They (i.e. the experimental and control groups) would not differ significantly in their performance in other selected school subjects, namely, Yoruba and Arithmetic",

as proposed in the fourth chapter is therefore accepted, with the reservation, however, that in the case of Yoruba, there was a tendency for the few differences obtained between experimental and control classes to point in the same directions as those obtained in English reading.

J. THE EFFECTS OF SEX DIFFERENCES ON PUPILS' PERFORMANCE.[2]

In an attempt to discover whether w.i.t.a. or T.O. favoured one sex group better than the other, the performances

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1. See Table 5.13.
2. See Tables 5.14 to 5.16 inclusive; Table 6.7; and Tables 7.9 to 7.13 inclusive.

of boys and girls within the same experimental and control sets were compared in the tests conducted. No generalized statistically significant differences were found between boys' and girls' scores within the same experimental or control sets, except that within the experimental set of Group B, the boys tended to be significantly superior in most tests to the girls. Since this tendency was not observed either in the case of the experimental sets within the other groups i.e. A and C, or in the case of the control sets within any of the three groups, this isolated case of the superiority of the boys in the experimental set of Group B obviously indicated a fundamental difference in abilities between the boys and girls in that set, independent of the use of w.i.t.a. in the teaching of English reading.

It was observed, however, that while, in Lagos, the girls tended to perform slightly better than the boys in language (i.e. English and Yoruba) tests, and vice versa in Arithmetic tests, the boys in the Ibadan area generally tended to perform slightly better than the girls. But by December 1968, the boys had a slight edge over the girls generally both in Lagos and in Ibadan areas. Such differences were, as already remarked, independent of experimental or control group.

Hypothesis (viii) which states that,

> "The influence, if any, of sex on performance would not differ significantly for the two groups" (i.e. experimental and control)

is therefore accepted, since it was found that the effects of w.i.t.a. or T.O. were similar for both boys and girls.

K. PUPILS' ATTITUDES AND THEIR RELATIONSHIP TO PERFORMANCE.

Attitudes were defined, as Schram[1] had done, as "inferred states of readiness to react in an evaluative way in support of or against a stimulus situation". The central core of this 'evaluative' reaction for or against was operationally defined as a feeling of liking or dislike for that particular stimulus situation. Teachers were therefore asked to rate their pupil's attitudes to English reading and school generally according to their own estimates of the pupils' liking or dislike for them. It may be objected that teachers' ratings could not produce the best index of pupils' attitudes. But with such young children, self report would be unsatisfactory since it was found they were more likely to respond according to what they thought was likely to please the tester. Individual observation under set conditions for the inference of attitudes would be time consuming. In the circumstance, the ratings made by the class teachers who knew each pupil well would be the best index of the pupils' attitudes provided they rated conscientiously and to the best of their knowledge of the pupils.

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1. Schram, Wilbur (1955) Ed.: The Process and Effects of Mass Communication. Urbana, University of Illinois Press. p. 209.

Comparison of the ratings of experimental and control classes showed that they did not differ significantly in their attitudes to English reading[1] and school[2] generally. One exception was the case of Group A, however, where the experimental group was rated as having significantly more favourable attitude to English reading than their control counterparts. Since the control classes of Group A actually had higher scores in English reading, this raised doubts as to the reliability of the teachers' ratings of their pupils attitudes. It may be argued that this might not indicate low reliability of the ratings, for attitude is not necessarily directly related to performance. It may be therefore that w.i.t.a. promoted more favourable attitude to English reading than T.O. did, even though the control group performed better. It may be asked, however, that if this was the case, why were the experimental classes in the other Groups, i.e. B and C, not rated as having significantly more favourable attitudes. One possible reason is that since the pupils in this Group, i.e. A, had had some slight contacts with T.O. before the experimental classes started reading w.i.t.a., this new medium probably aroused more favourable attitudes because of its novelty value, whereas it had no such novelty value for the other Groups, i.e. B and C,

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1. See Tables 5.18, 5.19, and 5.20.

2. See Tables (i), (ii), and (iii) - Appendix XXVI.

because they were coming to school for the first time and presumably knew nothing besides w.i.t.a. which was introduced for teaching them to read.

It may be concluded therefore that w.i.t.a. and T.O. were apparently not different in their effects on pupils' attitudes either to English reading or to school, except that where w.i.t.a. was introduced when pupils had had some contact with T.O., it appeared to have had some novelty value and therefore probably produced more favourable attitudes to English reading.

Hypothesis (vi) proposed in the fourth chapter, that:

> "They (i.e. experimental and control groups) would not differ significantly in their attitudes to reading and school generally"

is therefore accepted, excepting, as has been pointed out, that w.i.t.a. seemed to have produced more favourable attitudes to reading if introduced late, that is, when the pupils had had some contacts with T.O.

L. INFLUENCE OF INTELLECTUAL ABILITY.[1]

The influence of intellectual ability on the performances of experimental and control classes was compared. This was done by comparing the percentage proportions of the more and the less intelligent pupils in the experimental and control sub-groups who were high or low achievers in English reading. The question posed in this respect was whether either of the two writing

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1. See Table 5.17.

systems (i.e. w.i.t.a. and T.O.) tends to affect the more and the less intelligent pupils differently.

It was found that in the case of pupils in Groups B and C, the percentage proportions of both the more and the less intelligent pupils who were high achievers in English reading (i.e. scoring equal to or above the Group Median) were greater among the experimental than among the control sub-groups. This indicates that w.i.t.a. helped both the more and the less intelligent pupils in Groups B and C than T.O. did. In the case of Group A, however, it was found that these proportions were higher among the control than among the experimental sub-groups; which suggests that T.O. was better than w.i.t.a. for both the more and the less intelligent pupils in that Group, and confirms that w.i.t.a. did not help when introduced late in the same way as it helped when introduced early.

Hypothesis (ix) proposed in the fourth chapter as follows:

> "The influence, if any, of intellectual ability would not differ significantly for the two groups" (i.e. experimental and control)

is therefore rejected, since w.i.t.a. appeared to have produced greater proportions of high achievers in English both among the intelligent and the not-so-intelligent pupils than T.O. did, except where w.i.t.a. was introduced relatively late in the school course.

M. INFLUENCE OF SOCIAL BACKGROUND.

The pupils involved in the experimental programme in the Lagos and Ibadan areas came from different social backgrounds, as described in Section C of the fourth chapter. While those in the Lagos area came from urbanised families and lived in areas where they had relatively greater opportunities for contact with radio broadcasts, magazines, books, newsprint, spoken English outside school, and in some cases television programmes, those involved in the Ibadan area belonged to rural communities, where their reading was limited to school text-books and their contacts with English speech was limited to that which came from the teachers and others at school. While the parents in the former were mainly in salary-earning employment such as in the police force, army, clerical services business, factory work, as well as in professional jobs such as the medical, legal, and pedagogic, those in the latter area were mainly farmers and farm-hands. Group B and Group C pupils in Ibadan and Lagos areas, respectively, who both entered the experimental programme in 1966 therefore provided opportunity for observing the effects of differing social backgrounds.

Differences in the performances of these two Groups of pupils would be accountable partly to differences between the schools and teachers in each area, and partly to differences

between the two groups of children arising from their differing social backgrounds. But comparison of the difference between the performances of the experimental and control sub-groups in one area with the difference between the performances of the two sub-groups in the other area was expected to indicate the different effects of w.i.t.a. and T.O. in the two different social climates.

It was observed[1] that although the experimental classes of both Group B (in Ibadan area) and Group C (in Lagos area) tended to be superior to their control counterparts in English reading and pronunciation skills, the differences between the two types of classes in Group B tended to be greater than those obtained between them in Group C. This suggests that the effects of w.i.t.a. in making pupils superior in these skills to those using T.O. were relatively stronger in the rural (Ibadan) than in the urban (Lagos) areas.

This may be due to the greater exposure of the pupils in the urban area to T.O. material and to broadly the same type of spoken English both through radio broadcasts and through personal contacts outside of school. This would tend to reduce the divergent effects of w.i.t.a. and T.O. on pupils' performances in this area. But in the rural areas, since contact was made with English mainly through the textbooks and the teachers,

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1. See Tables 5.1, 5.2, 6.1, 6.2, 7.1, 7.2, 7.3, 7.14.

the divergent effects of the writing systems - w.i.t.a. and T.O. - would be more pronounced; just as the test results indicate.[1]

Hypothesis (x) proposed in the fourth chapter as follows:

> "The influence, if any, of the social background of pupils on their performance would not differ significantly for the two groups" (i.e. experimental and control)

is therefore rejected, since a rural social background appeared to have brought the differential effects of w.i.t.a. and T.O. on reading and pronunciation skills more sharply into focus.

N. THE PRE- AND POST-TRANSFER PERFORMANCES OF THE EXPERIMENTAL, RELATIVE TO THOSE OF THE CONTROL, CLASSES.

Where thorough work had been done by the teacher during the initial oral English teaching period, most pupils required only about one school-year of reading w.i.t.a. print before changing to T.O. Some pupils, however, required about three months more before they were ready to change to reading T.O.

The transition stage gave a few teachers some difficulties because different children were ready for transfer at different times. Class lessons then demanded more careful planning in order to cater for the interests of children with different levels of ability and attainments. It is important that teachers should be patient, and develop the techniques of individual and

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1. See Tables 5.1, 5.2, 6.1, 6.2, 7.1, 7.2, 7.3, 7.14.

small-group teaching within the context of a bigger class in order to take the pupils smoothly through the transition stage.

For their individual reading during the transition stage, children were allowed to keep for some time the w.i.t.a. edition of the book they had been reading just before transfer. Within the first three or four weeks after transition, children's reading fluency was not so good in T.O. as it had previously been in w.i.t.a., especially when they had to read words like 'who', 'John' and 'you're' whose T.O. forms look rather different from their w.i.t.a. forms.

It was observed that the relative performances of the experimental and control sub-groups remained after transition as they had been before. The experimental sub-group of Groups B and C which had performed significantly better than their control counterparts in oral reading and pronunciation in English before transition to T.O. also continued to be superior after they (the experimental sub-groups) had made the transition.[1] Similarly, the control sub-group of Group A, which had been found superior to the experimental sub-group before the transition continued to be superior after the latter had transferred to T.O. These relative performances were observed both six months and about one year after the transition.

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1. See Tables 5.1 and 5.4 to 5.11 for pre-transfer, and Tables 6.1, 7.1 and 7.3 for post-transfer scores.

It appeared therefore that where relative superiority in oral reading and pronunciation skills was gained by learning to read through w.i.t.a., it persisted when T.O. was substituted for w.i.t.a.

In spelling, which could not be assessed before the experimental sub-groups had made the transition to T.O., it was observed[1] that although the control sub-groups within Groups A and C tended to perform better than their experimental counterparts, but vice versa in the case of Group B, soon after the transition, the two sub-groups within each of these groups became progressively more alike in spelling attainment with time since the experimental classes made the transition to T.O. It could not be said therefore that one coding system would eventually result in superior spelling attainments over the other.

Hypothesis (xii) proposed in the fourth chapter as follows:

> "The post-transfer performance of the experimental group would not differ significantly from their ante-transfer performance relative to that of the control"

is therefore accepted since relative performances remained largely the same after transition as they had been before it.

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1. See Tables 6.3, 7.4 and 7.5 for the scores on spelling.

O. MISCELLANEOUS.

(i) Schools: The schools involved in the experiment in the Ibadan area, while typifying to a great extent conditions prevalent in the rural areas of the Western State, could not be representative of the schools in the urban areas, and accordingly results and conclusions reached regarding the use of w.i.t.a. in Ibadan area are of limited applicability. These 'rural' schools were confronted with special problems which could not but affect the results obtained in the experiment.

The teachers in the 'rural' schools were often of a lower calibre than their counterparts in the township; and where they were equally qualified they could or would not give of their best for various reasons. These included the insanitary conditions in the villages and poor or total lack of suitable accommodation for teachers which made village life almost intolerable for them and necessitated their travelling to town either daily or weekly; the lack of the most basic materials for both teachers and pupils on many occasions; the frequent absence of female teachers on maternity leave without the provision of adequately qualified teachers as relievers; the occasional and often sudden departure of some teachers necessitating the re-deployment of the remaining ones in the affected school, often to the detriment of classes involved in the experiment; and the poor health of the pupils which resulted in their irregular attendance at school.

In contrast, the schools involved in the Lagos area were exposed to both the advantages and the disadvantages of their being situated in urban settings. On the one hand, most of the teachers were adequately qualified and the staffing more stable; materials for both teachers and pupils were readily supplied in most cases; pupils attended regularly and there was in fact constant pressure on classroom spaces. On the other hand, the schools tended to be over-crowded, they were subject to disturbing noise for a large proportion of school time, and the two-shift system made it difficult for the teachers to leave any materials such as wall charts, books, and other aids as they were likely to be damaged or even completely removed by the other groups using the same classrooms.

Such conditions were typical of Lagos schools, except a few, and results obtained would be applicable to most of the other schools in the municipal areas of Lagos. They would also be applicable to some extent to other urban areas of the country where children tend to have relatively greater contact with books, newsprint and spoken English both through personal contacts and radio broadcasts.

The values of w.i.t.a. in the teaching of English both in rural and urban areas have thus been demonstrated, and it should therefore be more widely used in Nigeria and other countries where English is taught as a second language.

In such countries, the quality of English pronunciation, both in speaking and reading, tends to be poor, owing partly to the unreliability of traditional English orthography as a guide to pronunciation, and partly to the poor quality of the teachers' own enunciation in English. Further more, since the reading of books tends to play an important role in the children's contact with English, a writing medium which could help them to make fast progress in learning to read would be of immense value. The use of w.i.t.a. would help both in improving pronunciation and in promoting faster progress in learning to read.

(ii) Teachers: Primary school teachers in Nigeria obviously need more training in English teaching methods. There should be greater emphasis on flexibility on the part of the teachers. They should be prepared to use their own initiative and learn to teach their pupils in groups according to different rates of progress. They should realise that instructions contained in any course book that may be recommended by the Ministry of Education for the time being are meant to serve as a guide and not as inflexible rules. There is too great a tendency on the part of teachers to teach all the members of a class as if they were all of the same ability.

It is felt that w.i.t.a. would serve a useful purpose in the training of teachers both in spoken English and in reading since it provides a relatively consistent guide to pronunciation

and sentence rhythm. It is recommended, therefore, that in order to improve the teachers' pronunciation both in the reading and speaking of English, teachers in training should be introduced to w.i.t.a. which is relatively easier to learn than phonetic notation, as indicated by the fact that most adults who are literate in English in T.O. do read w.i.t.a. print with little difficulty at first sight.

The teacher of English as a second language should use activity methods, clear picture charts, picture books, models and other forms of visual aids for the oral teaching of English. He should give his pupils constant practice in producing the sounds of English, not in isolation, but in words and sentences. Emphasis should be laid on those sounds which are likely to create difficulty either by reason of the interference of habits formed in the native language or because such sounds are completely absent from the pupils' own language.

Extensive practice in spoken English should precede the beginning of reading because this aids reading progress and reading comprehension later when the mechanics of decoding sounds from written symbols have been mastered. Reading at first should also be mainly oral reading because this reinforces the production of the sounds of the new language. There is therefore no chance for a complete non-oral reading of the type advocated by McDade[1].

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1. McDade, James E. (1937). A Hypothesis for Non-oral Reading. Journal of Educational Research. Volume 30.

Opportunities should be provided as much as possible for the use of the language both in reading and speaking so that its sounds and structures are gradually learnt directly rather than through the learning of rules. All these demand, as has been said, that the teacher be thoroughly trained both in the pedagogical techniques and in the use of the language itself. It was observed in the course of this experiment that Primary school teachers lacked suitable training in this direction.

Various other avenues for contact with the language should be sought. Where facilities exist for listening to radio broadcasts, the English teaching programmes of the Nigerian Broadcasting Corporation could be made to serve useful purposes in the instruction of the pupils. Where possible too, recordings of suitable passages read by competent users of the language could be played back to the pupils while they follow such passages in their books. Above all, the teacher himself should serve as a model and endeavour to use the language for ordinary communication with his pupils, as appropriate. In addition, w.i.t.a. should be used as an aid in improving the teacher's reading and pronunciation in English.

(iii) Writing: Handwriting, that is, the practice of mechanics of forming shapes and words, was introduced before the pupils started reading from books. Some of the words and sentences learnt during the oral English lessons were also

copied from the blackboard in w.i.t.a. by the experimental and T.O. by the control pupils during 'writing' lessons, both just before and after reading from books had begun. When the reading books had been introduced, the copying of words and sentences read from the 'Readers' was encouraged since it was believed that this would promote progress in word and sentence recognition as has been shown by Fernald and Keller[1]. This was however done during 'English' lessons. Exercises which consisted in the writing of answers to questions were also done occasionally. Because much less of such written exercises was done in classes participating in the experiment than was usual in non-participating classes, the headteachers tended to get impatient and feared that the participating pupils would be inferior in written English later.

Of course the expression by children of their own ideas in writing lagged behind because they lacked the necessary vocabulary in the language for expressing such ideas. But the teachers were encouraged to guide the children in writing 'news' and short sentences on simple scenes usually presented pictorially, so that the children might develop interest in committing their own ideas to writing.

Pupils in experimental classes did their writing in w.i.t.a. before transition, while those in control classes wrote in T.O.

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1. Fernald, G.M., and Keller, H.B. (1921). Effects of Kinesthetic Factors in Development of Word-Recognition. Journal of Educational Research. Vol. 4, p. 35.

all the time. It may be objected that children should not have been made to write in w.i.t.a. when such habits were to be changed later. But it should be realised that nearly all the movements made in writing w.i.t.a. symbols are directly useful in writing the letters used in T.O. so that practice gained in writing w.i.t.a. were directly transferable to writing T.O.

(iv) Organization of the experiment: The investigation suffered the usual problems of a longitudinal study. Teachers changed in many cases during the experiment and many pupils involved originally left the schools, while many new ones not involved have had to be placed in participating classes, but only after the experimental classes had changed to reading T.O. materials. This happened because the headmasters could not afford to have comparatively few pupils in the participating classes while there was great pressure on available spaces in non-participati classes. The scores of new pupils were ignored in the analysis of results.

Differences between teachers, it might be argued, would influence results obtained for various classes in the experiment Efforts were made to ensure that teachers of matched classes were of similar qualification, but whatever differences could exist would not be consistently in favour of either the experimental or the control classes, and it could be reasonably expected that such differences would be evened out. Admittedly

a theoretically better approach would be to let the same teacher teach English to both the experimental and control classes in the same school. Even if it were possible to arrange this, it would have the disadvantage that one cannot guarantee that the teacher would not be biased in favour of one coding system or have a closer attachment to one class, and would expend her energy equally in the two classes. It would be useful to try this arrangement with w.i.t.a. although it has been tried by Downing with i.t.a. in Britain. It might well turn out that the use of w.i.t.a. by the experimental class would so affect the teacher's pronunciation that the pupils in the control class would pick the same pronunciation from him, with the result that the experimental and control classes would not differ in that respect.

P. SUMMARY.

The results of the various tests conducted in the first three years of the experiment, that is, 1966 to 1968, as described in the last four chapters, have yielded information on the relative performances of the experimental and control groups. These results have been discussed in the earlier sections of this chapter and conclusions drawn on the contrastiv effects of using two different coding systems in learning to

read, which the experiment was designed to discover. Conclusions have also been drawn from the observations made by both the class teachers and the author. W.I.T.. has certain advantages in the teaching of English in certain circumstances. This study is summarised in the next chapter where recommendations are also made in the light of conclusions already reached.

CHAPTER X

SUMMARY AND RECOMMENDATIONS

A. THE INVESTIGATION.

World Initial Teaching Alphabet (w.i.t.a.) was designed by Sir James Pitman who thought it would be supremely suitable for the teaching of English reading in countries using English as a second language[1]. This coding system is another one in the long line of new coding systems aimed at making learning to read English easier by achieving more consistent symbol-sound relationships, than is the case in Traditional Orthography (T.O.). In addition, w.i.t.a. contains clues for identifying stressed and unstressed syllables as well as the changes in vowel sounds in stressed and unstressed positions.

In this study, a survey of the various methods used in the teaching of reading led to the examination of the different graphemic systems which have been suggested for the writing of English at one time or the other, and this finally culminated in the tracing of the antecedents to the development of the Initial Teaching Alphabet (i.t.a.) which gave birth to w.i.t.a. An experimental study of the values and problems of teaching children to read through w.i.t.a. in schools in some parts of Nigeria was planned and executed. The investigation was a

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1. c.f. Pitman, Sir James, & St. John, John (1969). Alphabets and Reading. London. Sir Isaac Pitman and Sons. pp. 266-267

longitudinal one in which, during the years 1966 to 1968, some groups of young school children first learnt to read English through w.i.t.a. and then changed over to reading T.O., while other parellel groups of children who learnt to read through T.O. right from the beginning served as control.

Two distinct types of schools were involved in the experiment, viz: seven schools in the rural areas to the north of and near Ibadan, and fourteen schools situated in urban settings in Lagos area. Two Groups of children, i.e. A and B, were taken into the experiment in 1966 when they were in their first and second years respectively, in schools in the Ibadan area, and a third Group, i.e. D, was taken in 1967. In the Lagos area, one Group, i.e. C, consisting of children who were entering school for the first time were taken into the experiment in 1966. Each of these four Groups of children consisted of two sub-groups, i.e. the experimental and the control sub-groups. Efforts were made to ensure that the sub-groups, in each case were equally matched in ability and location of school. The experimental and control classes were similarly treated and all the essential materials for both teachers' and pupils were supplied. By means of tests, observations and teachers' reports, the differential effects of using two different coding systems in the teaching of English were discovered.

B. RESULTS.

It was found that this type of investigation was fraught with problems relating to the continuity of teachers and pupils. Unexpected changes in staffing and the departure of some pupils made the even matching of experimental and control groups difficult. The controlling authorities as well as the teachers, however, co-operated to maintain continuity of teachers as far as possible.

It was also found that the beginners, that is, in Groups B, C and D, who learnt to read through w.i.t.a. were superior to their control counterparts in oral reading and pronunciation in English before they made the transition to T.O. This superiority was maintained after the transition to T.O. It is argued that the relative consistency of the symbol-sound relationships in w.i.t.a. helped the children in the experimental groups to make better progress in reading than did those in the control groups who used T.O.

In the case of Group A children who were in their second year in school before the experimental programme was introduced it was found, however, that the control group performed better than experimental group both before and after transition to T.O. The suggested explanation is that the introduction of w.i.t.a. when the children had had some contact with T.O.,

even though they could not read yet, probably had some adverse effects on their progress in learning to read. It is thought that their former contact with T.O. probably interfered with their efforts in learning to read through w.i.t.a. later.

In those Groups where w.i.t.a. helped the pupils to make better progress than did T.O., it helped both the more and the less intelligent pupils more than T.O. did. The result is that a greater proportion of pupils using w.i.t.a. reached a criterion level in reading than the proportion of those using T.O.

Performance in Arithmetic and Yoruba reading appeared not to be directly related to the coding system used in learning to read English, because experimental and control groups tended not to differ significantly in this respect. In attitudes to school and reading, experimental and control groups were not different, excepting in the case of Group A pupils where the experimental group had more favourable attitudes. The performance of this group is explained by the fact that w.i.t.a. which was introduced when they had had some contact with T.O. was some sort of novelty to them and for this reason probably aroused more favourable attitudes, whereas in the case of the other groups both w.i.t.a. and T.O. would be equally novel since there had been no previous contact with any other system.

A period of about twelve to fifteen months of reading w.i.t.a., subsequent to about nine to twelve months of purely oral English lessons, was required before transition to T.O. The transition period was not associated with any special problems for the pupils although, as might be expected, there was a temporary slowing down of progress during this stage when they had to learn some new symbol-sound relationships in T.O. The teachers were however confronted with the problem of organising lessons in a class containing pupils at different levels of attainments in reading, with some reading w.i.t.a. and others T.O. Better training in the handling of small groups within a bigger class, development of the flexibility of approach, and patience on the part of the teacher, as well as a change of attitude among those who inspect teachers' and pupils' progress would however make the transition stage an easier and smoother one for the teacher.

In reading comprehension and general reading attainments, the experimental and control groups were not significantly different, probably because the acquisition of a functional vocabulary and syntactic structures in English was not much different for the two groups. Although T.O.-taught pupils tended to be superior in spelling soon after the w.i.t.a.-taught pupils had changed to using T.O., attainments in spelling became progressively similar in time.

Finally, it appeared that the differences between experimental and control sub-groups within each of those Groups of pupils in the rural areas of Ibadan tended to be greater than those observed between the two sub-groups within Group C in the urban areas of Lagos. This indicates the influence of social background.

C. RECOMMENDATIONS.

In the light of the results obtained in this experiment, the following recommendations are put forward:

(i) Since w.i.t.a. has appreciable values in teaching English reading in second language situations, it should be more widely used both in Nigerian schools and in other parts of the Commonwealth where English is used as a second language.

(ii) For maximum benefit to be derived from the use of w.i.t.a. as an initial teaching medium, it should be introduced before the pupils have had contacts with the Traditional Orthography.

(iii) Since w.i.t.a. has the effect of improving the teachers' English pronunciation, primary school teachers in Nigeria should be taught to read w.i.t.a. through in-service training, and all those in teacher training institutions should learn to read it.

(iv) In addition to the recommendation in sub-section (iii) above, all primary school teachers should be further trained in the techniques of language teaching - both in speaking and reading - so as to promote greater initiative and flexibility in their approach to teaching.

(v) An investigation should be conducted in the near future to discover the relative values of using phonically graded material to teach children to read by the 'phonic-word method' in T.O. and w.i.t.a.

(vi) Where schools having multi-streams are involved in any such experiment, attempts should be made to let the same teacher teach the matched experimental and control classes using two different orthographic systems, in the same school.

(vii) Course books recommended for the teaching of English in second language situations, such as in Nigeria, and most especially at the initial stages, should always be those that provide in the "Teachers' Notes" suitable and adequate guidance on both the organization and contents of oral English lessons.

(viii) Comparative studies involving the use of w.i.t.a. and other new orthographic systems should be undertaken in a continued search for the most advantageous system for teaching reading and writing to

learners of English.

(ix) Tests should be designed and standardised for measuring Nigerian primary school pupils' attainments in spoken English and reading.

(x) Analyses of the orthographic systems of the major Nigerian languages should be undertaken with a view to designing initial reading materials in English which would enable Nigerian children who first learned to read in the mother tongue, or any other Nigerian language, to make maximum transfer of the skills acquired in reading such a language to the reading of English.

(xi) The progress of the pupils involved, both as experimental and control groups, in the experiment reported in this thesis, should continue to be observed and measured for the purposes of comparison until they complete their primary school course.

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LIST OF APPENDICES

Appendix I (a)

'World i.t.a.' Project

Tests of Intelligence for young children

VERBAL SCALE

A. Perceptual

1. What do you smell with?

   Kini o fi ngborun?

2. The knee is to leg as elbow is to what?

   Bi orokun ti ri si ese, beni igbonwo se ri si kini?
   (or 'igunpa').

3. Bananas have skins just as snails have what?

   Bi ogede se ni epo, beni igbin se ni kini?

4. Why do some animals have thick shells?

   Nitori kini awon eranko miran se ni ikarawun t'o nipon?

5. In the evening, we see red sky because the ..... is going. What is going?

   Ni irole a ma nri oju orun to pupa nitori kini kan nlo, kini nlo?

B. Learning

Direction - Read the list of pairs of words slowly from No. 1 - 5, then call the first member of each pair asking the child to supply the other pair thus:

Dog and what? Aja ati kini?

Then read the list again this time from No. 5 - 1. The child is tested from 1 - 5 again, and the list is

presented a third time as before from No. 1 - 5. The child's responses are recorded in the space provided in the record sheet.

List 1. Dog and cat
Aja at Ologbo

2. Wood and stone
Igi ati Okuta

3. Moon and child
Osupa ati Omo

4. Forest and Air
Igbo ati Afefe

5. Name and Independence
Oruko ati Ominira

C. Conceptualisation

1. In what way is a cultlass like a knife?
Ni ona wo ni ada ati obe fi jo ara won?

2. In what way are the moon and the star alike?
Ni ona wo ni osupa ati irawo fi jo ara won?

3. In what way are an orange and a banana alike?
Ogede ati orombo jo nkan kanna. Kini won?

4. Which is the odd one out, Sam, John, Boy, Peter.
Ewo ni ko ba awon t'oku mu ninu awon oro wonyi? Ajayi, Ojo, Omode, Belo?

5. In what way are a boy and a girl alike?
Omobinrin ati omokunrin jo nkan kanna, kini won?

D. Problem - Solving

1. Jumoke who is a girl is very wise; is Abimbola who is a girl very wise?

Jumoke je omo'binrin t'o gbon lopolopo,nje Abimbola ti oun na Je omo'binrin ni lati gbon lopolopo?

2. A two year old child thought he broke his leg; who does he go to?

Ti omo odun meji ba ro'pe oun fi ese da, tani yio koko lo ba?

3. If in the forest you see a huge mad dog coming your way, what would you do?

Ti oba wa ninu igbo nla, ti osi ri aja nla ti o ya were ti o mbo ni odo re, kini o se?

4. Two children want to share 10 eggs equally, how many will each receive?

Ti awon omo meji ba pin eyin mewa logbogba, eyin melo ni yio kan enikokan?

5. If everybody you met in a new village, so far is a negro, the next person you are likely to meet will be: European, Lebanese, negro, old man, young child.

Ti o ba lo si abule tuntun kan, ti gbogbo awon enia ti o ti npade nibe je enia dudu, ti o ba tunbo rin si 'waju die si ninu abule kan na, oyinbo ni o ma pade, tabi kora, tabi enia dudu, tabi arugbo, tabi omode?

Give the questions as stated. Speech should be reduced to the minimum.

SENSORY - MOTOR SCALE

A. Perceptual

1. Which is the longest line?
   Ila wo lo gun ju ninu awon ila wonyi?
2. Four of these are alike; which is different?
   Merin ninu awon wonyi ba nkankan na lo, ewo lo yato si won?
3. Arrange the following in some order in a straight line.
   To awon wonyi ni esese ni ila gboro kan.
4. Three of these are alike in some way, which is different?
   Meta ninu awon wonyi ba nkankan na lo, ewo l'o yato si won?
5. Four of these are alike in some way, which one is different?
   Merin ninu awon wonyi jo ra won, ewo l'o yato?

B. Learning

a. Watch carefully what I am going to do.
   Wo kini ti mo fe se yi dada.

b. Direction

   Arrange the standard stimuli before the child in an horizontal position.

c. Put down slowly the paired stimuli in their respective positions.

d. Remove the paired stimuli, shovel them well and give them to the child saying "put them in their positions." "Fi won si aye won."

Record the numbers of paired stimuli in the record sheet.

Repeat Directions (c) and (d) three times.

Display:- 144 115 181 136 125 (Standard)

32 57 3 1 81 (Paired Associate).

C. Conceptualisation

Look at these pictures (display 1 - 5) where do these go? (a, and c.)

Wo awon aworan wonyi (display 1 - 5) nibo ni ki a fi awon eleyi si?

2. Look at these pictures (D.1., D.2) where do these go(a,b,c)

Wo awon aworan yi (D.1., D.2) nibo ni ki a fi awon eleyi si?

3. This block (block 1) is separate. Eyi wa loto,

" " (" 3) " " " " "

" " (" 8) " " " " "

Where do the rest go? Nibo ni ki a pin awon iyoku si?

4. Look at these pictures. (display a -d)

Where do these go? (2, 4, 8, 9.)

Wo awon wonyi, nibo ni ki a fi iwonyi si?

5. This (block 1) is separate. Eyi wa loto.

" (" 4) " " " " "

" (" 2) " " " " "

Where do the rest go?

Nibo ni ki a pin awon iyoku si?

D. Problem - Solving

1. Display 1 and 2 (touch hen, then A, etc.) and when child has learnt that A = hen, B = lady, C = tree, D = gun, E = Cat; Give him the two small cards (man; cow) and ask him to put them under the appropriate pictures on the 'display' card.

   To won si abe ibi to ba ye ki nwon wa. (Remove the two small cards before proceeding to item 2.)

2. Give him the two other small cards (dog's tail and bird's head) and ask him to put them likewise.

3. How many of these (cubes) will be this high: (height of cardboard).

   Iru eleyi melo ni a le to lori ara won ki o ga to eyi?

4. (place 2 painted elephants; 1 unpainted elephant, 2 cats, 2 blank cardboards in four separate piles in a row).

   a. Are the number of elephants smaller than the number of painted elephants?

      Nje iye erin ti a kun poju iye erin ti owa nibi lo?

   b. Are the number of animals smaller than the number of painted elephants?

      Nje iye erin ti a kun poju iye eranko ti o wa nibi lo?

5. a. Which of these (1 - 5) follows this (D 5a.)
   " " " " " " (D 5b.)

   b. Ewo ninu awon wonyi ni o tele eyi ?

Appendix I(b)

'World i.t.a.' Project

Key to Intelligence Test for young Children

VERBAL SCALE

A. Perceptual

1. Nose (Imu): 3 marks; indication only : 2 marks.
2. Arm (Apa): 3 marks; hand (Owo) or indication: 2 marks.
3. Shells (Ikarawun): 3 marks; description only: 2 marks.
4. Protection (Idabobo): 3 marks; or any statement indicating protection from bodily harm: 2 marks.
5. The sun (Orun): 3 marks; Light (Imole); 2 marks.

B. Learning

1 mark for each correct pair associate at each trial, i.e. 3 marks for an item got correct on all three trials; 2 marks on 2 trials, etc.

1. Ologbo. 2. Okuta. 3. Omo. 4. Afefe. 5. Ominira.

C. Conceptualisation

1. Function (e.g. they both cut): 3 marks
   Similarity of material (e.g. wood, iron): 1 mark
2. Out in space or heaven: 3 marks;
   round; or gives light: 2 marks.
3. Fruits (Eso): 3 marks; Eat them: 2 marks.
4. Omode (boy): 3 marks.
5. Omokekere (children) or Enia (human beings): 3 marks
   Both have certain parts of the body, e.g. nose, ears, feet, etc.: 1 mark.

D. Problem - Solving

1. No (Beko; Rara): 2 marks; Yes (Beni): 0
2. His mother or father: 3 marks; any other: 0
3. Climb a tree: 3 marks; hide: 2 marks; run: 1 mark
4. 5 each: 3 mark; any other 0
5. Negro (enia dudu): 3 marks.

SENSORY - Motor SCALE

A. Perceptual

1. Line f: 3 marks; any other: 0.
2. Picture 5: 3 marks; Picture 1 or 2; 2 marks.
3. Order: 6, 5, 2, 4, 7; or 7, 4, 2, 5, 6: 3 marks.
4. Card 5: 3 marks; any other: 0
5. Card : 3 marks; any other: 0.

B. Learning

1 mark for each correct pair-associate at each trial, i.e. 3 marks for an item got correct on all three trials; 2 marks for two trials, etc.

(1) 32; (2) 57; (3) 5; (4) 1; (5) 81

(144) (115) (181) (136) (81)

C. Conceptualisation

1. a = 4; c =2: 1 mark for each; i.e. 2 marks for both
2. a =D2; b =D2; C = D1:- (all correct: 3 marks, i.e. 1 mark each
3. Group 1 (1,2,4): Group 11 (3, 5, 6); Group III (9, 7, 8): 4 marks; Misplacemnt of any two blocks: 3 marks. (Note, the

numbers can be in any order within each group, e.g. Group 1 could be 4, 2, 1 etc.).

4. 2 = b; 4 =c; 8 =a; 9 = d: 3 marks; only 2 correct: 2 marks; 1 correct: 1 mark.

5. Group 1 (1, 3, 8); Group II (4, 6, 7), Group III (2, 5, 9), i.e. all correct: 4 marks. Misplacemant of only two blocks: 3 marks.

D. Problem - Solving

1. Man = B (Lady); Cow = E (Cat): 1 mark for each correct i.e. 2 marks for both correct.

2. Dog's tail = E (Cat); Bird's head = A (Hen) (both correct): 2 marks; One correct: 1 mark.

3. 6 cubes: 3 marks; 5 or 7 cubes: 2 marks

4 (a) = No: 1 mark; (b) No: 1 mark; i.e. 2 marks for both correct.

5. (a) = card 2; (b) = card 1; 2 marks for each correct

Appendix I(c)

'World i.t.a.' Project

Record sheet for Test of Intelligence

Name ..... Class .....

School ..... Tester .....

Father's occupation ..... Tribe .....

Mother's occupation .....

Date Tested ..... Boy/Girl .....

VERBAL SCALE

A. Perceptual

Please record child's response for each item. If child indicates or points to or describes, writes 'indicates', or 'points to', or 'describes' ..... (Whatever it is).

	SCORE
1.	.....
2.	.....
3.	.....
4.	.....
5.	.....
Total	.....

B. Learning

Record the child's response for each item at each trial:

	1st trial	2nd trial	3rd trial	SCORE
1.	.....	.....	.....	.....
2.	.....	.....	.....	.....

	1st trial	2nd trial	3rd Trial	SCORE
3.	.....	.....	.....	.....
4.	.....	.....	.....	.....
5.	.....	.....	.....	.....
			Total	.....

C. Conceptualization

Record child's response as briefly as possible.

	Response	SCORE
1.	.....	.....
2.	.....	.....
3.	.....	.....
4.	.....	.....
5.	.....	.....
	Total	.....

D. Problem - Solving

Record child's response:

	Response	SCORE
1.	(a) ..... (b)	.....
2.	(a) ..... (b)	.....
3.	.....	.....
4.	.....	.....
5.	.....	.....
	Total	.....

SENSORY - MOTOR SCALE

A. Perceptual	SCORE
1. Line No.	.....
2. Picture No.	.....
3. Order of arrangement	.....
4. Card No.	.....
5. Card No.	.....
Total	.....

B. Learning

Record the index number of cards paired with the standards at each trial.

1.	1st trial	2nd trial	3rd trial	SCORE
1. (114)	.....	.....	.....	.....
2. (115)	.....	.....	.....	.....
3. (181)	.....	.....	.....	.....
4. (136)	.....	.....	.....	.....
5. (125)	.....	.....	.....	.....
			Total	.....

C. Conceptualization	SCORE
1. Matches (a) with No. ....(b) with No. ...	.....
2. Matches (a) with No. ...(b) with No. .... (c) with No.	.....
3. Record index Numbers of blocks placed in Groups: 1..... II..... 111.....	.....

	SCORE
4. Matches picture 2 with .....; 4 with .....;	.....
8 with .....; 9 with .....;	.....
5. Record index Nos. of blocks placed in	
Groups: 1 .....; II.....; III .....;	.....
Total	.....

D. Problem - Solving

Record child's response:-	SCORE
1. Man = ...; Cow =.....	.....
2. Dog's tail ,.....; Bird's head ...	.....
3. ..... cubes.	.....
4. (a) ..... (b)	.....
5. Index No. of card chosen: a)..... b)....	.....
Total	.....

Appendix II A.

INSTITUTE OF EDUCATION

UNIVERSITY OF IBADAN

Number Test for Beginners (Infant I)

Administration of the Test

The Test is given orally and individually. Use the mother-tongue or the language which is the medium of instruction in class I in the school. Make sure that you have mastered the instructions, and that you can carry on the test with confidence before starting with the children.

Material:- You will need twenty small objects identical in shape, size and colour. Beans, beads, buttons or counters (also pennies, small blocks or cubes) are most suitable.

Test 1. Rote counting without objects.

(a) Let the pupil count by ones as far as he can. If necessary, count up to three, as example; i.e. eni, eji, eta, in Yoruba.

(b) Counting by tens to 100. If necessary, start the pupil by saying: ten, twenty, thirty, (not beyond thirty).

Test 2. Counting with enumeration.

Have the pupil count the objects you have provided, either by pointing with his finger or by moving each object aside as he says it, up to 20, if he can. Count three of the objects as example, if necessary. If the pupil becomes confused in his counting, the number after which this occurs is his score. If he counts all the twenty objects correctly, he scores 20.

Test 3. Number selection.

Using only ten of the objects used in test 2, say to the child, "Give me five ....." (naming the objects used). If the child gives you five, then ask him to give you the following numbers of objects in succession: 7, 4, 8, 10, 6. If he fails to give you five objects, ask him to give you these numbers in succession: 3, 1, 4, 2.

Test 4. Number identification.

Placing a certain number of objects before the pupil, say "How many pennies (or whatever objects are used) are there?" The first presentation will be of 5 objects. If the pupil answers correctly, then present, in turn, groups of 7, 4, 8, 10, and 6 objects. If he does not recognise five objects correctly, the series of presentations will then be 3, 1, 4, 2.

Test 5. Fundamental combination in problems.

This test may well be presented as a game of 'Finding How Many You Have.' After the game idea has been established, read each problem slowly and record the child's answer. A problem may be read more than once if necessary for its comprehension.

(i) If you have 5 pencils and get 1 more, how many pencils will you have then?

then ask for the following combinations in the same manner:-

(ii) 7 plantains and 1 plantain more

(iii) 1 marble and 9 more marbles

(iv) 4 jugs and 4 more jugs

(v) 1 book and 6 books more

(vi) 5 oranges and 2 oranges more

(vii) 8 pennies and 2 pennies more

(viii) 4 stones and 5 more stones

(ix) 5 yams and 3 yams more

(x) 3 balls and 5 balls more.

Test 6. Fundamental combinations with Objects.

Use 10 small objects - beads, buttons or beans - which are alike in size, colour or shape. The first combination in this test is 2 + 2. Show 2 beans to the pupil and ask, 'How many beans have I here?' After the pupil has answered (correctly or incorrectly), cover the 2 beans and then show 2 more, asking the same question as before. Concealing the second group along with the first, ask, 'How many are 2 beans and 2 beans?' If the pupil answers correctly, go on to the next combination; if he fails, remove the cover and say to him, "see, if you can tell me now how many 2 beans and 2 beans are?" Let the pupil work this out for himself if he can. He may be allowed to touch the beans, count them, or rearrange them if he chooses.

Tick (with ✓) the bracket under 'invisible' if the child gets an item correct when invisible; but if he gets it correct only when visible, put the tick under visible. (if the 'invisible' answer was correct, the 'visible' is not called for).

Present the following combinations in a similar fashion:

1. 2 plus 2
2. 8 plus 1
3. 6 plus 1
4. 1 plus 7
5. 3 plus 1
6. 2 plus 4
7. 2 plus 8
8. 2 plus 6
9. 3 plus 7
10. 4 plus 6.

Professor A. Taylor
Director, Inst. of Education,
University of Ibadan.

29th December, 1965.

Appendix II (b)

Method of Scoring the Number Test

Test 1. (a) Divide number reached by 5 (i.e. $\frac{2x}{10}$).

(b) Subtract 20 and divide by 10 (i.e. $\frac{x - 20}{10}$).

Test 2. Divide number reached by 2 (i.e. $\frac{x}{2}$).

Test 3. A child who can select the first item, i.e. 5, scores 4; add 1 for every other item correctly selected. A child who fails on the first item, i.e. 5, will score 1 on each item correctly selected.

Test 4. As in Test 3 above.

Test 5. Answers:- (i) 6; (ii) 8; (iii) 10; (iv) 8; (v) 7; (vi) 7; (vii) 10; (viii) 9; (ix) 8; (x) 8.

Multiply number of items correctly solved by 3.

Test 6. Answers:- (i) 4; (ii) 9; (iii) 7; (iv) 8; (v) 4; (vi) 6; (vii) 10; (viii) 8; (ix) 10; (x) 10.

Multiply number of items correctly solved when 'invisible' by 3; but multiply by 2 those solved correctly only when 'visible'.

Add scores.

('World i.t.a.' Project)

Reading Test in Yoruba for Infants & Juniors

by

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Administration of the Test:

The test is administered individually. It is important that the room be adequately lit and the child put at his ease. All sources of distraction should be removed. A copy of the test sheet is placed before the child — sitting in front of and facing the examiner who also has a copy of the test sheet together with the scoring sheet. Then the examiner says to the child, "Try to read to me as many of these Yoruba words as you can. Remember, they are written in Yoruba. "(Nẹ o le ka awọn ọrọ wọnyi fun mi ni ede Yoruba— ede Yoruba ni a kọ wọn o, gẹgẹ bi:- owo, ọja, Ojo, ọmọde)".

The child should read line by line. If the child cannot pronounce any word in the first two lines, ask him to look at the whole list and pronounce any word/s he can recognise. Each ununderlined word when correctly pronounced, scores one mark. Let the child read on until you find he cannot read a single word correctly in any two consecutive lines (i.e. 8 words), then stop him. Avoid giving any sign of approval or disapproval for a right or wrong pronunciation. The tester should, however, endeavour to encourage a child who appears diffident or who hesitates to say anything.

Scoring:-

In recording the scores, write the number of ununderlined words a child has read correctly in each line.

I (40)

1. **Baba, Ade, Bade, Dada.** (4)
2. **Ọbẹ ba ọbọ ọba** (4)
3. **Ojo fẹ fọ ife** (4)
4. **A o fi ada ge igi** (4)
5. **Mo fẹ lọ si ile** (4)
6. **Iwọ le ka iwe bi?** (4)
7. **Dada fẹ fi igba bu omi tutu** (4)
8. **Agbo fọ agbe ẹmu** (4)
9. **Olu ati ọga rẹ** (4)
10. **Ajayi lọ je ẹkọ** (4)

II. (40)

11. Agegi nge igi giga gogoro (4)

12. Ẹlẹmu rọ ẹmu pupọ sinu agbe (4)

13. Ọmọ kekere nje ẹpa (4)

14. Emi ha mọ ọmọ iya rẹ bi? (4)

15. Mo ri ọmọde mẹta ni ẹba ile kan (4)

16. Bade sun ni ọdẹdẹ ni ana (4)

17. Awọn ọlọpa na gbọn pupọ (4)

18. Mura si iṣẹ rẹ ọrẹ mi (4)

19. Iwọ ko gbọdọ ṣe ọlẹ rara (4)

20. Maṣe gbagbe iwa rere (4)

III. (30)

21. Ranti pe ọti mimu ko dara (5)

22. Oluwa ni oluṣọ agutan gbogbo yin (5)

23. Ẹiye okun ati ẹiyẹ ọsa ọkan na ni nwọn (5)

24. Ṣugbọn Ọlọrun da enia ni ọkunrin ati obirin (5)

25. Ole kan fi igba gun igi ọpẹ ti o wa ninu ọgba loru ana o si ge ẹyin mejeji ti o wa lori ọpẹ na lọ. (10)

(Sentence No. 25 must be read with speed and accuracy)

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Appendix IV

('World i.t.a.' Project)

WORD READING TEST IN ENGLISH FOR INFANTS AND JUNIORS: PART I

(*T. O. Edition*)

by

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Administration of the Test

The test is administered individually. It is important that the room be adequately lit, and the child put at his ease. All sources of distraction should be removed. A copy of the test sheet is placed before the child—sitting in front of and facing the examiner who also has a copy of the test sheet together with the scoring sheet. Then the examiner says to the child, "Try to read to me as many of these English words as you can. Remember, they are written in English." (Nje o le ka awon oro wonyi fun mi ni ede oyinbo—ede oyinbo ni a fi ko won o, gege bi:- door, table, pen, chair).

The child should read line by line. If the child cannot pronounce any word in the first two lines, ask him to look at the whole list and pronounce any word(s) he can recognise. Each word correctly pronounced scores one mark. Let a child read on until you find he cannot read a single word correctly in any two consecutive lines (i.e. 10 words), then stop him. Avoid giving any sign of approval or disapproval for a right or a wrong pronunciation. The tester should, however, endeavour to encourage a child who appears diffident or who hesitates to say anything.

Scoring

In recording the scores, write the number of words a child has read correctly in each line.

1. go, so, no, it, is
2. man, sit, yes, dig, hat
3. dog, yam, put, not, in
4. pen, and, nib, are, up
5. hand, stand, on, net, hen
6. he has come to me
7. I am a good boy
8. put, this, that, here, there
9. she, with, the woman, push
10. big, baby, play, into, day
11. jump, over, cup, run, sun
12. do, look, at, book, foot
13. box, head, you, nose, hoe
14. father, mother, have, shoes, pencil
15. pull, lorry, home, house, penny
16. buy, bread, eggs, for us
17. Mary, Girl, Under, My, Table
18. John's Farm, Your, Little, Ball
19. Give Us One Two Buckets
20. Market, Beads, Door, Nail, Tree
21. Chair, Many, Carrying, Going, Home
22. Peter, Makes, Alice, Her, Bird
23. Who, Where, Water, Down, Driver
24. Goat, Chicken, Fun, Trader, Spoon

1. gœ , sœ , nœ, it , is
2. man, sit , yes, dig , hat
3. dog, yam, pɷt , not , in
4. pen, and , nib, ar , up
5. hand, stand , on , net , hen
6. hɛɛ has cum tɷ mɛɛ
7. ie am a gɷd bɷi.
8. pɷt , ʃhis , ʃhat , hɛɛr , ʃhær
9. ʃhɛɛ , with , the , wɷman , pɷʃh
10. big , bæby , plæ , intɷ , dæ
11. jump , œver , cup , run , sun
12. dɷ , lɷk, at , bɷk , fɷt
13. boks, hed , yɷ , nœs , hœ
14. father, mother, hav , ʃhɷs , pensil
15. pɷll , lorry , hœm , hous , penny
16. bie bred , eggs , for us.

17. mæry , girl , under , mie , tæbl
18. jon's farm , yɷr litl baull
19. giv us , wun , tɷ buckets
20. market , beedz , dor , næl , tree
21. dhær , meny , carryiŋ , gœiŋ , hœm
22. peeter , mæks , alis , her , bird
23. hɷ , whær , wauter , doun , driever
24. gœt , dhicken , fun , træder , spɷn

Appendix V

Oral English Test for Infants

Materials:- Two books, one blue and one red. One box or hand-bag or brief-case. A table or desk. Place the books on the table or desk, but leave the bag or box on the floor.

****

1. (Ask the child): Are you a boy or a girl? (He should answer: 'I am a .....' This may or may not be preceded by 'No, I'm not a .....')

2. Show me your nose; (in the same way, ask him to show you his): head, mouth, neck, and ears. (He should answer: 'This is my OR 'These are my .....' whichever is appropriate. If he merely touches, ask him in English or Yoruba to tell you. If he continues to touch only, record 'T' for him).

3. (a) How many hands have you? (He should answer 'I have two hands'.
   (b) How many heads have you? (I have one head).

4. Is your teacher here? (No, he is not here).

5. (Touching the two books on the table, ask): What are these? (He should answer: These or Those are books)

6. (Give him one book and say): Put this book on the floor. (While the book is still on the floor - that is, you should put it there yourself if he doesn't know - then ask): Where is the book now? (He should answer 'The book' or 'That book is on the floor now')

7. Give me the book. (If he doesn't know, indicate by signs what you want him to do, then, while he is giving you the book, ask): What are you doing? (He should answer: 'I am giving the book to you, or I'm giving you the book).

8. (Touching each book, ask): What colour is this book? (If he doesn't know, say): This book is red, but this book (that is, the other one) is (what)..... (he should say 'blue').

9. (Remove the blue book from the table and ask): 'Which book is on the table? (He should answer 'The blue book' with or without .....' is on the table').

10. (Give the red book to the child and say): Put this book in bag' or 'in the box'. (If he doesn't know, put it in the bag or box yourself, and ask): Where is the red book now? (He should answer: The red book is in the 'bag' or 'box').

At the bottom of the sheet indicate whether his pronunciation is V. Good or Fair or Poor.

Appendix VI

World i.t.a. Project

Arithmetic Test. Prim. II. Nov. 1966

Name: ..... Date .....

School ..... Class .....

Time; 1 hour

A. (2 marks each)

(1) 13 + 5 =

(2) 15 - 7 =

(3) 3 x 8 =

(4) 16 ÷ 4 =

B. (3 marks each)

(5) 18d = ...s .....d.

(6) 20in = ...ft .....in.

(7) Add 15 and 6 =

(8) Subtract 7 from 18 =

C. (5 marks each)

(9)

T	U
6	3
+ 2	8

(10)

T	U
8	1
- 2	7

(11)

	H	T	U
	1	3	8
+	2	0	3

(12)

	S	D
	5	6
-	3	3

(13)

	T	U
	3	2
x		3

(14) 3) 69

(15)

	T	U
	2	9
+	1	9
	1	4

(16)

	ft.	in.
	8	7
-	5	2

Appendix VII

World i.t.a. Project

Arithmetic Test: Primary and Infant I. November 1966

Name ..... Date .....

School ..... Class .....

Time: 1 hour

Fill in the answers to the following:-

A. (1) 1 + 1 =
(2) 3 + 2 = (2 marks each)
(3) 7 + 5 =
(4) 9 + 7 =
(5) 3 - 2 =
(6) 9 - 6 =
(7) 2d + 2d =

B. (8) 9d - 6d =
(9) 2 x 7 = (3 marks each)
(10) 3 x 3 =
(11) 16d = ...s .....d.

C. (12)

T	U
2	4
+ 1	5

(13)

T	U
4	6
+ 3	0

(4 marks each)

(14)

T	U
3	8
+2	7

(15)

T	U
5	3
- 2	0

(4 marks each)

(16)

T	U
8	9
- 3	5

(17)

T	U
4	6
- 2	9

Appendix VIII English Reading. Primary II.

N. N. E. Book I.

First two lines of Page 6

First line of Pages 7, 8, 9, 10, 11, 12, 13, 14, 15.

Open book at pg. 6 and let pupil read the first and second lines, then the first line of the next and every page to page 15.

Scoring: Give one mark each for fluent reading of every line without mistakes and One mark for every underlined word pronounced correctly. Put a cross (X) for every mistake and take off one mark.

Oral English.

Put books on table and ask

1. What are these? (2 marks)
2. Then say, "Open page 14 of your book". (1 mark)

Look at the picture on page 14.

3. What is the girl doing? (2 marks)
4. Where is the bread? (2 marks)
5. Who is buying the bread? (2 marks)
6. What colour is Mary's dress? (2 marks)

Naming parts of the body.

Touch head, eyes, ears, arm, nose and fingers, one by one and ask what they are. (6 marks).

Then say, "Put your hands on your head" (1 mark)

"Shut your eyes." (1 mark)

TOTAL (50 marks)

Appendix IX

INSTITUTE OF EDUCATION
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World i.t.a. Project

English Reading Test Primary III - June, 1967

Reading passages: N.N.E. Book I, pg. 25 and Book II, pg. 4.

A. Tell pupil to open book I at pg. 25 and read.
Then ask the following questions:

1. How many children are in the picture?
2. Where are the children?
3. What is John holding?
4. Is John sitting down?
5. Who is sitting down?
6. What is the little girl doing?
7. What is the colour of Mary's dress?
8. Where do you live?
9. What did (your class) plant in your school farm?
10. Whose bag is this? (Use tester's bag).

Scoring.

Give ten marks for fluent reading of passage. Put a cross (X) for every word mispronounced. No mistake should be marked more than once throughout the passage. Give two marks for every full and correct answer to each of the questions above and one mark each for correct but shortened answers.

B. Second Passage: N.N.E. Book II, pg. 4

Tell pupil to open book at pg. 4 and read.

Scoring. Give 30 marks for fluent reading without mistakes. Take one mark off (only once throughout the passage) for any of the underlined words mispronounced. For poor readers who make an attempt, give one mark (thus ✓) for every word pronounced correctly but no word is to be scored more than once throughout the passage.

Appendix X

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Yoruba Reading. Primary II

Alawiye Book II, page 13. Book I, page 23.

Tell pupil to open Book II at page 13 and read; for those who cannot attempt or find Book II too difficult, change to Book I, page 23.

Questions on Book II, page 13.

1. Lara kini a ti nri ẹmu?
2. Kini ọkunrin na nfi gun ọpẹ?
3. Lara igi wo ni a ti nri oguro? (2 marks each)
4. Iru ẹmu wo lo ma ndun pupọ?
5. Kini nkan miran ti a tun le ri lara ọpẹ?

Scoring: Award 50 marks for fluent reading of the passage without mistakes. For a child who reads, but not fluently, count mistakes and subtract the number from 45. But if he only picks words, count the number of words (not underlined) which he reads correctly and record the number.

If the child cannot read the first two lines of page 13 of Book Two, give him Book One, page 23 to read. Either: count the number of words (not underlined) which he reads correctly and record; OR count the mistakes and subtract the number from 20.

Appendix XI

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Primary III: Yoruba Reading.

Alawiye Book III, pg. 22-23, par. 1, 2, 3, 4.

Tell pupil to open at page 22 and read. Stop at par. 4.

Questions.

1. Iru arun wo lo nyo ara ilu na lenu?
2. Daruko nkan meji ti awon ara ilu na se lati lati le sobiya lo.
3. Iru omi wo ni onise ijoba to sese de si ilu na nmu?
4. Bawo ni sobiya ngba de ara enia?
5. Eya ara wo ni sobiya tete nmu?

Scoring.

Give 50 marks for fluent reading without mistakes.

Put a cross for every word wrongly pronounced and at the end take a half mark off for every mistake.

Appendix XII

INSTITUTE OF EDUCATION
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ARITHMETIC TEST. PRIMARY II - JUNE 1967

1. 5 + 2 =

2. 8 + 0 + 1 =

3. 6 - 0 =

4. 7 - 4 =

5. 9 + 3 - 6 =

Nos 1-4 = 1 mark each

No. 5 = 2 marks

6. 30 = 20 + ☐

Nos 6-7 = 3 marks each

Nos 8-11= 6 marks each

7. ☐ + 10 = 50

8.

	T	U
		8
+	8	0

9.

	T	U
	2	4
+	1	8

10.

	T	U
	3	6
-	1	4

11.

	T	U
	4	0
-	1	7

12.
$$\begin{array}{r} 23 \\ \times\ 2 \\ \hline \\ \hline\hline \end{array}$$

13.
$$\begin{array}{rr} \text{s.} & \text{d.} \\ 1 & 5 \\ + & 8 \\ \hline \\ \hline\hline \end{array}$$

14.
$$\begin{array}{rr} \text{s.} & \text{d.} \\ 6 & 0 \\ +\ 5 & 7 \\ \hline \\ \hline\hline \end{array}$$

15.
$$\begin{array}{rr} \text{s.} & \text{d.} \\ 3 & 4 \\ -\ 1 & 8 \\ \hline \\ \hline\hline \end{array}$$

Nos. 12 - 15 = 6 marks each.

Name ..... Date .....

School ..... Class .....

Appendix XIII

INSTITUTE OF EDUCATION
UNIVERSITY OF IBADAN

World i.t.a. Project

ARITHMETIC TEST. PRIMARY III - JUNE 1967

1. Add 17 and 22 =

2. Subtract 25 from 45=

3.

	H	T	U
	4	3	2
+	1	0	8

4.

	H	T	U
	4	0	6
-	3	2	5

5.

163
x 5

6.

3) 78

7.

s.	d.
10.	0
- 3.	8

8.

yd.	ft.	ins.
1.	2.	7
+ 0.	2.	4

Nos. 1 to 2 = 2 marks each.

Nos. 3 to 8 = 5 marks each.

9.

	s.	d.
	2	1
x		4

10.

	ft.	ins.
	13	6
-	5	10

11.

	gall.	pts.
	1	6
	+0	7

12. Add:

	s.	d.
Pen =	3	11
Belt =	1	7
Rubber =	0	9

Nos. 9 - 12 = 8 marks each.

Name ..... Date .....

School ..... Class .....

DEPARTMENT OF EDUCATION
UNIVERSITY OF IBADAN

Appendix XIV (a)

World i.t.a. Project.

Dear Teacher,

Please complete the attached forms, supplying the information required on each child to the best of your knowledge. The following instructions should be observed in completing the forms:

Name: Surname first. Arrange names in the same order as in class register.

Sex: Use 'M' for 'Male' and 'F' for 'Female'.

Age: State years and months e.g. 6, 4 means six years, four months.

Progress: English Reading: State stage reached in the N.N.E. English Reader, e.g. II, 4 means Bk. II, pg. 4 and I.10 means Book I, page 10, and 0 means can't read at all.

Progress in Yoruba Reading: i.e. stage reached in 'Alawiye' readers - as for English.

Quality of Spoken English: use V.G. for Very Good, G. for Good, F for Fair, P for Poor, V.P. for Very Poor.

Quality of Work in Arithmetic: The same method as for Spoken English.

Attitude to English Reading: Use L.Vm for likes very much, L.Lt. for likes a little, D.Lt. for Dislikes a little, D.Vm for dislikes very much.

Attitude to School: Use the same method as for Attitude to English Reading.

General Comments: Use such comments as: very sickly; frequently absent; under age; timid; troublesome; confident; too playful; lacks home care, etc.

Please return the completed forms before 15th December, 1967 to the address below.

Mr. J. O. O. Abiri,
Department of Education,
University of Ibadan.

Appendix XIV (b)

INSTITUTE OF EDUCATION (i.t.a. Project)

UNIVERSITY OF IBADAN

Record of Progress

School ..... Class .....

Teacher ..... Date .....

NAME	Sex	Age	Progress in English Reading	Progress in Yoruba Reading	Quality of Spoken English	Quality of work in Arithmetic	Attitude to English Reading	Attitude to School	Supplementary books read, if any e.g. I.A. 2A	GENERAL COMMENTS

Appendix XV(a)

INSTITUTE OF EDUCATION, UNIVERSITY OF IBADAN

Administering the English Spelling Test (June 1968)

A. (Recognition):

Distribute the test papers and let pupils fill in their names, school and class. Tell them in English, and if necessary in Yoruba, that four words are printed in each row, and only one of these is spelt correctly. They have to draw a line under the one that is correctly spelt.

The correct word in the practice example is 'book', let them all underline it. Then go to exercises 1 - 10.

"In No. 1, "The word is 'baby', e.g. 'Alice is a little baby. Underline the word 'baby'".

In No. 2, the word is 'show', e.g. show me your pen. Underline 'show'.

In No. 3, the word is 'Take', e.g. Take this book to your teacher.

In No. 4, the word is 'fight', e.g. Children must not fight, etc.

In No. 5, the word is 'eight' e.g. I have eight books, etc.

In No. 6, the word is 'you' e.g. You are all good children, etc.

In No. 7, the word is 'horse' e.g. Ojo likes to ride a horse, etc.

In No. 8, the word is 'stick' e.g. The teacher has a stick, etc.

In No 9, the word is 'chalk' e.g. I have a piece of chalk, etc

In No 10, the word is 'name' e.g. My name is Ajayi, etc.

B. (Dictation):

Say, "write the following words". Then dictate slowly, saying each word or pair of words twice and giving the pupils time to write:
"My dress; Big Box; Your father; something; that church; four boys; little girl; nine books; school; window; coat; tomorrow; seventeen". Repeat Once, but more quickly.

Appendix XV (b)

ENGLISH SPELLING TEST (JUNE 1968)

Name ..... Class .....

School ..... Date .....

A (Recognition)

Draw a line (like this: white) under the word that is correctly spelt in each row.

Example:

bok buk book buku

Note: The correct spelling is 'book', so you must draw a line under 'book'.

Now do these:

1.	baby	biby	bebi	babby
2.	sho	schow	shoy	show
3.	Tek	Take	Tak	Taek
4.	fite	faght	fight	fhigt
5.	eight	ait	eihgt	ahte
6.	yuo	yue	you	deu
7.	hurs	horse	hurse	orse
8.	stik	stek	stike	stick
9.	shalk	shok	chalk	chouk
10.	nam	name	neme	neam

Write the words dictate here:

....

....

....

....

Appendix XVI

YORUBA READING TEST

Name ---------- Class --------

School ---------- Date ---------

A. Word Recognition.

Fa ila kekere kan si idi ọrọ ti o sọ oruko nkan ti a ya si apa ọtun yi.

Fun apere

Aje, Eja

Aja, Ẹja

'Aja' ni o wa ninu aworan yi, nitorina a ti fa ila kekere si ibi ti nwọn ko 'Aja' si.

Se awọn wọnyi naa bẹẹ

1. Ọdẹ, Okun

   Ọpa, Ọpẹ

2. Elede, Okere

   Kẹkẹ, Koko

3. Ete, Ewe
   Ẹwa, Ede

4. Alangba, Olodo
   Ologbo, Gbogbo

5. Pepele, Kẹlẹkẹlẹ.
   Pẹpẹiyẹ, Apẹiyẹ

B. Sentence Reading

Fi ami agbelebu (X) siwaju awọn ọrọ ti o sọ fun wa nkan ti o nṣẹlẹ ninu aworan ti o wa ni apa ọtun yi.

6. (a) Ọbọ yi nsare
   (b) Ọba yi nṣere
   (c) Ọbọ yi njẹun

7. (a) Ologbo Dada sun

(b) Ologbo Ojo npa eku

(c) Ologbo mi nje eja

8. (a) Okunrin yi ngun igi

(b) Omode yi wa lori igi

(c) Omode yi nwo ori igi

9. (a) Ni ojo kan, Ojo lo gba bolu pelu awon ore re.

(b) Ni ojo kan, Ojo lo si oja, o lo ra nkan

(c) Ojo feran ayo tita pupo

10. (a) Baba agbalagba yi yo opa si omo re

(b) Omobinrin yi feran ewure re

(c) Omobinrin yi fe fi opa na ewure

YORUBA READING TEST

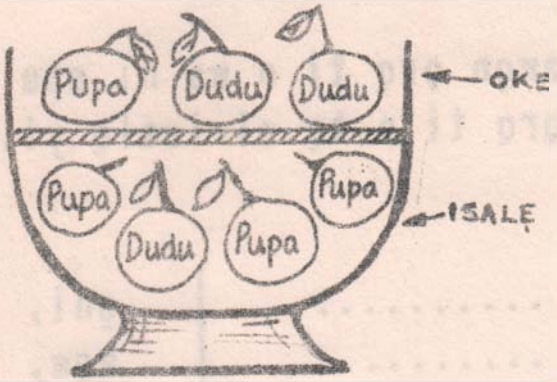
C. Sentence Completion

Kọ eyi ti o ba yẹ ninu awọn ọrọ ti o wa ni apa ọtun si ipari awọn gbolohun ọrọ ti a tẹ si isalẹ yi, ki nwọnfi le di kikun.

11. (a) Oju ẹni ma a la a ri	ẹni, iyọnu,
(b) Oju mẹwa ko jọ oju	aga, y'ẹni
(c) Oluwa nii wipe ki o	
12. Ọrẹ otitọ ko si, ọrẹ ..... loku,	ẹhin
Ẹniti a ni ki o fẹ ni loju fi.....sẹnu	odalẹ
Ẹniti a ni ki o kin ni li..... fi	ata
ẹgun sọwọ	ẹiyẹ
13. Ogongo ni baba gbogbo ..... ti mbẹ	ọmọde
ninu igbo, kinlun aritọgbaju si ni	ẹranko
ọba gbogbo awọn ..... ti mbẹ ni	ẹiyẹ
iju, sugbọn atari ajanaku kii ṣe	iwe
ẹru ..... rara	
14. Mo pade ọrẹ mi atata ..... mo nlọ	rogbodiyan
si ..... lnu mi dun pupọ lati gbọ	nigbati
wipe ..... ti o nyọ gbogbo araiye	Oshogbo
lẹnu ko de ..... ibẹ rara	agbẹgbẹ
	Ọlọrun

D. COMPREHENSION

15. Wo aworan yi daradara



Wo awọn Orombo ti ako sinu awo yii.
Awọn orombo diẹ dudu, awọn diẹ si pupa.

Kọ Beni tabi Beeko siwaju awọn gbolohun ọrọ wọnyi.

(a) Ko si orombo pupa ni isalẹ awo na rara .....
(b) Gbogbo orombo ti o wa ninu awo yi jẹ mẹrin .....
(c) Orombo ti o dudu pọ ju pupa lọ .....
(d) Awọn orombo ti o wa ni isalẹ pọ ju awọn ti o wa loke lọ .....
(e) Eyi ti o pupa ninu awọn orombo ti o wa ni isalẹ awo ko pọ to eyi ti o pupa ninu awọn ti o wa loke .....
(f) Bi Olu ba gba gbogbo orombo ti o wa ni isalẹ awo, ti Ṣola si gba gbogbo awọn ti o wa ni oke, orombo ti Ṣola ni yio pọ ju .....
(g) Mo fun Ojo ni awon orombo dudu ti o wa ni isalẹ ati pupa ti o wa ni oke, mo si fun Dada ni awọn orombo ti o ku; orombo ti Dada kere ju ti Ojo lọ .....

Appendix XVII (a)

Individual Reading (Pronunciation) Test

Instruction: Let the child read each sentence aloud. Indicate on the record sheet by putting a '1' under each of the four columns described as 'special sounds' if the child has pronounced each of the four underlined words correctly. But if he has pronounced any of the underlined words incorrectly, put an 'x' in the appropriate column. Then, in the column marked 'Rhythm' indicate by putting '1' if he has read the sentence with the correct rhythm and intonation, but an 'x' if he has not done so.

	Special Sounds				Rhythm	Total
	1	2	3	4		
1. Write your name if you are late						
2. Show me that black card						
3. Look at the hood on the sailor's neck						
4. Did the bird's tail touch the board?						
5. He is too short to shut the window						
6. Mother likes very thick cloth						
7. Do you often sit on the same seat in Church?						
8. Which boy always thought I was Mary?						
9. I think a tin is a thin thing						
10. Can blue shoes give much pleasure?						

(Note: Use separate record sheet provided. The scoring columns are shown here for illustration only).

 Appendix XVII (b)

Record Sheet

for

Individual Reading (Pronunciation) Test

School ..... Class .....

Tester ..... Date .....

No	Name of Pupil	m/f	Special Sounds				Rhythm	Total
			1	2	3	4		

 Appendix XVII (b)

Record Sheet

for

Individual Reading (Pronunciation) Test

School ..... Class .....

Tester ..... Date .....

No	Name of Pupil	m/f	Special Sounds				Rhythm	Total
			1	2	3	4		

12. We did not (saw, find, sold) the ball which the boy (came, inside, lost) yesterday

13. My father (went, arrive, want) to the shops yesterd. to buy some (money, clothes, baby)

14. I shall (buying, wash, long) my shirt (tomorrow, yesterday, last-week)

15. We hang our picture on the (wall, roof, floor) with a piece of (chalk, soap, string)

16. If I don't help mother, she will say, ('Thank you', 'you are la.' 'you are very kind')

JOOA/Remi
19/11/68.

Appendix XIX

INSTITUTE OF EDUCATION, UNIVERSITY OF IBADAN

Administering the English Spelling Test

A. (Recognition):

Distribute the test papers and let pupils fill in their names, school and class. Tell them in English, and if necessary in Yoruba, that four words are printed in each row, and only one of these is spelt correctly. They have to draw a line under the one that is correctly spelt.

The correct word in the practice example is 'book', let them all underline it. Then go to exercises 1 - 10. Give them sufficient time to finish each number before you go to the next numb .

No. 1, "The word is 'baby', e.g. 'Alice is a little baby.' Underline the word 'baby'."
No. 2, the word is 'show', e.g. show me your pen. Underline 'show'.
No. 3, the word is 'Take', e.g. Take this book to your teacher.
No. 4, the word is 'fight', e.g. Children must not fight, etc.
No. 5, the word is 'eight', e.g. I have eight books, etc.
No. 6, the word is 'you' e.g. You are all good children, etc.
No. 7, the word is 'horse' e.g. Ojo likes to ride a horse, etc.
No. 8, the word is 'stick' e.g. The teacher has a stick, etc.
No. 9, the word is 'chalk' e.g. I have a piece of chalk, etc.
No.10, the word is 'name' e.g. My name is Ajayi, etc.

B. Writing from Dictation.
Dictate the first 60 words of Schonell's Graded Word Spelling Test A. (s.1)

JOOA/Remi
21/11/68.

Appendix XX (a)

Institute of Education,
University of Ibadan,
Ibadan,
28th November, 1968.

.....
.....
.....
.....

Dear Sir/Madam,

W.I.T.A. Project

I wish to remind you that we shall come to test the children in the participating classes for the end of the year on the 9th, 10th and 11th December, 1968 i.e. Monday to Wednesday. The children will need pencils or Biro and paper. A separate room will also be needed for the individual testing of pupils in each class.

May I take this opportunity to thank you for your co-operation which has made the project a success, and I hope we can continue to count on your co-operation in the future.

I shall be very grateful if heads of schools, sectional heads, and teachers of participating classes (both I.T.A. and T.O.) will complete carefully and sincerely the enclosed format. Please express your sincere opinion. We shall collect the completed format when we come for testing on 9th - 11th December; so please complete it before then.

Yours faithfully,

J.O.O. Abiri

John O.O. Abiri
Director, W.I.T.A. Project.

Appendix XX (b)

REPORT ON THE W.I.T.A. PROJECT

Name .....

School .....

Post .....(H.M.; Sect. Head; Teacher of class)

Qualification ..... Date obtained .....

Did you teach a class participating in the W.I.T.A. Project? .....

If so, which class/es? ..... W.I.T.A. or T.O.? .....

Date during which you taught participating class/es .....

.....

INDICATE WHAT YOU THINK OF W.I.T.A. BY PUTTING A RING LIKE THIS (SA) round the response that represents your opinion. SA means I strongly agree; A means I Agree; U means I can't decide, i.e. Undecided; D means I Disagree; and SD means I strongly Disagree.

1. Children find it difficult to write W.I.T.A. symbols. SA A U D SD
2. W.I.T.A. helps children to read quickly ..... SA A U D SD
3. The dull ones need W.I,T.A. most ..... SA A U D SD
4. Children who used W.I.T.A. can spell very well in T.O. SA A U D SD
5. W.I.T.A. is not suitable for young children ..... SA A U D SD
6. Only bright children gain by using W.I.T.A. ..... SA A U D SD
7. I shall not use W.I.T.A. again ..... SA A U D SD
8. W.I.T.A. improves the children's pronunciation ..... SA A U D SD
9. W.I.T.A. makes the children backward in reading .... SA A U D SD

10. Children like reading W.I.T.A. ..... SA A U D SD
11. W.I.T.A. makes children afraid to read ..... SA A U D SD
12. Every child should learn to read through W.I.T.A. . SA A U D SD
13. The children could write W.I.T.A. easily ..... SA A U D SD
14. W.I.T.A. spoils children's spelling later ..... SA A U D SD
15. W.I.T.A. is better than T.O. ..... SA A U D SD
16. W,I.T.A. does not improve the children's pronunciation SA A U D SD
17. Children are confident when they read W.I.T.A. SA A U D SD
18. Children should use T.O., not W.I.T.A. ..... SA A U D SD
19. W.I.T.A. produces more backward readers ..... SA A U D SD
20. Children change easily from W.I.T.A. to T.O. ..... SA A U D SD
21. Children write their own ideas better in W.I.T.A. than in T.O. ..... SA A U D SD
22. W.I.T.A. spoils the children's handwriting ..... SA A U D SD
23. The new Nation English Course is good ..... SA A U D SD

Please, write here any other comments you have on the Project.

THANK YOU!!

JOOA/Remi
28/11/68.

Signature

Appendix XXI (a)

Method used in teaching reading

1. Teachers were requested to follow the pattern laid out in the Teachers' Notes for their reading lessons. The main features of this pattern, especially for NNE Book One, are as follows:

(a) Using the words or sentences to be read orally in practical situations.

(b) Reading the key sentence or sentences written on the blackboard by the teacher.

(c) Turning to the appropriate page in the reading book and letting children describe what is happening in the picture which illustrates the lesson. The sentences required have usually been practised in (a) and (b).

(d) Reading the material on the page.

(e) Writing the constituent words on the blackboard and getting children to recognise and use them in sentences, with emphasis on the new word or words.

(f) Sometimes calling attention to a new letter or new letters with their sound/s in the word/s.

(g) A lesson in which pupils wrote the Key sentence/s learnt in the reading lesson followed later.

2. A sample of the instructions contained in the Teachers' Notes to Book One on the reading of one page in the pupils' book is shown as Appendix XXI(b), while supplementary instructions to w.i.t.a. teachers on the new sounds/symbols to be emphasized on each page of Book One are shown as Appendix XXII.

Appendix XXI (b)

216 READING (Book One page 12)

New word **me**

Introduction

Write on the blackboard

me

Come to me
Run to me

Call a child to you by saying to him, *Come to me, Tom.* Repeat this with several children; then point to the first line on the blackboard and read it as you point to the words. Get several children to read it. Do the same with the second line. Then have individual and group reading of the lines. Give the class practice in identifying the word **me**, both by pointing to it when it is said and by saying it when it is pointed out.

Run to me, John.
Run to me.
Come to me, Mary.
Mary, come to me.
Run to me, John.
Mary, come to me.

11

Development

Get the children to describe what is happening in the picture and to tell you who is speaking. Dramatize the scene by having three children out in front of the class, one of them to read the piece and the other two to obey his instructions. Let the class read through this page in groups and as individuals. Try to get the children to read with a natural expression. Help those who find difficulty with the new word in the manner suggested for p.2.

Extension

Write on the blackboard

John	**me**	**home**	**Run**	**Come**
Mother	**Mary**	**to**	**Go**	**Father**

Get the children to identify the words and to make up sentences from them, e.g. *Go to Father, Mother. Come to me,* and so on.

217 WRITING

Sample of instructions to teachers on the teaching of reading wit the NNE Book One, from Taylor, A., & Pattison, B. (1960). Teacher's Book to New Nation English Book One. London. Thomas Nelson & Sons. p. 19. Reproduced by kind permission of the authors.

Appendix XXII

INSTITUTE OF EDUCATION

UNIVERSITY OF IBADAN

Notes for Teachers on Book One of New Nation English

(w.i.t.a. edition)

Vocabulary:

In using Book One, emphasis must be placed on correct pronunciation and understanding of the words. For this purpose, new words and new symbols are introduced gradually. The teacher will find on the last page of the book a list of the new words introduced on each page. Such new words should be emphasized as each new page is read.

English sounds and i.t.a. symbols:

At the same time it is absolutely important that the correct sound represented by each new symbol introduced on each page be emphasized so that the children may get to know them step by step. Here follows a list of the new sounds and symbols taught on each page. Where a page is missed out it means no new sound has been taught there, but all sounds previously learnt must be revised.

Page 1 - m, æ , r, y (vowel).

Page 2 - c(pronounced 'k'), u, h, ee , eer .

Page 3 - i, s (as in is).

Page 4 -, n, oe , j, o, t,

Page 5 - sh

Page 7 - th s, er

Page 10 - l, w , k, f, a

Page 11 - g

Page 13 - ar, e.

Page 14 - b, ie , gg ' d.

Page 15 - a, or.

Page 19 - ir , tt (ttl).

Page 20 - w

Page 21 - v, ck.

Page 22 - rr

Page 23 - wh , er

Page 24 - u-(initial), as in Under.

JOA/SNA.

Page 25 - ou

Page 27 - m, p, ks.

Page 30 - y (consonant), as in yes.

Page 31 - oo

Page 32 - oor as in yoor

/2...

Page 35 - ll as in pɔll

Page 36 - au

Page 39 - ch , en as in chicken

Page 41 - ɔi

Page 44 - iŋ

The teacher should refer to this list every lesson and endeavour to teach the new sounds indicated for each page. These should also appear in the Notes of Lessons.

The teacher must also remember to stress the syllables printed in bold characters and destress those printed in smaller characters. The pupils themselves must be instructed to do so, as this is a very important aspect of the reading exercise.

The teacher could test the children's knowledge of the sounds already taught by using dictation exercises at appropriate stages.

For instance :

(a) When the children have learnt all the sounds up to page 4, they should be able to write the following words from dictation (i.e. in i.t.a.).

næm, cæm, hæms, heer, teer, jæn, roem, him, hit, heet, tæk, not, noet, mee, hee, kee, tee, eet, meet.

(b) When they have learnt the sounds up to page 7, add the following words:

thoes (those), thees (these), muther (mother)

shoe (show), see (see), shee (she), etc.

The teacher should add to this list as he progresses through Book One. Where there is difficulty in transliterating a new word into i.t.a., the teacher should refer to the "i.t.a. Wurd List".

J. O. Abiri.

JOA/SNA.

Appendix XXIII

Teachers' Manual

to Pitman's World i.t.a. Edition

of the New Nation English Readers

(Part I)

1. Introduction:

As the teacher is probably aware, full teachers' notes have been prepared for the New Nation Readers Course. This manual is for use in conjunction with those Notes. The instructions and suggestions in the teachers' notes, viz. (i) the Key to the New Nation Readers, and the Teachers' Books to (ii) The Pre-Reader, (iii) Book One (iv) Book Two, and (v) Book Three, respectively, are largely applicable to both the edition of the text-books printed in traditional orthography and the 'world i.t.a.' edition. Wherever any word, phrase or sentence has to be written for and/or by the pupils, the teacher should endeavour to transliterate such into 'world i.t.a.' It is therefore essential that the teacher be thoroughly familiar with the principles of world i.t.a. transliteration.

The booklet - 'Short Notes for Reference on i.t.a. Transliteration' provides useful guidance for arriving at i.t.a. equivalents of words. If, however, there is any doubt as to the i.t.a. equivalents of any words, the booklet - 'i.t.a. Wurd List' should be consulted. The teacher should read carefully through the 'Instruction Pack for i.t.a. Teachers' in order to become fairly conversant with the i.t.a. Should there be any doubt, questions could be directed to Mr. John Abiri of the i.t.a. Project at the Institute of Education, University of Ibadan.

It should be noted, however, that all the booklets mentioned above give only the ordinary i.t.a. versions of words and not the 'world i.t.a.' equivalents. 'World i.t.a. differs from ordinary i.t.a. mainly in that the former provides for the indication of syllabic stress and unstress. As it sometimes happens that the teacher wants to write for the pupils something which is not contained in their textbooks, it is essential for the teacher to have some good knowledge of the rules of 'world i.t.a.' regarding syllabification, that is, the manner of dividing words into syllables, and the methods of indicating stressed and unstressed syllables. These are set out in Sections 2, 3, and 4 below.

2. Syllabification[1]:

Syllabification in 'world i.t.a.' is determined primarily on the principle of 'consonant plus vowel'. Exceptions to this rule are as follows:-

(a) Words which stand as words on their own provided they are related in meaning to the root word; for example:

hill/ock Maid/en debt/or act/or

(1) See Figure 1.

This rule (a) takes precedence over all other rules - in order to facilitate word building.

(b) -ed (past tense of verbs ending in t and d, e.g. print/ed)
-er (as in words like driv/er, sing/er, work/er)
-es (plural endings in which the -es ending is sounded (-is), not just (-s) e.g. 'hous/es', but not 'gates'
's (possessive ending of words having a final 's' sound, e.g. horse's, class's, Alice's).
-ing (present participial ending, e.g. us/ing, feed/ing and go/ing.
-er (comparative ending, e.g. near/er, but not 'better' because 'bett' is not the root).
-est (superlative ending, e.g. quick/est)
-al (adjectival ending, e.g. ment/al, accident/al)
-ly (adverbial endings, e.g. principal/ly, actual/ly, mental/ly).

(c) Double consonants are to be split medially except where this would conflict with (a) above. For the purpose of this rule (c), 'ck' is regarded as a double consonant.

Fig. 1 Some Examples of Syllabification

boy, girl, bo/dy, fa/ther, fish, fish/er

act/or, quick/ly, present/ly, ac/cord/ing/ly

en/cou/rag/ing/ly, em/bo/di/ment, im/ple/ment/a/tion

3. Stressing:

'Stress' is that which distinguishes a syllable from the surrounding syllables by means of loudness or pitch or both. Pitch is the height of the voice. Stressed syllables are given prominence by pitch, when they are pronounced on a higher (sometimes, lower) pitch or with a sharp rise (sometimes, sharp fall) in pitch. They are given prominence by loudness when they are pronounced with greater force of breath that is with a stronger airstream.

The syllable which is given the greatest prominence in a word is said to carry primary stress, e.g. a'trocious, 'luxury, e'vacuate, and la'goon. In addition, a word may also have a secondarily stressed syllable which is given slightly less prominence than the primarily stressed one, but is yet more prominent than the unstressed syllables to achieve rhythm , e.g. ad,minis'tration, ,impossi'bility, ,parti'ality. It may be observed that, in most cases, primary stress is distinguished by pitch prominence, whilst secondary stress is distinguished by rhythmic prominence.

Broadly speaking, the following rules for ward-stress may be adhered to

(a) Some words which can be used either as verbs or nouns tend to have variable stress, e.g.

'present (noun or adjective), pre'sent (verb)
'escort (noun), es'court (verb)
'discuss (noun), dis'cuss (verb)
'survey (noun), sur'vey (verb)
'conflict (noun), con'flict (verb)
'supplement (noun), supple'ment (verb)
'compliment and 'complement (nouns), compli'ment and comple'ment (verbs).

Such words are stressed on the first syllable when used as nouns, but on the last syllable when used as verbs.

(b) Adjectives ending in '-able', if associated with an English verb, e.g. wash/able, likeable, adorable, etc. are stressed in the same way as the verb; except ir'revocable, 'admirable, 'comparable, and 'preferable.

(c) The prefixes, dis-, in-, il-, im-, and ir- are stressed before an unstressed syllable, but unstressed before a stressed syllable, e.g. dis'courage and ˌdisi'cline, in'accurate and ˌinsuf'ficient, il'licit and 'illustˌrate, im'possible and ˌimpossi'bility (or imˌpossi'bility), ir'relevant, and ˌirres'pective.

(d) The ending '-ee' has strong stress in nouns denoting persons, e.g. trus'tee, eˌvacu'ee, 'refu'gee, pay'ee, eˌxami'nee.

(e) The endings '-eer', '-oon', '-ette' and '-esque' are also stressed, e.g. ˌauctio'neer, volun'teer, bal'loon, la'goon, dra'goon, ga'zette, ˌciga'rette, and ˌpictu'resque.

(f) Syllables preceding the adjectival endings '-ic' and '-ical' are also primarily stressed. e.g. he'roic, his'torical, geo'graphical, tele'phonic, ener'getic; (note that the corresponding nouns to these words are stressed thus 'hero, 'history, ge'ography, 'telephone, 'energy). Exceptions to this rule (f) are 'Arabic, 'heretic, 'Catholic, 'politics, 'rhetoric, 'arsenic, 'lunatic, and á'rithmetic. The adjectives - he'retical, po'litical, rhe'torical, and ˌarith'metical, however, keep to the rule.

(g) Similarly, the stress falls on the syllable preceding the endings '-ity', '-itous, '-graphy' '-logy', '-meter'.
-cial and -tial (when they are pronounced /Shial/,
-cion and -tion (when they are pronounced /Shon/,
-ssion or -sion (when they are pronounced /Shon/ or /Zon/,
-cious and -tious (when they are pronounced /Shius/.

(h) Nouns and adjectives with the prefixes 'out-' and 'over-' are stressed on the first syllable, e.g. 'outbreak, 'outcast, 'outpatient, 'oversight, 'overcoat. But verbs with 'out-' and 'over-' are stressed on the syllable following these prefixes. e.g. out'bid, out'grow, over'look, over'rule. Where, however, 'over-' means 'too much', both the prefix and the root word are stressed, e.g. 'over'active, 'over'educate, 'over'dress.

.../4

(i) The verbs ending in '-ate' are stressed on the third syllable from the end, and the corresponding nouns in '-ator' keep the stress on the same syllable, e.g. 'illus,trate and 'illus,trator, 'operate and 'operator. But the verbs "de'bate" and "cre'ate" which have only two syllables are stressed on the last syllable.

(j) The nouns ending in '-ation' have their main stress on the penultimate syllable, that is, on the -a- sound, e.g. nomi'nation, ,illust'ration, ope'ration, ac,commo'dation.

When words are used in combination in phrases and sentences the stress pattern on individual words may be changed either to achieve contrast or for rhythm. For example, 'grandmother or 'grandfather may become grand'mother or grand'father for contrast; similarly 'headmaster or 'headmistress may become head'master or head'mistress, respectively.

In the following sentences and phrases, the stress patterns on certain words are varied to achieve rhythm:

he is a Chi'nese, (but) a 'Chinese 'lantern;
'this after'noon, (but) 'afternoon 'tea;
quite un'known, (but) an 'unknown 'traveller;
'royal Prin'cess, (but) 'princess 'royal.

Normally, sentence stress is determined by the importance attached to each word by the speaker. Primarily stressed syllables tend to occur at roughly regular intervals of time, the other syllables (if any) occupying the time between the stresses. For example:

'Why should a 'child of 'three go 'out in 'this 'weather?

The stressed words will be those which are most important for the sense, and these will tend to be *those that are grammatically important, such as nouns, verbs, adjectives and* adverbs. Usually, the relative pronouns (who, whom, which, that), as well as auxiliaries, prepositions and conjunctions are not stressed, e.g. a, the, shall, will, may, have, would, could, for, from, to, and as. 'Who', 'which' and 'whom' are however stressed when used as interrogative pronouns, and 'that' is stressed when it is demonstrative. When used in final positions, the auxiliaries, 'shall', 'will', 'could', 'would', 'may', and the prepositions (for, from, to, at) may be stressed, e.g. I 'would. What are you looking 'at? Where have you come 'from? etc.

Not every syllable that has word stress also has stress in the sentence. [illegible] words, stressed syllable and all, may be fairly unstressed in the sentence. Unstressed syllables either in isolated words or in sentences often have their vowel sounds reduced. In such cases, the sounds /e/, /ɛɛ/, and /æ/ become /i/[1], and the other vowel sounds become (ə)[2] which is the normal sound in the final syllables of scholar, mother, author, and glamour.

.../5

(1) according to i. t. a. notation

(2) according to the I. F. A. notation (not i.t.a. symbol)

But a syllable which is two syllables removed from the syllable with main stress tends to retain its full vowel sound, although it is unstressed, e.g. ('evribɔdi) and ('enibɔdi, but ('noubədi) and ('sʌmbədi)(1): the first vowel sound in 'body' being reduced to (ə) in the last two words because it is immediately next to the strongly stressed syllables.

Intonation is the variation of pitch (of voice) in the sentence, and it reflects the attitude of the speaker to what he says. Normal sentence intonation is built on word-stress, since it is usually the stressed syllable of a word that sets the tune for the next set of unstressed syllables, whether in the same word or in the following words. Intonation is not indicated in 'world i.t.a.' but the stress patterns indicated will give some guidance. Roughly, it may be said that statements are made in a falling tone whilst questions are asked on a rising tone.

4. Methods used for indicating Stressed and Unstressed Syllables in 'world i.t.a.:(2)

The rules for dividing words into syllables in world i.t.a. are as stated in Section 2 above). The following methods are used for indicating stressed and unstressed syllables:

(a) Syllables receiving primary stress are indicated by characters printed in large, thick type.

(b) Syllables receiving secondary stress are indicated by characters printed in as large type as those used for the primarily stressed syllables, but not so bold, that is, not so 'thick'.

(c) Unstressed syllables which make or contain the neutral sound ( ), as in the second syllable of 'father', are indicated by smaller characters printed on the same base-line as the larger characters. That is to say, the bottom of the smaller characters is level with the bottom of the larger characters.

(d) Unstressed syllables which make the sound (i), as in the final syllables of 'printed', 'market', 'friendly', and 'transit' are indicated by smaller type, as in (c) above, but the top of these characters is level with the top of the larger characters: that is, the characters are printed above the base-line. These include all unstressed syllables containing the sounds /æ/, /ɛ/, and /i/(3). All other unstressed syllables are treated as in (c) above.

---

(1) according to I.P.A. notation.

(2) See Part II of this Manual and the New Nation English Readers for examples of 'world i.t.a.' prints.

(3) According to i.t.a. notation.

Thus, theoretically, the word 'the' can be written in three different ways in 'world i.t.a.', thus:

(a) I sed the book, and not a ðə (stressed) book.
(b) the book is in the boks (unstressed with (ə) sound)
(c) put the egg in the eggcup (unstressed with (i) sound).

Appendix XXIV

INSTITUTE OF EDUCATION

UNIVERSITY OF IBADAN

Tests of Intelligence (1966)

Conversion Table (for obtaining standard scaled score equivalents of Raw Scores)

Class One (n = 850)

Standard scaled scores	V E R B A L				S E N S O R Y - M O T O R				Standard scaled scores
	Percept	Learning	Concept	Problem solving	Percept	Learning	Concept	Problem solving	
20	14 &+	-	12 & +	13 & +	-	-	-	13&+ *	20
19	13	-	11	12	15	-	-	12	19
18	12	-	10	11	14	-	15	-	18
17	11	15	9	10	13	-	14	11	17
16	10	14	-	9	12	15	13	10	16
15	9	13	8	-	11	14	12	9	15
14	8	12	7	8	10	13	11	-	14
13	7	11	6	7	9	11&12	10	8	13
12	6	9&10	5	6	8	10	9	7	12
11	-	8	-	5	7	9	8	6	11
10	5	7	4	-	6	8	7	-	10
9	4	6	3	4	5	6&7	6	5	9
8	3	5	2	3	4	5	5	4	8
7	2	4	1	2	3	4	4	3	7
6	1	2&3	-	1	2	3	3	-	6
5	-	1	-	-	1	1&2	2	2	5
4	-	-	-	-	-	-	1	1	4
3	-	-	-	-	-	-	-	-	3
2	-	-	-	-	-	-	-	-	2
1	-	-	-	-	-	-	-	-	1
0	0	0	0	0	0	0	0	0	0
	Raw Score Statistics:				Raw Score Statistics:				
	Mean [illegible]	Mean [illegible]	Mean [illegible]	Mean [illegible]	Mean [illegible]	Mean [illegible]	Mean [illegible]	Mean [illegible]	
	s.d. =2.87	s.d. =3.50	s.d. =2.42	s.d. =2.45	s.d. =2.94	s.d. =3.82	s.d. =2.90	s.d. =2.22	
	Converted to a standard of				Mean = 8.00; s.d. = 3.00				

* Score note obtainable on the Test.

JOA/SNA.
4/10/66

Appendix XXV

INSTITUTE OF EDUCATION

UNIVERSITY OF IBADAN

Tests of Intelligence (1966)

Conversion Table (for obtaining standard scaled score equivalents of Raw Scores).

Class Two (n = 162)

Standard Scaled Scores	V E R B A L				S E N S O R Y - M O T O R				Standard Scaled Scores.
	Percept	Learning	Concept	Problem solving	Percept	Learning	Concept	Problem solving	
20	-	-	15	-		-	-	15*	20
19	-	-	14	-		-	-	-	19
18	-	-	13	-	15	-	-	14*	18
17	-	-	12	15	-	-	-	13*	17
16	-	-	11	14	14	-	-	12	16
15	15	-	10	13	13	-	14&15	11	15
14	14	14&15	-	12	12	15	13	10	14
13	13	13	9	11	11	14	12	-	13
12	12	12	8	-	10	13	11	9	12
11	10&11	11	7	10	9	11&12	10	8	11
10	9	10	6	9	8	10	9	7	10
9	8	8&9	5	8	7	8&9	8	6	9
8	7	7	4	7	-	7	7	5	8
7	6	6	3	6	6	6	6	-	7
6	5	5	2	5	5	4&5	4&5	4	6
5	4	4	1	-	4	3	3	3	5
4	3	3	-	4	3	2	2	2	4
3	2	1&2	-	3	2	1	1	1	3
2	1	-	-	2	1	-	-	-	2
1	-	-	-	1	-	-	-	-	1
0	0	0	0	0	0	0	0	0	0
	Raw Score Statistics:				Raw Score Statistics:				
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	
	=7.20	=7.38	=3.96	=7.09	=6.18	=7.31	=6.79	=5.85	
	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	s.d.	
	=3.36	=3.63	=2.80	=2.60	=2.68	=4.18	=3.36	=2.54	
	Converted to a standard of				Mean = 8.00; s.d. = 3.00				

* Score not obtainable on the Test.

JOA/SNA.
4/10/66

Appendix XXVI

Attitudes to School, according to Teachers' Reports in December 1967

(i) GROUP A - Primary III (1967), Ibadan.

Group	D. Vm. & D.Lt.	L.Lt.	L.Vm.	Total
Experimental	7 (7.2)	20 (24.7)	50 (45.1)	77
Control	10 (9.8)	38 (33.3)	56 (60.9)	104
Total	17	58	106	181

chi-squared = 2.489 2d.f., N.S.

(ii) GROUP B - Primary II (1967), Ibadan

Group	D. Vm. & D.Lt.	L.Lt.	L.Vm.	Total
Experimental	11 (12.9)	23 (25.2)	78 (73.9)	112
Control	11 (9.1)	20 (17.8)	48 (52.1)	79
Total	22	43	126	191

chi-squared = 2.512 2d.f., N.S.

(iii) GROUP C - Infant II (1967), Lagos

Group	D.Vm.	D.Lt.	L.Lt.	L.Vm.	Total
Experimental	5 (5.9)	14 (13.4)	42 (43.5)	274 (272.2)	335
Control	6 (5.1)	11 (11.6)	39 (37.5)	233 (234.8)	289
Total	11	25	81	507	624

chi-squared = 0.468 3d.f., N.S.

Note: In these Tables

The expected frequencies are shown in parentheses above the obtained frequencies in each cell.

D. Vm. = Dislikes school Very Much
D. Lt. = " " a Little
L. Lt. = Likes " a Little
L. Vm. = " " Very Much
N.S. = Difference not statistically significant

Appendix XXVII

Brief Notes on the Matched experimental and Control Classes

Group A (Prim. II '66, III '67, IV '68)

A (i) Matched classes Nos. 1 and 2: The experimental class (No. 1) was at Ebenezer Anglican School, Akingbile and the control class (No. 2) was at Islamic Mission School, Moniya. Both schools are situated in villages within a mile of each other near the Ibadan-Oyo Road, between six and seven miles from the University of Ibadan.

A (ii) Matched classes Nos. 3 and 4: The experimental class (No. 3) was at Hizbul Lahi Algalib Mission School, Ojo, while the control class (No. 4) was at St. Matthias Anglican School, Orogun. Both schools are situated in villages within a mile of each other near the Ibadan-Oyo Road between one and two miles from the University of Ibadan.

A (iii) Matched classes Nos. 5 and 6: The experimental class (No. 5) was at Methodist School, Ojo, while the control class (No. 6) was at St. Peter School, Apete. Both schools are situated in villages about five miles apart, and about 3 miles each from the University of Ibadan.

A (iv) Intelligence Test Scores of matched classes (Group A)

(a) As in June, 1968.

Experimental				Control				t for diff.
Class No.	Mean	s.d.	N	Class No.	Mean	s.d.	N	
1	58.35	7.05	17	2	56.65	6.04	20	0.759
3	54.25	9.96	24	4	53.85	6.67	20	0.156
5	51.47	7.22	17	6	49.00	6.10	18	1.056
ALL	54.64	8.83	58	ALL	52.82	8.97	58	1.090

(b) As in December, 1968

Experimental				Control				t. for diff.
Class No.	Mean	s.d.	N	Class No.	Mean	s.d.	N	
1	58.35	7.05	17	2	55.63	5.64	19	1.253
3	55.68	8.86	22	4	52.17	6.44	18	1.371
5	51.47	7.22	17	6	49.88	6.07	17	0.674
ALL	55.21	8.31	56	ALL	52.66	6.51	54	1.782

A (v) Unmatched class No. 7: This was a control class at St. Luke's Anglican School, Otun Agbakin, a village near the Ibadan-Oyo Road, about eight miles from the University of Ibadan.

The Intelligence Test Scores for this class are:

(a) In June 1968, Mean = 57.25, s.d. = 8.67, N = 12
(b) In December 1968, Mean = 57.36, s.d. = 7.88, N = 14

Group B (Prim. I '66, II '67, III '68)

B (i) Matched classes Nos. 8 and 9: The experimental class (No. 8) was at Hizbul Lahi Algalib Mission School, Ojo, while the control class (No. was at Methodist School, Ojo. Both schools are situated in village settings within a mile of each other, near the Ibadan-Oyo Road, betwe about two and three miles from the University of Ibadan.

B (ii) Matched classes Nos. 10 and 11: The experimental class (No. 10) was Islamic School, Moniya, and the control class (No. 11) was at Ebenezer Anglican School, Akingbile, both of which are situated in villages wi a mile of each other, between about six and seven miles from the University of Ibadan on the Ibadan-Oyo Road.

B (iii) Matched classes Nos. 12 and 13: The experimental class (No. 12) was St. Matthias Anglican School, Orogun, while the control class (No. 13 was at St. Luke's School, Otun Agbakin. Both are situated in village settings, near the Ibadan-Oyo Road, within about siven miles of each other.

B (iv) Intelligence Test Scores of matched Classes (Group B)

(a) As in June 1968

Experimental				Control				t for diff.
Class No.	Mean	s.d.	N	Class No.	Mean	s.d.	N	
8	55.80	10.56	30	9	54.67	11.13	18	0.338
10	55.26	6.79	23	11	53.22	7.76	27	0.962
12	50.35	9.07	20	13	48.47	8.25	17	0.642
ALL	54.55	9.52	73	ALL	52.34	9.24	62	1.356

(b) As in December 1968

Experimental				Control				t for diff.
Class No.	Mean	s.d.	N	Class No.	Mean	s.d.	N	
8	56.00	10.56	24	9	55.60	12.45	15	0.100
10	56.42	6.48	19	11	53.95	8.34	20	1.008
12	51.44	9.68	16	13	50.71	7.83	14	0.208
ALL	54.90	9.42	59	ALL	53.53	9.69	49	0.198

B (v) Unmatched class No. 14: This was an experimental class at St. Peter's Anglican School, Apete, a village about three miles from the University of Ibadan.

The Intelligence Test Scores for this class are:

(a) In June 1968, Mean = 55.00, s.d. = 10.56, N = 30
(b) In December 1968, Mean = 53.20, s.d. = 8.18, N = 20

Group C (Inf. I '66, II '67, Std. I '68)

C (i) Matched classes Nos. 22 and 23: Both the experimental class (No. 22) and the control class (No. 23) were at St. Jude's School, Ebute-Metta. This school has multi-stream classes, and the two classes involved occupied adjacent classrooms.

C (ii) Matched classes Nos. 24 and 25: The experimental class (No. 24) was at the Lagos City Council School, Ijero Street, Ebute-Metta, while the control class (No. 25) was at the United African Methodist Church School, Ebute-Metta. The schools are situated within two hundred yard of each other. They are both large schools with multi-stream classes, and they draw their pupils from the same population.

C (iii) Matched classes Nos. 26 and 27: Both the experimental class (No. 26) and the control class (No. 27) were at Lagos City Council School, Igbo Yaba. They were the only two streams of that class in the school.

C (iv) Matched classes Nos. 28 and 29: The experimental class (No. 28) was a Methodist School, Yaba, while the control class (No. 29) was at Ladi L Institute, Yaba. These schools are situated within four hundred yards of each other and they admit the same type of children.

C (v) Matched classes Nos. 30 and 31: The experimental class (No. 30) was a African Church School, Ebute-Metta, and the control class (No. 31) was at Salvation Army School, Ebute-Metta. The schools are situated withi two hundred yards of each other and they admit children from the same population.

C (vi) Matched classes Nos. 32 and 33: The experimental class (No. 32) was a All Saints School, Yaba, while the control class (No. 33) was at Seven Day Adventist Mission School, Abule-Oja, Yaba. The schools are situat within two miles of each other and take in the same type of children - including a good number of children of soldiers and policemen in each case.

C (vii) Intelligence Test Scores of matched classes (Group C)

(a) As in June 1968

Experimental				Control				t for diff.
Class No.	Mean	s.d.	N	Class No.	Mean	s.d.	N	
22	49.64	7.43	33	23	51.69	6.72	39	-1.199
24	44.70	9.82	30	25	44.71	6.73	28	-0.005
26	49.09	6.54	33	27	48.06	3.88	35	0.769
28	50.46	6.11	39	29	47.32	9.27	34	1.679
30	45.86	6.41	42	31	46.65	8.80	37	-0.444
32	47.70	4.83	23	33	48.00	7.37	30	0.523
ALL	47.95	7.50	200	ALL	47.89	8.11	203	0.078

Experimental				Control				t for diff.
Class No.	Mean	s.d.	N	Class No.	Mean	s.d.	N	
22	48.91	6.75	33	23	51.70	6.63	40	-1.755
24	44.55	9.69	31	25	44.70	6.78	28	-0.067
26	48.91	5.88	32	27	47.50	4.25	34	1.102
28	50.85	6.85	39	29	47.74	9.02	38	1.690
30	47.16	5.69	31	31	47.31	8.81	32	-0.079
32	47.37	4.97	24	33	48.25	8.94	32	-0.427
ALL	47.98	6.24	190	ALL	48.04	7.74	204	-0.085

C (viii) Unmatched class No. 34 was an experimental class at Reagan Memorial Baptist Girls' School, Yaba. There was no 'all Girls' control class with which to match this class.

C (ix) Unmatched class No. 35 was an experimental class at St. Patrick's Boys' School, Yaba. There was no 'all Boys' control class with which to match this class.

C (x) Unmatched class No. 36 was an experimental class at Our Lady of Apostles Girls' School, Yaba. There was no 'all Girls' control class with which to match this class.

C (xi) Unmatched class No. 37 was a control class at Ansar-Ud-Deen School, Osholanke Street, Ebute-Metta. There was no suitable one among the remaining experimental classes with which this class could be matched in terms of size and composition of class.

C (xii) Intelligence Test Scores for the unmatched classes in Group C.

Class No.	As in June 1968			As in December 1968		
	Mean	s.d.	N	Mean	s.d.	N
34	51.35	6.99	37	50.98	7.77	38
35	52.67	8.34	27	54.31	7.65	26
36	45.34	9.18	32	44.50	8.55	30
37	43.47	5.96	42	43.22	6.12	41

Appendix XXVIII

Correlations between English and Yoruba reading scores for experimental and control groups - June 1968

GROUP	Experimental		Control		$\bar{Z}$* for diff. between r's
	Pearson r	N	Pearson r	N	
A	.62	56	.53	58	0.737
B	.54	67	.58	58	-0.333
C	.71	201	.61	188	1.765

*By the formula:

$$\bar{Z} = \frac{Z_1 - Z_2}{\sqrt{\frac{1}{N_1 - 3} + \frac{1}{N_2 - 3}}}$$

Although in two out of three cases the coefficients of correlation show closer relationships between English and Yoruba reading scores for the experimental groups, in no case does the difference reach statistical significa at the 95% level of confidence.

Appendix XXIX

Teachers' Comments on the W.I.T.A. PROJECT December, 1968.

1. The use of w.i.t.a. in the primary schools is good especially for the beginners. The use of w.i.t.a. makes young children speak fluently with good pronunciation. It teaches young children to read with confidence. If the use of w.i.t.a. continues in primary schools in the Western State, our young school children will surely be equal with the children in U.S.A. especially in spoken English. In brief it worths using in schools.

Mr. S. O. OKEBUNMI (Class teacher, Ibadan.)

2. The illustrations or pictures in N.N.E. Books enable the pupils to understand what they read easily, I suggest that more exercises are included in the pupils' Books in the future edition. I also suggest that teachers who teach W.I.T.A. in Primary I follow their pupils to the next classes until they change from W.I.T.A. to T.O. The I.T.A. is a strange thing to many teachers, hence I suggest that teachers must have undergone courses in W.I.T.A. PROJECT before they are allowed to teach it in schools.

Mr. J. O. OBIMUYIWA (Headmaster and Class teacher, Ibadan)

3. It could have been a more successful project if the pupils are allowed to take the books home. Besides this it is a completely successful project.

Mr. J.O. DOSUMU (Class teacher, Ibadan)

4. The Project is a good project as it teaches good pronunciation and fluency in reading, but the children find it difficult to change from W.I.T.A. to T.O. I wish the organisers to improve this. After this, I recommend the book (New Nation English Course) to be used in all primary school classes.

Mr. E. A. OYEDOKUN (Headmaster, Ibadan)

5. The using of 'Key to New Nation English' and the pre-reader books make the children understand the sentences verbally first before they recognise the sentences in the N.N.E. reading book. W.I.T.A. makes my pupils read faster and more fluently than the other schools using T.O. books like N.O.E.C. I wish the project is extended to other schools and the government tries to see that the students in teacher training colleges are given the idea of teaching the English in w.i.t.a.

Mr. S. A. IDOWU (Class teacher, Ibadan)

6. All primary school teachers should be given opportunity to learn W.I.T.A. so that primaries I & II in all schools may hav the privilege to learn W.I.T.A. Because it helps the pupils in oral English, and reading.

Miss J. A. FALADE (Class teacher, Ibadan)

7. This W.I.T.A. is good and children gain from it but the test given them in English is above their knowledge. And most of the tests are not from their books.

Mrs. G. O. OGUNNOWO (Class teacher, Ibadan)

8. I strongly recommend for the W.I.T.A.'s continuation for the simple fact that it gives great help to the backward pupil in the class. Also gives room to brilliant pupils to go on their own.

Mrs. E. O. ADEWUYI (Class teacher, Ibadan)

9. W.I.T.A. helps the pupils to speak with confidence, for they pronounce the words with correct phonetics.

S. S. BANJO (Headmaster, Ibadan)

10. As W.I.T.A. Class teacher, and according to my personal observation since I have been participating in the teaching I recommend that it should continue for the following reasons: (i) it helps the children to read quickly. (ii) It improves the children's pronunciation. (iii) children always show interest when they read W.I.T.A. (iv) no difficulty when changing from W.I.T.A. to T.O.

Mr. J. A. ODUNAIYA (Class teacher, Ibadan)

11. The way the English test is set and conducted is above the knowledge of the pupils. The words have no bearing with their textbook - New Nation English.

J. O. AJAYI (Headmaster and Class teacher, Ibadan)

12. The project needs more hands for the course. It is a paralysis when the teacher for the class is absent. The project is helpful to the teaching of children in reading and pronunciation.

Mrs. J. F. LUKANI (Sectional head, Lagos)

13. With longer experience a W.I.T.A. teacher will handle the project better.

Mrs. E. M. OTUYALO (Class teacher, Lagos)

14. In my candid opinion, I declare that the project is a successful one because the W.I.T.A. symbols lessen children's problems in reading. I suggest that the refresher courses should be more frequent than before, i.e. to be taken once a term.

Mrs. V. W. ILORI (Class teacher, Lagos)

15. The project is laudable and could lead to better reading and pronunciation if the right type of teachers are employed to teach the children. What happens during the transition stage should be thoroughly investigated and necessary innovations made. The Nation English Course should be thoroughly graded. There is a sharp contrast between work in book II and that of book III. Book III appears too difficult.

Mr. S. A. B. ODUTAYO (Headmaster, Lagos)

16. In my own opinion I think that N.N.E. book II should be used in Standard I. Children are not to read book III in Standard I as the contents are rather difficult for them.

Mrs. M. A. OGUNFOWODU (Class teacher, Lagos)

17. With a few years experience with the W.I.T.A. class I strongly agree with the project because it is aid for children to understand easily and to recognise letters, reading both English and Yoruba and pronouncing words correctly and writing them. Children like the beginning of the project. It teaches oral speech. I advise more i.t.a. project in schools with qualified teachers trained for the project.

Mrs. K. I. MOORE (Class teacher, Lagos)

18. I like the W.I.T.A. because it helps children to learn to read quickly and it helps them in good pronunciation and it helps them to understand more English because they have interest in reading more and more English books everyday.

Mrs. V. B. LAWOYIN (Class teacher, Lagos)

19. The project so far has proved workable and comparison in the years ahead will place us in position to decide better on its advantages over the old method.

Mr. Z. B. OGUNSIJI (Headmaster, Lagos)

20. W.I.T.A. gives the children confidence in reading and improves their pronunciation. It gives them better understanding of English language and thus increases their knowledge of English words. But the fact that the children using i.t.a. seem to be backward in spelling needs much to be considered.

Mr. M. O. OLOFINJI (Class teacher, Lagos)

21. W.I.T.A. helps to improve children's pronunciation, it gives them better understanding of English and a good command of vocabulary but I am afraid it can weaken their knowledge of correct spellings of words.

Mrs. O. ERUOLA (Class teacher, Lagos)

22 In general W.I.T.A. would contribute more to spoken English in the country if it is introduced to all primary schools. It would also quicken the pupils' knowledge of English.

Mrs. F. O. OLOWU (Class teacher, Lagos)

23. The New Nation English Book is not adequate. There should be some sort of work books to give children practice on work done. Unless the readers are meant to teach reading and correct phonetic pronunciation alone, they need to deal with other aspects of the English language like (i) comprehension, (ii) grammar, etc; or the children's books might have revisional or comprehension questions and grammar exercises.

Mrs. E. J. DAWODU (Headmistress, Lagos)

24. The N.N.E. Course could have been good reading books if they are written lesson by lesson and if questions follow each lesson right from Book II. The idea of writing the new words at the end of the books is a good one. Children from English-speakin homes gain better from W.I.T.A. Changing from W.I.T.A. to T.O. could be done before the third year. The W.I.T.A. and T.O. teache should work hand in hand.

Mrs. B. A. KUJORE (Class teacher, Lagos)

25. In selecting classes for the project in any school - I suggest two classes at a time so as to promote competitive work. Refresher Courses are to be organised termly for teachers participating in the teaching of the project. More individual apparatus or wall charts to be provided.

Mr. J. A. KALEJAIYE (Headmaster, Lagos)

26. The teacher's effort in the class is really needed to make the W.I.T.A. Project a success. English speaking environment will also add to its success.

Mrs. F. B. ODUSOTE (Class teacher, Lagos)

27. The other Standard I classes we have in the school did better in General Writing English and Arithmetic tests that we gave them for the promotion or end-of-term examination. The children are better anyway in pronunciation.

Mrs. V. A. ODUTAYO (Sectional head, Lagos)

28. I feel children would do better if allowed to stay in the same class and not mixed. New children should also not be put in the same class with those participating in the project. Parents should be encouraged to provide books used in the class for their children to use at home after school.

Mrs. J. A. ADEWAKUN (Class teacher, Lagos)

29. The experiment could have been started with the infant two classes, i.e. at the age of seven years (with particular reference to Lagos schools where children begin school at six years) so that pupils could grasp new ideas easily. The text-books are all right but more exercises could have been provided especially with the W.I.T.A. book II. It is observed that the bright pupils are exceptionally bright and the dull ones are extremely dull perhaps the project has caused this.

Mrs. C. O. ADELAJA (Class teacher, Lagos)

30. It is discovered that the W.I.T.A. Project has enchanced quick reading and has also helped the children's phonetics and understanding. I am happy that my misconception of the project is unfounded.

Mrs. M. E. HARRISON (Headmistress, Lagos)

31. W.I.T.A., if well handled, will produce the desired effect in helping the children to improve their spellings as well as the correct pronunciation of words. This will in effect equip them for further work on English. The only problem I can think of is the conversion of W.I.T.A. symbols into the T.O. symbols and I think that regular in-service training for teachers of W.I.T.A. will help to improve the children's skills in this.

Mr. S. O. ADEOSUN (Headmaster, Lagos)

32. W.I.T.A. Project is good in that it gives a very good background to children and prepares their minds for future educational career. It helps children to get hold of any book and read extemporarily without encountering much difficulty in pronouncing any new words they come across. It develops quick mentality in children. I conscientiously make this comment through my observation within the short period of teaching this special class as could be noticed in this format.

Mr. M.O. OLORUNTOBA (Class teacher, Lagos)

33. The New Nation English Books I & II have no exercises but the ones in Book III is rather too advanced for the pupils who have not been practising such exercises in the former two books before.

Mrs. C. A. OGUNTOLU (Class teacher, Lagos)

34. All school teachers should be given the opportunity to learn W.I.T.A. through in-service training. W.I.T.A. may not be encouraged in Primary IV as it only helps a lot in oral English. Written English is poor in W.I.T.A. in higher classes.

Mrs. A.O.A. YUSUF (Class teacher, Ibadan)

35. W.I.T.A. is good for primaries one and two pupils but the reading book is lack of suitable exercises both written and oral otherwise it could have been very good.

Mrs. F.F. ADEYEMI (Class teacher, Ibadan)