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## Vocabulary development and biliteracy in Yorùbá and English among young bilinguals

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**Abstract:** In Nigeria and other countries in West Africa, English, French, and Portuguese languages are acquired or learned and used alongside the indigenous languages for various communication purposes as applicable. Previous studies have noted that Yorùbá language does not have an equal usage as being critical for bilingual mastery attainment as the English language. This study examines literacy development patterns among typically developing Yorùbá-English bilingual children to further our understanding of oral and literacy proficiency. Based on qualitative methods, cross-sectional data were obtained. Oral and literacy data were acquired by interview, specialized wordlist, written texts, and pictorial objects. Children were purposively selected for a stratified assessment as representative of their literacy levels (3 aged 2-3, 4 aged 4-6, and 5 aged 7-10). All participants were ages 2 to 10 years and lived in Ilorin metropolis. Data were subjected to descriptive analysis. Based on experiments, for instance, if the stimulus are words, the results showed that the word frequencies in the two languages do not enjoy the same value outcome, English >> Yorùbá. Significant outcomes showed that literacy in English language is on the positive end of the spectrum while literacy in Yorùbá language is on the opposite end. Most of the children paid more attention to English tasks, hence performed above average. Using the different age groups and educational levels as a continuum, it was generally observed that literacy depends largely on a child's cognitive alertness. The study concludes by linking the obvious gap in the initial observation to foundation lapses.

**Keywords:** Biliteracy, Literacy development, Language policy, Indigenous languages, Nigeria

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### 1. Introduction

Contact between two languages is typical in many countries in Africa. For instance, in Nigeria, it is assumed that many educated homes use at least one indigenous language and English language (mostly in towns and cities). In Nigeria, and other countries in West Africa, literacy in English, French and sometimes, Portuguese languages are often recognized and applauded. However, there is perceived literacy difficulties (that is reading and spelling problems) and gaps in the usage of the indigenous languages. For example, while promoting the recognition and usage of the Yorùbá language in formal settings, Awobuluyi and Oyelaran (2017: 62) opined that:

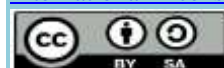
- (1) “A gbòdò sọ Yorùbá di èdè-ìṣẹ̀ ní gbogbo ile-ìṣẹ̀ aláàáńi, tí iṣẹ̀-ìbílẹ̀, àti tí iṣẹ̀-ìpínlẹ̀ láwùjọ àwà Yorùbá. Fún gbogbo ohun tí àwọn òṣìṣẹ̀ bá máa sọ tàbí tí wọn bá máa kọ síra wọn lẹnu ìṣẹ̀, Yorùbá ní kí gbogbo wọn máa lò. Bí a bá sì máa gbani síṣẹ̀, bí onítòhún tí mọ Yorùbá sọ tí ó sì mọ̀n-òṅ kọ tó gbòdò jẹ ara ohun tí a ní láti wò mọ̀n.”

#### Translation

We must make Yorùbá language a formal language in all private and public sectors in the Yorùbá land/community. For all forms of communication in speaking or writing during office hours, Yorùbá must be used. Fluency in Yorùbá speaking and writing must be one of the criteria for candidate selection during job recruitment.

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Language and literacy are central to the conduct and communication of science technology, engineering, and mathematics (Curry & Hanauer, 2014). United Nations Educational, Scientific and Cultural Organization, [UNESCO], 2014 defines literacy as the ‘ability to identify, understand, interpret, create, communicate, compute and use printed and written materials associated with varying contexts. Literacy involves a continuum of learning in enabling individuals to achieve their goals, to develop their knowledge and potential, and to participate fully in their community and wider society’ (UNESCO, 2004: 13). This paper aims to contribute towards this formal usage of the Yorùbá language by identifying the gap that exists in literacy at the early acquisition stage. It seeks to show that bilingual adults cannot suddenly become biliterate if they have missed the appropriate learning or developmental stages.

It is well known that children in Nigeria often grow up to become bilinguals, however, the biliteracy rate is not commensurate with the bilinguals. This study specifically assesses literacy acquisition in English and Yorùbá languages in a Yorùbá speaking community in order to show that bridging the gap in biliteracy among bilingual adults must include practices that start during the language acquisition stage. It further investigates the level of exposure to Yorùbá language in the society and the extent of access to the language in classrooms and formal programs/settings. To do these, it examines how twelve young children acquiring Yorùbá and English concomitantly handle developmental literacy difficulties, specifically those patterning to reading and writing in these languages. The emphasis of this paper is on reading and writing skills, and as noted by Wei et al (2014), while speaking is a naturally developing ability in all healthy children, reading (and writing) is a skill that requires explicit instruction, typically included in formal primary education. In what follows, we summarily discuss biliteracy and cognitive development (section 2) and present an overview of the structures of the two languages and language education policy in Nigeria for background knowledge (section 3). Section 4 contains the methodology and data analysis while the discussion of findings and conclusion are in section 5.

## **2. Biliteracy and cognitive development**

Bilingualism refers to the ability to use two languages in everyday life (Byers-Heinlein & Lew-Williams, 2013). In Ilorin for example, Yorùbá language is a predominant indigenous language spoken by both indigenes and residents at various fluency levels. In a situation such as this, it is expected that a large percentage of children would be bilinguals and a huge percentage of these children would be simultaneous or sequential bilinguals through enrollment in day-care and kindergarten where English language is the official language.

Literacy simply put means the ability to read and write. Bilingual literacy or biliteracy can be defined as “any and all instances in which communication occurs in two (or more) languages in or around writing” (Hornberger, 1990). Early scholars of biliteracy such as Goodman, Goodman and Flores (1979) defined biliteracy as mastery of reading and writing in two languages. A person who is biliterate is also considered bilingual but a person who is bilingual is not necessarily biliterate since the latter is often times limited to the ability to (fluently) speak two languages. Speech and writing are often very explicit markers of community membership and degree of expertise. According to Curry and Hanauer (2014:4), “If a person can produce a linguistic product that is highly valued by the community, it is assumed that she is a member with standing in that community”. This perspective undermines literacy in Yoruba because the ‘prestigious’ language has always been the English language. It explains why community-based literacy is considered for only English. According to Krashen (1997), bilingual learners do not always have access to reading and educational materials in both languages. In many instances, the school environment and learning resources available exclude the culture and language of the child’s home. Even though this was noted for immigrant children in Krashen (1997), the situation is similar for the participants of the present study despite that they are not immigrants but Yorùbá natives in indigenous Yorùbá land. This research typifies how English only literacy ingrains in children throughout their developmental stages.

Biliteracy is a complex phenomenon with cognitive, sociocultural, and sociological dimensions (Bauer & Gort, 2012). The discussion in this study is situated within the proposal of cognitive development (Piaget, 1970 and 1977; Wadsworth, 1971; Cherry, 2020). The cognitive development theory proposes that children go through four stages of cognitive development in order to understand the world around them. One major feature of this theory is that it adds to our understanding of children’s intellectual growth. Based on his theory of cognitive development and observations of his children Piaget viewed language as crucial for cognitive change. He viewed the child as an active organism constantly striving to make sense of experience. Schemes are specific psychological structures that change with age, and via adaptation, a process of building schemes through direct interaction with the environment, children develop. As they get older their schemes move from an action-based level to a mental level. Even though the theory has been proven to have some downsides in recent research such as in Flavell (1999) who claims that preschoolers have difficulty distinguishing appearance from reality because they have difficulty recalling the real image of an object when faced with a second contradictory representation, this study considers Piagetian stage concept has been critical for language development. According to Cherry (2020), the theory stresses that children are not merely passive recipients of knowledge. Rather, they constantly investigate and experiment as they build their understanding of how the world works. Piaget focused on children’s qualitative development and the development stages of their cognition. It is a theory on language development which emphasizes that children pass through four stages of mental development:

- **sensorimotor stage** (birth to 18-24 months, object permanence)
- **preoperational stage** (2-7 years, symbolic thought).

- **concrete operational stage** (7-11 years, operational thought).
- **formal operational stage** (adolescence to adulthood, characterized by abstract concepts).

In line with Piaget's claims, this paper explores children's cognitive development in the study of biliteracy in Yorùbá and English in stages. It uses children's expressions and vocabularies to investigate this. Vocabulary knowledge is keen. According to Pan (2012:100), words constitute the building blocks for language production and serve to index children's skills and understanding of the world. It informs theories of how children see and conceive the world. According to her, cognition and language experts need vocabulary understanding and production as key developmental indices. Assessing children's vocabulary development is also of interest to educational researchers who want to understand variability across children in rate of language development and how such variability relates to later academic achievement. In assessing vocabulary development, it is important to consider measuring either receptive vocabulary or expressive (productive) vocabulary or both. In this study, emphasis is on the productive vocabulary. Data were obtained from children aged 2 to 10 years old. It is possible to measure the vocabulary production from toddlers and above because at this age they begin to produce more meaningful words and utterances that show vocabulary size and growth rate.

### **3. Background of the study**

#### **3.1. Yorùbá and English**

Yoruba is a West Benue-Congo language spoken predominantly in south-western Nigeria. Even though there are about nine languages spoken in the Kwara state, Yorùbá is the most dominant indigenous language spoken in Ilorin, Kwara State, Nigeria (Kwasu language map, 2016) while English is the official language. Of all the languages in Kwara State, majority of Ilorin indigenes and/or residents speak and understand Yorùbá. As the language of the immediate environment, the Yorùbá language is taught as a subject in Ilorin and its environs in accordance with the National Policy on Education (subsection 3.2 below). Yoruba has many dialects, but the standard variety, which is the written form is recognized in education and used when speaking in the public domain (Adeniyi, 2017). Standard Yorùbá (SY) has eighteen consonant sounds, seven oral vowels and five underlying nasal vowels. There is a close match between the orthographic representation and the phonetic representation of these phonemes. Sounds such as [kp̄] written as 'p' (e.g., pupa 'red') and [d̄ʒ] written as 'j' (e.g., je 'eat') are some of the few exceptions.

Standard English (also referred to as Received Pronunciation, RP) language is an idealized English language variety that represents or serves as a model for formal training in Nigeria. It is the educated variety. It is encountered formally through education. A user of this variety is that kind of person whose manifestation of English language proficiency takes him away from his highly localized variety of English to a variety that is universally intelligible and acceptable irrespective of where the usage originates from (Aje, 2002; 2020). Also, there is another variety of the English language in Nigeria called the Nigerian English (NE). This variety according to Jowitt (1991) is the English spoken in Nigeria with a lot of inputs from Nigerian languages; hence the term "Nigerian English". Despite the peculiarities and adaptability of the NE, it is not the one contained in the school curriculum. This would imply that the minority elites (highly educated) make greater use of the RP, while the majority English language users (educated, less educated, uneducated) in Nigeria use the NE. Without shifting our focus on literacy, this study centers on the use of English language (RP and NE).

English and Yorùbá languages have some linguistic similarities and differences. For instance, the two languages are SVO languages in terms of the basic word order and both use the alphabetic writing. However, they have more areas of differences. While English language marks tenses with inflection morphemes on the verbs, Yorùbá language does not inflect the verbs, rather the context of occurrence or tone determines the intended interpretations. In brief comparison of their phonological systems, while English is a stress language, Yorùbá is a tone language with three level tones, High, Mid, and Low (Akinlabi & Adeniyi, 2017). They have many consonants in common, but there exist fewer similarities between their vowels. English makes use of pure vowels (12) and diphthongs (8) totaling 20 vowels. On the other hand, Yorùbá has 7 oral vowels and 5 nasal vowels (Olawe, 2021) for a detailed contrastive analysis of the Yorùbá and English vowels). Distribution of consonants is more restricted (phonotactic constraints) in Yorùbá than English. For instance, Yorùbá which is an open syllable language has simple syllable structures, consonant + vowel, CV (e.g., /rà/ 'buy'), vowel, V (e.g., /ó/ 'he/she'), and syllabic nasal, N (e.g., /n ò ri/ 'I didn't see him/her/it'). It does not permit consonant clusters within the same syllable. The only instances of consonant sequences involve homorganic syllabic nasals (which serve as peaks of their own syllables) followed by the onset consonants of following syllables (e.g., /ḍḍ t̄/ 'stamp'). English, a close syllable language, on the other hand has a wide variety of syllable types, with permissible consonant clusters at onset and coda positions. It allows up to three consonants to start or end a word, hence has about sixteen syllable structures such as V (e.g., oh), VC (e.g., add), VCC (e.g., ask), VCCC (e.g., asked), CV (e.g., me), CVC (e.g., nut), CVCC (e.g., lamp), CVCCC (e.g., lamps), CCV (e.g., blew), CCVC (e.g., flute), CCVCC (e.g., flutes), CCVCCC (e.g. crafts), CCCV (e.g., spray), CCCVC (e.g., split), CCCVCC (e.g., strange), and CCCVCCC (e.g., strengths). As for orthographic transparencies, English letters have more different pronunciations and sounds can be represented by various letter spellings compared to what is obtainable in Yorùbá sounds and pronunciations.

### **3.2. Language education policy in Nigeria**

Presently in Nigeria and specifically in Kwara State) there is no much emphasis on early literacy in indigenous Nigerian languages during the pre- and primary school age. In what follows, the situation of usage of Yoruba language and the policy on education that affects (indigenous) languages are highlighted. From as far back as 1977, the government of the Federal Republic of Nigeria has always considered the role of language in her education policies in the Nigerian Policy on Education (NPE). In a recent edition (NPE 6th edition) published in 2014, the language roles are also included. According to this policy, the education system is structured into the following stages:

- a) Early child care and development (aged 0- 4 years)
- b) Basic education (aged 5-15 years)
  - Pre-primary education for one year (aged 5)
  - Primary education for six years (aged 6-12)
  - Junior secondary education for three years
- c) Post basic education of three years in senior secondary school and technical colleges
- d) Tertiary education as provided in colleges of education, monotech, polytechnics, and universities

As contained in the NPE objectives, to effect a smooth transition from home to school, the philosophy of education is that the early child care stage will be conducted principally in the mother tongue or the language of immediate community. This is similar for to initial stage of the basic education stage, “every child shall be taught in the mother tongue or language of immediate community for the first four years of basic education. In addition, it is expected that every child shall learn one Nigerian language” (NPE 2014:4). According to the policy, the primary education is believed to inculcate permanent literacy, numeracy, and the ability to communicate effectively. In addition to other subjects to be taught there are language courses in the curriculum for this basic education level. In primary classes 1-3, English Studies and one Nigerian language are compulsory subjects and Arabic language is made optional. In primary classes 4-6, English Studies, one Nigerian language, and French are compulsory while Arabic is optional.

However, there are noticeable gray areas in the policy which tend to negatively impact the policy. For instance, the policy states that “...the medium of instruction in the primary shall be the language of immediate environment for the first three years in monolingual communities. During this period, English shall be taught as a subject” (NPE 2014:11-12). It goes further to state that from the fourth year, English shall progressively be used as a medium of instruction and the language of the immediate environment, French, and Arabic (optional) shall be taught as subjects. To actualize the policy for the literacy in the indigenous languages, it states that there will be development of orthographies for more Nigerian languages and production of textbooks, supplementary readers and instructional materials in Nigerian languages. To begin with, the production and supply of textbooks and other materials needed for teaching the indigenous languages sound truer in the policy than in real life. In addition, the indigenous languages at some point have about the same status in the policy as French and Arabic which are foreign languages. Furthermore, the exclusion of bilingual and multilingual communities (towns and cities) from a crucial part of the language use in primary schools has appear to be why literacy in indigenous languages are not emphasized in schools in these locations. The persistence of this policy shows that gap between literacy in these two languages in south-western Nigeria (and other parts of Nigeria) is largely rooted in the language education policy. The overall effect of the NPE is that Nigerians will go to any length to achieve literacy in English, however, as Banjo (1970:155) notes, more school graduates can read and write “fairly well” in English (but articulate it “very badly” (Jibril, 1982:234). There may be other reasons for this outcome, however this paper focuses on how the language acquisition stages play important roles in (bi)literacy development.

## **4. The study**

### **4.1. Objectives**

The general objective of this study is to show why bilingual Yorùbá-English adults will not suddenly become biliterate if they have missed the appropriate learning or developmental stages. This objective is focused on vocabulary usage and literacy performance of Yorùbá-English bilingual children in Ilorin using the cognitive developmental approach. The study aims to assess the performance of children in the early child care and basic education age and to compare their literacy performances in the two languages. This study considers that every acquisition stage has its language processing peculiarities and describes some education stages with an emphasis on their importance to biliteracy. As specified in NPE, children between the ages of 1-10 years old are expected to be enrolled in some form of schools/institutions, outside of their home. In these schools, they are to be taught in English language and an indigenous language at some point of their academic pursuits and at another point English becomes both a subject and the medium of communication while the indigenous language becomes solely a subject. Therefore, all the research participants had a minimum daily six-hour exposure to the English language irrespective of if the family is bilingual or not since all the participants were enrolled in formal schooling. (Basic information on the children and the participant requirements are given in 4.2.1).

Since bilingualism (and biliteracy) is not a static phenomenon but a dynamic process that undergoes changes (Marian, 2008), this study aims to show if (or why) children will eventually attain complete mastery of their native indigenous languages as adults. Or whether they will merely become fluent speakers and listeners in the indigenous languages and fluent readers and writers in the official language. To achieve this, consideration was

given to the categories of children affected by this policy accordingly and showed their literacy performances. The study was limited to enrolled bilingual children in early and basic education schools within the metropolis. Likewise, literary activities were based on their relevance to each age group/category. Specifically, then, this study considers the questions:

- What is the effect of the NPE language-related policy on biliteracy?
- What are the implications of the acquisition stages on biliteracy?
- How can these findings and implications inform language education planning and policy?

## 4.2. Method

### 4.2.1. Participants

In order to study the vocabulary and literacy development of Yorùbá and English bilingual children, the study conducted a cross-sectional study which initially began with a total of fifteen typically developing children. However, it was concluded with twelve children: after a second meeting with two participants (both aged 1 year old), the researcher decided to exclude them from the participants group. They almost didn't talk during those contacts despite being without any clinical reasons (we suppose this is typical for some children their age when in the midst of strangers or visitors). A participant in the 4-6 age group traveled back to her parents' home before the research was concluded. Data obtained from her were considered incomplete and therefore excluded. The study is therefore premised on the data obtained from twelve bilingual Yorùbá-English participants aged 2-10 years. They represent the target population of bilingual children growing in a Yorùbá speaking community who speak Yorùbá and English. The participants have an ongoing education such as being pupils of different kindergartens, nursery or primary schools. Siblings among the participants attended the same schools. All participants have siblings among the research population except for one, AY who even though was not an only child in his family happened to be the only child from his family who fitted the defined group. At the time of the investigation these children had been away from school for about six months due to the COVID-19 lockdown in 2020. So, there was no school activities in the form of going to school or attending virtual classes. Three of the participants had home lessons for about two months at some point during the lockdown. The constitution of the sample was determined by an accessible population bearing in mind the location and qualities of school enrolled in. Participants were divided into three groups based on two factors, age and level of education. As presented in Table 1 below, there are three groups of participants based on age and level of education. The first group comprised of three children aged 1-3 years old. This youngest group of participants were acquiring more Yorùbá when compared to English due to the type of care they required. The duration of time spent informally with adults at home and in the community was significantly higher than the time they spent in formal training at home or in school. These adults speak Yorùbá language more than English language at home and on the street. The next group of participants included four children aged 4-6 years old. Unlike the youngest group of children, they were in the pre-primary classes and showed more preference for English than Yorùbá. The oldest group of participants was comprised of five children aged 7-10 years.

**Table 1:** Participants summary

Age (years)	Class	Number of participants
2-3	Nursery	3
4-6	Primary 1-2	4
7-10	Primary 3-6	5

### 4.2.2. Data items

Vocabulary development could have two possible interpretations in a study like this: (i) mastering a list of difficult or unfamiliar words, a range of artistic, or stylistic forms, or, (ii) the body of words used in a particular language. In this study, it represents the second interpretation. Vocabulary knowledge represents the connection between children's language and cognitive development. The assessment of vocabulary skills then, is a mainstay of educational intervention. According to Pan (2012: 100), words constitute the building blocks for language production and serve to index children's skills and understanding of the world. Vocabulary understanding and production is key to developmental indices. In this study, the purpose of assessing children's vocabulary development is to understand variability across children in rate of language development and how such variability relates to later biliteracy achievement. In assessing vocabulary development, it is important to consider measuring either receptive vocabulary or expressive (productive) vocabulary or both. The research focused on the productive vocabulary. This is because from age 18 months and above, it is possible to measure the vocabulary production of children because at this age they begin to produce more meaningful words and utterances that show vocabulary size and growth rate. Admittedly as it has been noted in the literature, for bilingual children, assessment is much more complex than monolingual children. Nonetheless, we have in a parallel fashion assessed children's vocabulary in each language so that total vocabulary knowledge is neither over- nor underestimated for each language. Therefore, the data used to test for oral fluency, writing, and reading in this research comprised roughly equal distribution of words, sentences, and tasks in both languages by age group and level of education mainly extracted from recommended school textbooks.

### **4.2.3. Procedure**

For children exposed to more than one language, their vocabulary in each language should be assessed in parallel fashion so that total vocabulary knowledge is neither over/underestimated Pan (2012). This is the consideration that this study assumed in data collection procedure for children acquiring Yorùbá and English. While approaches for assessing children's vocabulary skills include parent report, spontaneous speech samples, research- designed assessment, etc., due to their peculiarities, this study adopted the research-designed assessment approach because it gives room for considerable regard for objectivity, reliability, and validity. One popular standardized measure of vocabulary test is the Peabody Picture Vocabulary Test. The present study did not use this or any other because overall they were considered as 'too English', advanced, and substantially unfamiliar to our participants in some respects. Instead, a specialized test for assessments considered useful for all participants who were acquiring more than one language was designed and used. One cannot, for example, assume that children will spontaneously produce particular words, even if they have partially or fully learned them. Thus, spontaneous speech sampling was of little utility. Similarly, one cannot count on adult reporters to accurately judge children's knowledge, even with extensive exposure to or interaction with the child. Overall, a specially designed vocabulary assessment for evaluating children's 'usages' of the words of both languages using similar tasks per participant group was used. And it also made use of three data collection instruments: interviews, questionnaires, and objective tests.

**Interview:** The information session was done via interviews with the participants in primary classes to gain insights to each participant's language background and interests (see A.1). They were required to orally respond to questions asked in the language used by the researcher. Verbal responses were recorded using Sony digital recorder and gestural communication (such as head movements, reluctance/hesitations, and excitements) were promptly noted or jotted down inside a notebook for each participant. Personal inventory was used for this. This measured the emotional, motivational, interpersonal, and attitudinal characteristics of each participant.

**Questionnaire:** Before the commencement of the fieldwork, parents were notified and briefed accordingly. They were given simple short questionnaires to fill (see A.2). Considering the ages of the children, the questions on the questionnaire were considered essential to the overall research in order to corroborate the results of the oral interview as well as the general language situation and experiences of the children.

**Objective test:** This assessment of standardized tests was conducted in participants' homes. It was divided into two, literacy and communication, tests with relevance to the participants' categorization. The first part focused on reading and writing tasks, while the other tested their vocabulary through speech. They were validated against measures of academic achievement, hence considered as tests of scholastic aptitude for each language.

Each language was assessed on different days and spoke the day's language on relevant days in order to minimize the effect of children's lapsing into their preferred language when testing their "weaker" one even though they might have required some intervention and instruction as they experienced noticeable reading and writing failure in one (Yorùbá) of the two languages. Assessment time varied depending on the tasks. Among the three groups of participants, the writing task had the longest duration for all children with an average of 20 minutes (English)-30 minutes (Yorùbá) for the primary 3-6 classes group. Time spent per exercise on the speaking tasks irrespective of the language had the shortest duration (an average of 4 minutes per task per individual) for all groups.

The writing test consisted of translating some 64/65 familiar lexical items on a specialized wordlist from one language into another; identifying and listing kinship terms from a picture, and; naming body parts as displayed on a printed paper. The test assessed speed, orthography/spelling, and vocabulary. The youngest group was excluded from this task while the number and types of words on the wordlist (35 words) of the intermediate group were slightly adjusted. For the reading test, the children were asked to read short comprehension passages from government approved textbooks as relevant to their groups. For each group, the entry class determines the choice of textbook, hence, all participants in the advance group read from primary 3 textbooks. For instance, passages read by such children comprised of 116 and 103 Yorùbá and English words respectively. Based on the objective, they also read out a specially designed 10 simple sentences. Overall, the reading task tested for oral fluency and motivation. The youngest group of children didn't participate in this task even though attempts were made to get them to read the alphabets of the languages. The speaking test employed the narrative technique. This was conducted because children's oral narratives offer a window into several domains of their learning and development (Reese et al. 2012). It is considered as an authentic mode of communication and as such children are inherently motivated to participate (Reese et al. 2012: 133). Narratives provide a natural setting for observing multiple levels of linguistic, cognitive, and social-cognitive development. The narrative quality of each language was assessed and compared in order to show children's literacy levels.

### **4.2.4. Data analysis**

The English and Yorùbá data were gathered using standardized vocabulary tests and narrative elicitation tasks. Narratives were coded for length measured in productivity and quality. the participants were assessed on story score (depth) and language score (correlation). The literacy level of bilingual children was based on the analysis of their performances in the two languages with a focus on reading and writing. Each child's performance was tested via short passage reading, specialized wordlist reading, picture naming task, etc., all of which were collected and recorded with an audio recorder, (by the researcher), and handwritten with paper and pencil by participants where applicable. Literacy in each language was determined by analyzing the child's performance per task and

compared to the expected result. For instance, if an English paragraph consists of 103 words in a reading task, then the child would be evaluated by how many words they pronounced correctly. This study compared children's performances in all the tasks in one language and compared same with their performances in similar tasks in the other language. The outcome of these results was analyzed to determine biliteracy attainment in terms of oral fluency, comprehension, writing, and reading. In the data, children's written forms and/or expressions are in bold italic typeface. The essence of this is make the identification of code more obvious.

## 5. Data presentation and discussions

### 5.1. Writing

Children were given some pictures and asked to write down the body parts, kinship terms, and color seen in those pictures in both languages at different times. This also included writing some listed lexical items and simple sentences. For this task, many of the participants performed better in writing English than writing in Yorùbá. Children aged 4-6 didn't know how to write in Yorùbá at all, not even the Yorùbá alphabet whereas they could write a few things in English. For instance, a participant who scored 10/10 in writing body parts in English scored 5/10 in Yorùbá. Another participant who scored 7/7 (with speed and confidence) in the kinship terms writing assessment in English scored 1/7 in Yorùbá despite spending more time on the Yorùbá task (with noticeable reluctance). The result for the color assessment wasn't completely the same because in Yorùbá, pupa 'red', dúdú 'black' and funfun 'white' are the 'straight-forward' colors although they were presented with all the same colors. Therefore, participants who scored 8/8 in English color writing task scored 1/3 in Yorùbá. Overall, only one participant, FD, performed almost at the same rate in writing using the two languages. The parent's questionnaire showed that in FD's house, Yorùbá is the only language of communication. Her parents did not have any degree or diplomas. 5.1.1 and 5.1.2 are details on the writing assessment and outcome.

#### 5.1.1. Writing in Yorùbá

Only the participants aged 7-10 years old participated in actual writing tasks (*The intermediate group, children aged 4-6 years old, were asked to write the alphabets of the two languages. While they all got A-Z in English, only one participant, SM, attempted to write A-Y in Yorùbá. The others simply declined and said it was a difficult task meant for older participants/classes. Compared to her performance in English alphabets, SM could not write all the alphabets of Yorùbá*). Out of the 64 English words that they were expected to translate to Yorùbá in writing, the outcome showed that only one of the five participants scored above 30 (scored 31 out of 64). The remaining participants in this group either left most words unwritten or wrote them incorrectly (see Table 2). 80% of the participants did not use the Yorùbá orthography diacritics at all, hence they were not evaluated for this in the long run. Some participants like AY attempted to write what they think the words would mean in Yorùbá (example 2). Most of errors are those of someone who didn't know the Yorùbá equivalents. Remarkably, the results of the sentence-long writing were more complicated than the word length writing test. For instance, none of the participants was able to correctly rewrite the English sentences in Yorùbá even. They all scored 0/10 in the Yorùbá to English sentential translation (example (3) below) even though some of them could translate some words of the sentences. Those that showed greater understanding of the sentences struggled more with the orthography while those who seemed to be able to write better in Yorùbá (this was attributed to their general writing ability) did not know the Yorùbá equivalents of most words in the sentences.

- (2) English words to Yorùbá writing 'errors' (AY)
- |                |                         |
|----------------|-------------------------|
| bribe          | * <i>owo...</i>         |
| school         | * <i>ibi ti an kawé</i> |
| kidnapper      | * <i>ole</i>            |
| television     | * <i>tv</i>             |
| left-hand      | * <i>owotun</i>         |
| covering cloth | * <i>asọ ode</i>        |

Table 2: English to Yorùbá word-length translation (writing)

Outcome (N = 64)	AS	AY	TK	YS	FD	
Correctly spelt		11	23	0	22	31
Incorrectly spelt	40	4	4	16	21	
Left blank	13	19	14	21	12	
% of correctly spelt	17	36	0	34	48	

Even though most of the words when translated to Yorùbá are either monosyllabic or disyllabic with only a few trisyllabic, participants took more time thinking about what to write in Yorùbá than actually writing. And when they are unable to write the words or sentences in Yorùbá, they didn't show any remorse. In fact, AY and YS severally admitted that they didn't want to write in Yorùbá or couldn't write in Yorùbá depending on their states of minds. While they didn't get the spellings of the words, these two participants acknowledged that Yorùbá uses tone marks but asked if they could be spared its usage. However, they wrote *é/è/* and *ò/ó/* correctly. Furthermore, where they didn't know the Yorùbá equivalents of the words in sentence translation, they used the default Yorùbá insertion

rule that breaks English consonant clusters and change final closed syllables to open syllables as in *round roundi* (see example (4)). TK had most of her words translated from English to Yorùbá with the default high vowels /u, i/ insertion to break consonant clusters. Hence, whatever the she was unable to translate from English to Yorùbá had this output pattern whether it is a loan word or not.

- (3) English sentence to Yorùbá writing  
 AS: the policeman caught the thief \**a wo olopa wo mu ole*  
 “awon ọlopa mu ole”  
 the earth is round \**aye owa roundi*  
 “róbótó ni ayé”  
 she burnt her finger \**o jeki owo ri jono*  
 “ó jó ika re”
- (4) Vowel insertion for unknown words (YS and AY)  
 police \**polisi*  
 dark \**darku*  
 catch \**catchi*  
 honest \**honesti*  
 slate \**silati*

The remaining participants who appeared to know the Yorùbá equivalents of the English words didn’t make any distinctions between *e/e* and *o/o* nor made reference to tones. They made the most attempt at writing in Yorùbá, however their errors are more marked than those of YS and AY (5 and 6).

- (5) love \**ife*  
 ko \**learn*  
 door \**lekun*
- (6) light \**emole*  
 television \**television*  
 left-hand \**owo ose*  
 covering cloth \**ebora*  
 compound \**enu oge*

### 5.1.2. Writing in English

The writing in English assessment showed some differences in the percentage accuracy for this age group as presented in Table (3). There is a considerable increase in the writing performance for all participants as well as shorter duration spent on the tasks. All participants wanted to write in English. They thought deeply about what to write and overall, they considered this an important aspect of the exercise. The outcome of this gives a more positive result.

Table 3: Yorùbá to English word-length translation (writing)

Outcome (N = 65)	AS	AY	TK	YS	FD
Correctly spelt	25	46	18	43	33
Incorrectly spelt	25	8	36	15	28
Left blank	15	11	10	7	24
% of correctly spelt	38	71	28	66	51

While none of the participants got jagunjagun ‘warrior’, ìjàpá ‘tortoise’, labalábá ‘butterfly’, and tòlótóló ‘turkey’, AY and YS who seemed to be able to correctly spell/write most words left those ones blank because they couldn’t read and translate them to their respective English equivalents. When asked in English to spell these words in English, they could. Whereas, the remaining participants who knew the meaning of these Yorùbá words and their English equivalents didn’t know how to write what they know. Example (7) are some of the words written by FD.

- (7) jagunjagun \**soja*  
 labalábá \**butfly*  
 fèrè \**turopet*  
 ìjàpá \**torteis*  
 tòlótóló \**tukey*

The results of the sentence writing task are not very different from those depicted in the lexical task. It also has better result compared to participants’ outcome in the Yorùbá writing task. Here, they all attempted to write the Yorùbá sentences in English. AY who performed best in the word-length English writing also excelled in this task with a total score of 8/10. He also used appropriate tenses. That is, he didn’t merely gloss the words, rather he translated and wrote as they should be in English standard sentences. Furthermore, data from him has words that better portray the events described in the sentences (9).

- (8) mo feran ere idaraya *I love healthy games*  
 ore mi ni aja kekere kan *my friend has a puppy*  
 kini oruko oluko re? *what is your teacher’s name?*

The result from the write tasks suggests, according to Piaget’s claim, that the development of a child occurs through a continuous transformation of thought processes. AY’s significant competence in the writing in English task relied solely on his ability and experience which tend to receive more expression using the English language. The outcome of AS,

TK, and FD showed that they process information in the Yorùbá language and therefore even if they were grouped with AY and YS on the basis of age and class, they were at varying stages and experiences of writing proficiency.

## 5.2. Reading

Participants from two groups (4-6 years old and 7-10 years old) partook in the reading task. However, they read different materials as considered appropriate for their respective groups using school level-based materials. The participants' respective performances in all reading tasks were similar for each language. That is, if a participant did well in passage reading, in terms of pronunciation and amount of time spent for Yorùbá, then same participant did well in the other reading tasks such as word-length and sentence-length reading. For instance, AY who scored 98% in the Yorùbá passage reading (Table 4) also had 90% reading correctness in word reading of the same language.

For the participants aged 4-6 years old, the outcome of their performances in Yorùbá and English show the following. First, there was some consideration right from the beginning of that data gathering. A special test was conducted for Yorùbá alphabet recitation compared to what was done for English. All the participants had an average of 96% reciting the English alphabets off-hand, but many of them initially declined to do so for the Yorùbá, hence the initial average was 28%. To make them more comfortable with Yorùbá, they were given a familiar Yorùbá school textbook to read the alphabets from it. This boosted their performance to a 60%, in its actual reading. Again, more than half of the participants were very reluctant to read from the Yorùbá wordlist and sentences (35 lexical items and 5 simple sentences respectively). For example, RO didn't read as he repeatedly said that he was just a 4-year-old and reading in Yorùbá should be what his older siblings should be asked to do. Meanwhile he didn't say this during the English similar tasks.

### 5.2.1. Reading in Yorùbá

The 116-word Yorùbá passage consists of a mix of 48 monosyllabic words, 49 disyllabic words, and 19 polysyllabic words for the 7-10 years group. The two groups were asked to read 10 simple sentences specially designed for each group. The following Tables show details and results of some of the reading tasks (AS erroneously omitted line 3 (14 words in total) of the passage. YS also skipped line 4 (24 words). These omissions had certainly impacted their respective results).

**Table 4:** Yorùbá passage reading (7-10 years old)

Outcome (N = 116)	AS	AY	TK	YS	FD
Correctly pronounced	73	114	12	69	71
% of correctly pronounced	63	98	10	59	60
Duration (mins: sec)	02:09	01:30	03:36	01:29	03:00

**Table 5:** Yorùbá passage (word breakdown)

Lexical items	AS	AY	TK	YS	FD	Total (N)	
monosyllables	29	48	7	33	28	48	
disyllables	33	48	3	29	27	49	
polysyllables	11	18	2	7	16	19	
n		73	114	12	69	71	116

The polysyllabic words didn't seem difficult for the participants compared to their respective performances on other word categories. Notably, AY who didn't understand most of what he read had the mostly reading fluency. He spent the least amount of time reading the passage. He and YS the two participants who were the least interested in Yorùbá tasks and 'novice' Yorùbá speakers in the group. The comparable overall performances of the participants in the remaining reading tasks didn't differ much in duration and fluency. For instance, for the sentence reading, the fastest reader, AY, spent a total of 00:46 reading the 10 sentences (with a distinct accent but more accurate segmental pronunciation) with an 89% score, and 90% in lexical item reading. TK, the slowest reader in the group spent a total duration of 01:47 with a 20% score on the sentence reading, a total duration of 03:36 on passage reading with a 10% accuracy. TK was the most outspoken of them all, particularly using Yorùbá. Yet, the few Yorùbá words that she was able to read were mostly the common monosyllabic words like 'ni, mi, fi, ti', and 'baba' was the only disyllable she read correctly.

Generally, children who used Yorùbá more often were not sure of most of the Yorùbá words they were to read. They made long pauses and didn't usually make second attempts to reread the sentences or correct themselves. Last, they read a three word per consonant at initial position Yorùbá consonant wordlist. AY and YS repeatedly pronounced 'p' as [p] using the English orthography instead of [kp]. Other participants didn't make that mistake. None of the participants correctly pronounced the 'gb' initial words gbenagbena 'carpenter', gbaguuda 'cassava', and gbòngbò 'root'.

### 5.2.2. Reading in English

**Table 6:** English passage reading (7-10 years old)

Outcome (N = 103)	AS	AY	TK	YS	FD
Correctly pronounced	95	103	61	102	73
% of correctly pronounced	93	100	60	99	72
Duration (mins: sec)	01:19	00:38	02:57	01:14	02:07

**Table 7:** English passage (word breakdown)

Lexical items	AS	AY	TK	YS	FD	Total (N)
Monosyllables	68	69	47	69	55	69
disyllables	13	16	8	15	10	16
polysyllables	14	18	6	17	8	18
n	95	103	61	101	73	103

It could be observed from Tables 6 and 7 above that all participants performed better than they did for similar reading task in Yorùbá. This difference in performance cuts across all the task conducted in English. Yet, not only did they know how to read in English, but they understood what they read. When asked if they understood the meaning of words such as ‘resided’, abortive, and consoled read from the passage, they confidently said yes and went ahead to try to explain them. This was notable because those words are not everyday words for children their age. However, Yorùbá words like orisirísi ‘various’, ààlò ‘story’, ìbílẹ̀ ‘native’, and ọmọ̀lúàbí ‘person with integrity’ were either too difficult to read by some or unfamiliar to those who could read them. Either way, their meanings were lost on the entire group.

All participants spent considerable lesser time reading in English no matter what they read. They made considerable efforts to correct themselves and seemed more confident reading in English. For instance, YS spent 00:22 reading the 10 sentences used for the assessment. This was noted as fast and fluent. Yet he spent about 01:00 reading the 10 Yorùbá sentences with noticeable delay, deliberate omissions, and pronunciation errors. TK also read the English sentences in considerably less amount of time (00:55) compared to how long it took her to read those in Yorùbá (01:47). Overall, they all made fewer mistakes reading in English and sounded more articulate.

### 5.3. Speaking

The speaking assessment was mainly to understand how language mastery attainment had fair for each participant in both languages. All the groups participated here. For the older groups, the tasks were narratives about their friends, best food, and movies they had watched. The youngest group were only cooperative if their mothers were the ‘interviewers’. So, it was more in the form of questions and answers (example 9). The experiment shows that they had an equal mix of Yorùbá and English in the few words that they uttered (when they did). For instance, they knew that *baba* was father, and vice versa. Likewise, we relied on their parents’ report that they understood the two languages equally because both were used at home.

As for the body parts identification, all 3 participants responded in English irrespective of the language used with them. However, they could identify the parts if they were told to do so in Yorùbá. That is, no child called head, “orí” but touched the head when asked to *fi ọ̀wọ̀ kan ori* “touch the head”. As for the alphabets’ recitations, all participants could recite 1/3 of the English alphabets, but none uttered a word when told to do same for Yorùbá. Broadly, they could respond to basic/everyday nouns in Yorùbá after saying them in English or by code-mixing, e.g., *This is bàtà* ‘this is a shoe’. They are at the preoperational stage where children begin to engage in symbolic play and learn to manipulate symbols. However, as Piaget noted they do not yet understand concrete logic.

- (9) (a) i. what is your name? **MO**  
 ii. kini oruko re? **MO**  
 (b) i. kini yi? **bata**  
 ii. what is this? **shoe**  
 (c) i. **mummy gba** ‘mummy take’  
 ii. **take**  
 (d) **tunmi** (funmi) ‘give me’  
 (e) **I no want** ‘I don’t want’  
 (f) oya wa “now come” (this was a command and two of the children responded promptly).

The narrative assessment of older children who speak Yorùbá primarily like AS showed fluency in Yorùbá with little code mixes/switches. When they used borrowing, they did so in line with the adult Yorùbá borrowing principle of e.g., insertion. For instance, AS said “*filmu*” ‘film’. When he was describing his friend’s hobby, he spoke as if he thought there was another word for ‘very’ rather than ‘púpò’. So instead of saying ‘Èniayò ìkejí, ó

nífẹẹ bọ̀fọ̀lù púpọ̀ ...’, he said ‘Èniayò ikejì, ó láìkì football púpọ̀, kí se púpọ̀ díẹ̀ ...’. This same participant was fluent in English however, he took several significant pauses. It is important to state that when AS described his friend’s hobby in English, he could not find a word to qualify the extent to which Eniayo liked football so he lengthened the vowel /ɒ/ in ‘a lot’ as in “\**he like playing football aloooot*”.

The descriptions of events of the children who spoke Yorùbá primarily using Yorùbá were coherent, fluid, and had more expressions with little or no grammatical errors. However, though their utterances were coherent in English, they were not as fluid nor without grammatical errors. They also had fewer things to say about the events they were describing.

Concerning performance development, the assessment of the older children showed that those who spoke Yorùbá primarily even though they didn’t have a processor that is deficient in structure, they lacked vocabulary and language-particular syntactic rules. Whereas the participants who spoke English primarily showed a writing pattern that guessed at what the words and sentences spoken around them mean within the bounds of what is permissible by principles of grammar and acquisition, and write in a fashion compatible with performance processing that positively transfers English to Yorùbá. Those who speak Yorùbá primarily wrote in random phonemic/word order. That is, the latter had more sequences of ‘unstructured’ segments and words (5.1.1 and 5.1.2).

Children who spoke English primarily had an increased performance in translating and writing Yorùbá sentences in English because at the concrete operational stage they have a language strategy (comprehension strategy) which processes language(s) grammar. Such focuses on the canonical order of the language(s). notably, English and Yorùbá are noun-verb-noun (actor-action-object) or SVO languages, and this plays a central role in processes of perception of utterances. Likewise, the other children who agreeably have same strategy didn’t have the same result because as noted by Slobin & Bever (1982 cf Goodluck, 1991:189), the strategy is not necessary to account for children’s performance. Even though they refer to this for speaking skills, the same is applicable to writing as found in this study.

## **6. Conclusion**

The question “Does literacy in the primary language stimulate second-language literacy?” by Rios and Castillon (2018), thus have the answers, yes, if the primary language is English. However, it is inconclusive if the primary language is Yorùbá because literacy in Yorùbá is notat par with literacy in English for the sampled population.

Concerns for biliteracy in the literature had focused on children from language minority backgrounds, however this study shows that children from language majority language background could face challenges in bilingual education also. Biliteracy in Yorùbá and English need more focus and support. For example, there is an enormous qualitative change in children’s linguistic exposure during the developmental period. There is an initial discontinuity between formal and informal learning. The children (toddlers) who were informally exposed to learning Yorùbá and English at home and environs gets to school to begin to formally learn only the English language.

This study focused on how bilingual children are a nexus to biliteracy in Yorùbá and English based on how they are developing linguistically in writing and reading. The aim of this research was to examine and exemplify ways in which the obtainable practices inhibit biliteracy. The assumption in this study was that by looking at the different ages and educational levels of the children with the carefully selected methods used for data collection, a much better sense of why and how the gap that exists between literacy in English and Yorùbá in adult bilingual speakers of these two languages can be ‘triggered’. The findings show that present day children will contribute to growing population of Nigerians who are literate only in English and not in their indigenous languages.

These ages and levels of education among others represent a number of adjacent development and time. The spectrum of those different categories highlights diversity and/or uniformity in the literacy backgrounds that have provided input to the study and its potential for engaging with and ultimately impacting on the wide range of the adults usage and practices. The children didn’t have a balanced biliteracy program in both languages, therefore as they progressed in the formal education the tendency to have a decline in Yorùbá literacy increases.

From the questionnaire, the adults’ responses about the home language situation shows that solid foundation for literacy does not equate to the background for oral competency/fluency. The result of the assessment indicates that the ability to put thoughts in writing using either language was more tedious for participants that had visibly greater oral mastery of Yorùbá while those who had visibly greater oral mastery of English had better writing outcome in both languages.

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## Appendix

### A.1 Participant's background information (also translated to Yorùbá)

1. What is your name?

2. How old are you?
3. What is the name of your school?
4. What is your best food?
5. What is the name of your best friend?
6. How many languages do you speak?
7. Which language do you speak more/most?
8. Which language do you like best?
9. What is your favorite TV channel?
10. In what language do you prefer to watch film?

**A. 2 Parent’s questionnaire**

Kindly answer the following questions as best as you can. The entire questionnaire is for research only. It also serves as evidence that you consented to the participation of your child/ward in our data elicitation.

1. How many languages do you speak?
2. What are the names of the languages that you speak?
3. How often/where do you speak these languages? (Please tick the relevant column on the following table)

Language name	home	work	street	Elsewhere (e.g. markets, worship centers)
1.				
2.				
3.				
4.				

4. Which language(s) do you speak with your child(ren)?
5. Which language(s) do you speak with your spouse/significant other?
6. Which language(s) do you speak with adults living in your house or those visiting your home?
7. What is your level of literacy? (Indicate with a mark on the table)
8. Would you like your child(ren) to be fluent in ..... language(s)?
9. Do you correct your children when they make errors speaking?
10. Do you start off speaking one language and end up in another language? And vice versa?
11. Do you try to explain a concept in one language by using terms in the other language(s) with your child(ren)?
12. When you try to correct your child(ren)’s wrongdoings (in anger) which language(s) do you often use?
13. When expressing happiness/gratitude with your child(ren), which language(s) do you use?
14. a. Do you watch English speaking movies in your house? How often?  
b. Are your child(ren) interested when you do?
15. a. Do you watch ..... speaking movies in your house? How often?  
b. Are your children interested when you do?
16. What language(s) do your kids use among themselves?
17. How often do they use the languages in (16) above?

Activity	language name	language name	language name
During play			
During study time			
During emotional cries			
During religious activities			

Others

18. Since the Covid-19 lockdown, has your child been involved in any educational activities?
19. Is Yorùbá one of the languages studied or used during this Covid-19 lockdown learning?
20. Does your child run errands for you within the community?
21. Rate your child's fluency in the language(s) they speak.
22. Has there been an increased usage of Yorùbá language since the lockdown by your child?

### B. Sample assessment

#### Yorùbá to English word translation (4-6)

obinrin	òkùnrin	gbé	tuntun	
bàtà		báàgì	omi	sè
àga		síbì	ìjà	èja
óúnjẹ		sanra	fò	sáré
bàbá		ìwé	ilé	kọ
Ọlórún		òrun	sunkún	ọkọ
ẹkùn		kọrin	abọ	ewé
pariwo		pàtẹwó	kọ	ajá
òbọ		àdúra	ení	ìta gbangba

#### English to Yorùbá Word translation (4-6)

girl	shoe	bag	spoon
book	boy	chair	food
fat	father	God	heaven
cry	sing	shout	clap
floor	plate	mother	water
new	jump	house	cook
cry	write	fish	carry
run	dog	car	leaf
monkey	people	smile	

#### Word translation (4-6)

mother	water	new	God	heaven
jump	house	cook	cry	sing
cry	write	fish	boy	far
carry	plate	run	shout	clap
dog	ear	leaf	floor	plate
chair	food	father	spoon	book
girl	shoe	bag		

#### Writing (4-6)

Write A - Z in English language

#### Writing (4-6)

Kọ A -Y ní èdè Yorùbá

#### Sentences (Yorùbá)

1. Mo ti dé
2. Fún mi ní ẹran jẹ
3. A fẹ sùn
4. Gba kọkọrọ ọkọ bàbá mi
5. Ilẹ wa tóbi gidigidi

#### Sentences (English)

1. I am a girl
2. Bring my shoe
3. I fell from the chair
4. Mummy, I am hungry
5. I want to go to grandma