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Developing Teachers' Capacity for Teaching Pupils' Initial Reading Skills: Research Report

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Abstract

The research stemmed from literature that revealed that most pupils in the public primary schools in Nigeria cannot read and write. Some researchers attributed this to poor foundation in teaching initial reading due to teachers' lack of skills in teaching initial reading and their use of ineffective methods. Based on this, the researchers

decided to build the capacity of 40 teachers of Primary 2 classes on the use of the multisensory approach in teaching initial reading which lasted for three weeks. Before the training commenced, a pre-test was administered on the pupils taught by these teachers and eight weeks after the treatment(training) a post-test was administered on the pupils to determine the effects of the treatment. The results of the pre-test and post-test were analysed using t-test and Analysis of Variance (ANOVA). The t-test results showed a significant difference between the pre- and post-test scores of the pupils and this difference was attributed to the treatment given to the teachers t- calculated value of 24.6 and t-value of 1.984 at 0.05 level of significance with degree of freedom 98. Also the t-test comparison of the mean scores of male and female pupils shows that male students performed better on IRMAT than their female counterpart t-calculated 10.80 at 0.05 level of significance and degree of freedom 98. In addition, when ANOVA was used the result shows that the treatment given to the teachers had a significant impact on the pupils, F-cal =426.29 and f- crit =6.90 ($F_{1, 98} = 6.90$, $P = 0.05$). Based on this result, some recommendations were made among which are, the need to retrain all teachers in the lower basic education level, on the use of the multisensory approach in teaching initial reading and the use of Jolly phonics technique in teaching initial reading.

Key words: Developing, Teachers' Capacity, Teaching, Initial Reading, Multisensory Approach

Introduction

English is a second language and the official language in Nigeria. It is estimated that Nigeria has more than 452 indigenous languages (Jowitt, 1995), many of which still do not have developed orthography. The National Policy on Education (FGN, 2013) stipulates that the language of instruction from the pre-primary through the first three years of primary education will be the mother tongue of the child or the language of the immediate community while English will be taught as a subject. From the fourth year in the primary school through the tertiary level, English remains the language of instruction and a core school subject. In the education system, therefore, English is not only a core school subject from pre-primary school through the tertiary level; it is also the language of instruction from the fourth year of primary education to the tertiary level. This makes it imperative that solid foundation in the four skills of English language must be laid. Supporting this, Omojuwa (2005) adds that functional literacy is not only crucial for educational achievement but critical for survival even when the child's academic endeavour terminates at the primary school level. In view of the importance of reading as a language skill and as a tool subject, enough teaching emphasis should be given to it to adequately equip pupils to learn to read and also to read to learn.

Being able to read is crucial to school achievement and lifelong learning since reading cuts across the school curriculum and is a life tool. There are two phases in the process of teaching reading and these are: teaching initial reading (letter sounds, blending etc.) and teaching reading to learn (comprehension, summary). The first stage which is teaching initial reading is crucial as this gives the child a head start in school. This is because it is at this stage that the pupil learns the letter sounds that are crucial in learning how to read. As a matter of fact, knowledge of the letters of the alphabet (letter names) does not facilitate initial reading; this is not important in reading. However, it is in writing that this knowledge is important. Since a child must learn and know how to read first before learning to write, it becomes imperative that letter sounds are taught first before letter names. It is also obvious that as a pupil learns the letter sounds, he/she gradually internalises the letter names and this makes it easy for him/her to gradually make the transition from learning to read, to learning to write effortlessly.

In the primary schools in Nigeria, many pupils have limited and impoverished knowledge of print and as a result they have difficulty in learning as they cannot read. These pupils have extreme difficulty catching up with their peers because of their poor initial reading skills and as they progress along the education ladder, learning becomes a struggle. Their problem becomes complex as they 'progress' from the lower basic through middle basic to the upper basic education level when more texts are read and most of these texts contain more complex sentence structures, coupled with the demand to also learn and read complex concepts taught in the different subjects in the curriculum using the English language medium. It is important to note here that these pupils are able to progress or move to the upper basic level because the system pushes them on even when they failed, not really that they earned it.

Supporting the fact that pupils who have poor knowledge of print cannot read, Good, Simmons and Smith (1998) add that after the third grade, the requirement of reading shifts from learning to read, to reading to learn, these students' trajectories of reading progress become even more stubbornly resistant to change. Their research revealed that children who are not competent and fluent readers by the end of Grade 3 are at serious risk, not only for reading problems, but also for dropping out of school. Little wonder the expectation that by the time pupils get to the fourth year of primary education, they would have developed some level of proficiency in English to use it as a medium for learning other school subjects is a mirage. This could also be the reason why many pupils graduate from public primary schools in Nigeria without being able to read and write effectively in any language in the curriculum (Udosen, 2010), contrary to one of the goals of primary education in Nigeria which is to inculcate permanent literacy and numeracy (FRN, 2013).

Many studies on the causes of pupils' poor reading skills argue that teachers in the primary schools have poor reading skills (Bakari, 2009) while other studies found the use of obsolete methods and strategies by teachers as being responsible for pupils' inability to read (Onukogu, 2003; Udosen, 2010; Izuagba & Afurobi, 2010; Izuagba & Nwigwe 2009, 2011). Other reasons for low literacy performance among primary school pupils in Nigeria include the following:

- Many teachers in the primary schools are not specialists in either English or the mother tongue, yet the teacher is expected to use either of the two as a medium of instruction as well as teach English language and the language of the immediate community as core subjects.
- Primary school teachers that teach English language /mother tongue were not equipped with the knowledge and skills to teach initial reading in these languages.
- Reading is not taught as a subject in the primary education system, particularly the state public schools.
- Teachers in the lower basic level lack knowledge of requisite techniques, strategies, skills, and innovative methods for teaching initial reading.
- There are gaps in the professional development of teachers at this level which shows a defect in the teacher education curriculum for prospective teachers for the primary education level.
- The curriculum of primary education studies (PES) is predominantly theoretical rather than applied.
- Many teachers in the lower basic education level do not have the opportunity for continual professional development.

As a matter of fact, the teaching of initial reading should effectively commence from the pre-primary level, especially now that Early Childhood Care Education (ECCE) has become an integral part of the basic education system (FRN, 2013). By this development, every pupil should be able to read not only two or three or four letter words but short simple sentences, exploring objects in his/her background (in English language and the mother tongue), and expressing his/her basic needs by the end of the lower basic education level. The rationale for the above assertion is that if they are able to achieve basic reading and writing at this level, when they transit to Primary 4 where the medium changes to English, they will not experience linguistic confusion. This is due to the expectation that the pupils would have learnt the letter sounds and how to distinctively blend the sounds to form words in the two languages taught as core subjects at this level. The researchers therefore assume that equipping teachers in the

lower basic education level with the knowledge of how to use the multisensory approach in teaching initial reading, it will facilitate the pupils' initial literacy development.

On this basis, this project sets out to expose some teachers of Primary 2 to the multisensory approach in teaching initial reading in English. According to Montessori (1912), the multisensory approach in teaching reading helps the child to learn through more than one of the senses: visual, auditory, auditory-digital, and kinesthetic. This approach makes the child to bring all his/her senses to bear on the task. The researchers hope that this approach, if effectively used, will not only facilitate initial reading, but also enhance retention of what is learnt.

In teaching initial reading, phonological awareness is a prerequisite to alphabetic understanding which is fundamental to automaticity with the code and these are fundamental in teaching initial reading. The National Research Council has confirmed the important relationship between phonological awareness and reading acquisition (National Reading Panel, 2000). Phonological awareness refers to the conscious understanding and knowledge of the fact that language is made up of sounds. This awareness enables learners to develop the insight that words consist of separate sounds and therefore the need to manipulate these individual sound units appropriately. The process also helps learners to understand that individual sounds combine/blend to form words.

The Multisensory Approach

The multisensory approach refers to teaching methods and strategies that make use of learning activities which involve learners in utilizing two or more sense organs in taking in or sharing ideas. Department for Education and Skills (DfES) (2004) quoted in Quality Improvement Agency (2008:2) defines multisensory as: 'using visual, auditory and kinesthetic modalities in learning at the same time'. The use of the multisensory approach in teaching is quite relevant to the Multiple Intelligence Theory which is concerned with differences in the way learners learn. Gardner (1999) identifies seven key areas of the Multiple Intelligence Theory as: Linguistic Intelligence, Spatial Intelligence, Bodily Kinesthetic Intelligence, Musical Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence, and Naturalistic Intelligence. The theory forges relationship between thinking and learning with the rationale of meeting the needs of all children. To achieve this, teachers must help the pupils to use their combination of the intelligences to be successful in learning, providing learning activities through various intelligences. This agrees with the use of the learner-centred methods and strategies which ensure that children are given ample opportunities to become actively involved in the execution of learning tasks/ activities; it is through these activities that learners develop competence. The multisensory

approach has been particularly valuable in literacy and language learning, as it reinforces the relationship between sound and symbol, word recognition, and the use of tactile methods such as tracing on rough or soft surfaces.

In the teaching of initial reading in English using the multisensory approach, there are five basic skills to teach and these are:

- **Learning the letter sounds:** Children are taught the main 42 letter sounds. This includes alphabet sounds as well as digraphs such as **sh**, **th**, **ai** and **ue**. In teaching these letter sounds, songs that help the child remember the sounds are used.
- **Learning letter formation:** Using different multi-sensory methods, children learn how to form and write the letters. In teaching letter formation, the pupils are made to trace, do air writing of the already learnt letter sounds.
- **Blending:** Blending means smoothly joining the letter sounds (phonemes) to come up with a pronunciation close enough to the correct pronunciation of a word. This might lead to sense (me, see; hit, sat) or nonsense words (**mouse**, **souse**; **fork**, **sork**). The important thing is that the pupils learn how to blend the sounds and form words. It is a crucial step in initial reading; the children are taught how to blend sounds, read and write new words.
- In teaching blending, care is taken in the selection of words to blend. Initially, two letter words are taught, followed by three letter words and then four letter words. Most of these words are selected from the child's sight vocabulary in order to facilitate learning. For example, the pupils could be asked, 'What word is made up of the sounds /s/ /i/ /t/?' The pupils will be expected to say that the word is **sit**.
- **Identifying the sounds in words (Segmenting):** Listening for the sounds in words helps the pupils in learning to spell. The two, three or four letter words are presented with one letter missing or the word is presented and they are asked to identify a particular sound. They may be also asked to identify a picture that its name starts with the sound. For example, 'What are the sounds in "pot"?' The pupils are expected to distinctively pronounce the sounds of the letters **p**, **o**, **t**.
- **Manipulating sounds in words :** Manipulating sounds within a word – they are asked to say what they will have if they change the /t/ in **tap** to /m/ and /s/. Or they can be asked, 'What is **sit** without the sound /s/?' The answer is **it**. Another example is, 'What word will you get if you change the /p/ in **pap** to /n/?' The correct answer is **nap**.

- **Tricky words:** Tricky words have irregular spellings and children learn them separately. They are usually taught after the pupils might have learnt to pronounce many words in their sight vocabulary.

In addition, since phonemic awareness activities help young children to know that words are made of sounds and activities as these help them to be able to:

- hear rhyming words e.g. **it, hit, bit, sit, pit, wit**
- break words into syllables e.g. /sl-eeep/, /t-reee/
- blend sounds to make words **ss-aa-tt, pp-ii-tt**
- replace the initial or final sound in a word and thereby form a new word. For example, replace the initial and final sounds in (k)cat, sat , peal ; jug with /m/ and /r/
- Match the sounds with words that contain the sounds or objects that contain them

The multisensory approach in teaching initial reading ensures that all learners are taken care of irrespective of their different learning styles. The visual learners rely on the visual elements incorporated in the lessons while the kinesthetic learners focus on movements integrated in the learning. In the same way, the auditory learners need to hear themselves talk about their learning in order to remember the material. The effectiveness of this approach using the Jolly Phonics strategy was supported by Ekpo, Udosen, Afangideh, Ekukinam & Ikorok, (2012) who confirmed enhanced reading performance in 13 out of 15 pupils in their study.

It is on this basis that this study sets out to explore some of the effects of the multisensory approach on the teaching of initial reading. This project sets out to train 40 teachers of Primary 2 on the use of the multisensory approach in teaching initial reading after which their use of this approach in teaching is monitored and the effects of the approach on pupils' initial reading skills measured. Specifically, the project aims to equip teachers with skills of using the multisensory approach in teaching initial reading to Primary 2 pupils.

Research Questions

1. What is the mean response scores of pupils in researcher made initial reading test in schools whose teachers had been trained on the use of multisensory approach in teaching initial reading?
2. What is the mean response scores of male and female pupils in researcher made initial reading test in schools whose teachers had been trained on the use of multisensory approach in teaching initial reading?

Hypothesis: There is no significant difference in the mean scores of male and female pupils in schools whose teachers had been trained on the use of multisensory approach in teaching initial reading?

Method

The study is a quasi-experimental study that made use of pretest and posttest design and the population comprised all teachers and primary two pupils in all public primary schools in Owerri educational zone. A total of 40 teachers were drawn through random sampling with non-replacement balloting technique from 20 public primary schools (2 teachers from each school) in Owerri Education Zone, who participated in this project. The teachers were trained for three weeks. The training was practice-oriented with a lot of hands-on experience, in-class demonstrations with colleagues, and personalized coaching on the use of the skills. The reason for this was that the teachers were expected to replicate the project under the supervision of the resource persons in their schools at the end of the training.

To determine the effectiveness of the project, the researchers developed an Initial Reading Multisensory Approach Test (IRMAT). The IRMAT was a researcher-made test that comprises of 10 items requiring pupils to vocalize, air write and trace. The test items were in the following areas: knowledge of letter sounds, blending two, three, four letter sounds in English, and correct pronunciation of two to four syllable words and matching picture with words. Each correct set of answers attracted 5, 4, 3, 2, 1 based on the criteria set and a maximum of 100%. The IRMAT was administered before (pretest) and after (posttest). The pre-test was administered on 100 primary-two pupils in five selected schools where the teachers that participated in the training were drawn.

The instrument was validated by three initial reading and multisensory approach experts and two experts in measurement and evaluation. Their corrections were effected in the final draft. The test instrument was subjected to reliability test using 20 pupils outside the study population. The result of test-retest conducted yielded a reliability coefficient of 0.78 when data were subjected to Kuder Richardson Formula 20. This result was judged to be reliable.

Data collection started after the administration of IRMAT (at pre-test) that helped in establishing the baseline for the training mounted for the teachers of primary two classes. The next session involved the conduct of 3 weeks training for teachers on the use of the multi-sensory approach in teaching initial reading. A period of 8 weeks was allowed after the training for the teachers to teach their pupils initial reading using the multi-sensory approach. In the third session, a post-test was administered by the researchers on the same group of pupils eight weeks after the teachers had received

training and grades assigned. A period of eight weeks was allowed so that the trained teachers will have enough time to cover the content of initial reading. The Pre-test instrument had same features as posttest. The only difference was that in the post-test, the items were reshuffled and the colour of paper used in producing the test instrument changed from white to yellow to avoid test wiseness.

The results of the pre- and post-tests were analysed using t-test to answer research questions and Analysis of Variance (ANOVA) for the hypothesis at 0.05 level of significance. The researchers ensured that extraneous variables were controlled. This study was partly sponsored by the International Reading Association (IRA).

Results

Research Question 1: What is the mean response scores of pupils in researcher made initial reading test in schools whose teachers had been trained on the use of multisensory approach in teaching initial reading?

Table 1: t-test analysis of data of pre and posttest of pupils in researcher made initial reading test in schools whose teachers were trained on the use of multisensory approach in teaching initial reading.

Test	N	X	SD	Df	t-cal	t-critical	Decision
Pre test	100	20.7	3.8	98	24.6	1.984	significant
Post test	100	54.2	1.7				

The table above shows that in the pre-test pupils obtained a mean of 20.7 and a standard deviation of 3.8 while in post-test they obtained a mean of 54.2 and a standard deviation of 1.7. The t-test comparison of the mean scores of the two groups yielded a t-calculated value of 24.6 and t-value of 1.984 at 0.05 level of significance with degree of freedom 98. This shows that pupils performed better after their teachers received training and taught them initial reading using the multisensory approach.

Research Question 2: What is the mean response scores of male and female pupils in researcher made initial reading test in schools whose primary two teachers were trained on the use of multisensory approach in teaching initial reading?

Table 2: t-test analysis of data of the mean response scores of male and female pupils in researcher made initial reading test in schools whose teachers were trained on the use of multisensory approach in teaching initial reading.

Test	N	X	SD	Df	t-cal	t-critical	Decision
Male	50	48.9	2.1	98	10.80	1.984	Significant
Female	50	39.9	1.78				

The above table shows that male pupils obtained a mean score of 48.9 and a standard deviation of 2.1, while female pupils obtained a mean of 39.9 and a standard of 1.78. The t-test comparison of the mean scores of the two groups yielded a t-calculated 10.80 and t-crit of 1.984 at 0.05 level of significance and degree of freedom 98. This shows that male students performed better on IRMAT than their female counterpart hence there is significant difference between the performance of male and female pupils.

Hypothesis 1: There is no significant difference in the mean scores of male and female pupils in schools whose teachers were trained on the use of multisensory approach in teaching initial reading?

Table 3: Analysis of Variance (ANOVA) of data of posttest of male and female pupils in schools whose teachers were trained on the use of multisensory approach in teaching initial reading.

Sources of Variation	Df	Sum of squares	Mean of squares	F-cal	F-critical	Decision
Between group	1	7490	7490			Significant
Within group	98	1722	17.57	426.29	6.90	P<0.05
Total	99	9212				

($F_1, 98 = 6.90, P = 0.05$)

In table 1 above F - cal =426.29 is greater than the f-critical = 6.90, therefore the null hypothesis of no significant difference in the mean scores of male and female pupils taught initial using the multisensory approach was rejected. The conclusion is that there is significant difference between the mean scores of male and female pupils performance. This result shows that the treatment given to the teachers had a significant impact on the pupils. ($F_1, 98 =6.90, P = 0.05$).

Discussion

The study set out to find out if the use of the multisensory approach in teaching initial reading would enhance the initial reading skills of Primary 2 pupils. The data analysed show that the multisensory approach used by the teachers in teaching initial reading had positive effect on the pupils as reflected in the enhanced post test scores of the pupils. When the mean of their pre-test and post test scores are compared, a significant difference was recorded t- calculated value of 24.6 and t-value of 1.984 at 0.05 level of significance with degree of freedom 98 on which basis the null hypothesis was replaced with the alternate hypothesis. In addition, t-test was used to compare the mean response scores of male and female pupils in the pre-test and post-test and the result shows that the male pupils had superior performance than the female pupils, t-calculated 10.80 and t-crit of 1.984 at 0.05 level of significance and degree of freedom 98. The data were further analysed using ANOVA and the result show that F - cal =426.29 is greater than the f-critical = 6.90, ($F_{1, 98} = 6.90$, $P = 0.05$). The superior post test performance of the pupils can only be attributed to the treatment that was given. This findings support Ekpo; Udosen; Afangideh; Ekuinam & Ikorok (2012) and the National Reading Panel (2000) on the importance of developing phonological awareness as a basis for teaching initial reading. It also agrees with the Department for Education and Skills (DfES) (2004) on the need to use the multisensory approach in teaching initial reading.

Recommendations

Based on the findings of this research the following recommendations are made:

1. There is need to retrain all teachers in the lower basic education level on the use of the multisensory approach in teaching initial reading.
2. There is need to include this approach in the content of method courses of the NCE teacher education curriculum for the Primary Education Studies (PES) and the ECCE pre-service teachers.
3. The multisensory approach should be included in the run of texts used in the pre primary and early primary education levels.
4. The skills of teacher educators in the PES and ECCE departments should be updated on the use of the multisensory approach in teaching.
5. Facilities for the use of this approach should be provided at these different levels.

Conclusion

The study sought to find out the impact of the use of the multisensory approach in teaching initial reading after building the capacity of teachers of primary two classes on its use. Before the teachers were trained a pre-test on initial reading was administered on their pupils this was followed by a three-week training on teaching initial reading using the multi-sensory approach. A period of eight weeks was allowed for the teachers to use this approach in teaching after which a post test was administered on the pupils. The data that accrued from the tests were analysed using t-test and ANOVA. The results of the analysis show that a significant difference was found between the pre and posttest which shows that the pupils performed better after their teachers received training and taught them initial reading using the multisensory approach. The results also show that a significant difference exist between the mean scores of male and female pupils to the advantage of the male pupils.

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