IMPACT OF DIFFERENTIATION ACTIVITIES ON READING ABILITY OF PRIMARY ONE PUPILS WITH READING DIFFICULTIES IN JOS NORTH LOCAL GOVERNMENT AREA, PLATEAU STATE

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ABSTRACT
This study was carried out to examine the impact of differentiation activities on reading ability of primary one pupils with reading difficulties in Jos North Local Government Area, Plateau State. Two research questions and three hypotheses were formulated to guide the study. Non-equivalent group pre-test-post-test design was used. A population of 96 pupils and a sample of 40 pupils were involved in the study. Sight Words Recognition Test (SWRT) and Reading Readiness Skill Test (RRST) were used as instruments for the study. Cronbach Alpha Method was used to obtain the reliability indexes of the instruments which were 85 for SWRT and 77 for RRST. Data was analysed using, simple percentage, mean, standard deviation and t-test for independent sample. After the analysis, it was found that the experimental group was able to recognise differences in letters (both lower and upper cases) at sight. Based on these findings, the researcher recommended that teachers should adopt the use of pre-reading activities, specifically differentiation activities for teaching pupils with reading difficulties learn how to read. This will help them to see connection between spoken words and printed symbols.

KEYWORDS: Differentiation activities, reading abilities, reading difficulty

INTRODUCTION
Differentiation activities are pre-reading activities that enable pupils with reading difficulties have practical information and knowledge about reading skills. These activities help pupils to see differences and connection between printed letters, objects, symbols and shapes. Pupils with reading difficulties are those who exhibit difficulties in their ability to recognise and differentiate letters, words at sight and associate objects, shapes or symbols with their printed names. Andzayi and Umolu (2004) observed that pupils who cannot differentiate printed symbols will have difficulties with reading. Pupils’ ability to read is based on the extent to which they can recognise similarities and differentiate letters and words at sight. Beaty (2008) acknowledged that the ability to recognise similarities and differences in words are important reading skills which pupils must acquire before they can read. They are also predictors of reading skills. Differentiation activities provide pupils with practical information
and experiences about the reading skills they need before they can read. These activities include recognition of shapes, pictures, and objects as well as letters and sight words recognition. They help pupils to see connection between reality and printed symbols when they start learning to read.

However, in most public schools, reading is seen as the ability to speak English, pronounce words, memorize or recite words after the teacher correctly. Oyetunde (2009) lamented that many public primary pupils are not only functionally illiterate in reading ability; they are introduced to reading without consideration for their background knowledge and experiences about printed symbols. They are not given enough differentiation activities to enable them master the letters of the alphabet before being taught to read. They are also not given opportunities to manipulate such letters and words practically and in different contexts to enable them see the connection between letters of the alphabet before being taught to read (Milaham & Zaram, 2017). This makes many of them to write “b” for “d”, “m” for “w” or “was” for “saw” and “dog” for “boy” or even reverse their pronunciations. They may even omit or add letters in words or substitute a given letter for another when reading (Beaty, 2008). These difficulties exhibited are indicators that the pupils have not acquired differentiation skills for beginning reading. Piaget (1975) theorised that provision of differentiation activities brings abstract ideas into reality in children. Children’s active interaction with differentiation activities helps them gain knowledge, experiences and skills called adaptations. These adaptation experiences according to Piaget are assimilation and accommodation which cause changes in children’s cognitive, manipulative and expressive domains.

Despite the recognition accorded to the skills of similarities and differences for beginning reading, there existed a serious problem in the teaching and acquisition of reading skills at the primary school level (Zhang & King-Fai-Hui, 2003). Pupils are not actively involved in acquiring reading skills using these differentiation activities. Their ability to read, recognise similarities and differences as well as bringing their past experiences to bear on task before them for meaningful solution is in many cases very poor. As a result, the pupils’ performance in school subjects that demand the ability to read to succeed is very poor. This study was aimed at determining the impact of differentiation activities on reading ability of primary one pupils with reading difficulties in Jos North LGA, Plateau State.

**STATEMENT OF THE PROBLEM**

In many public primary schools in Nigeria, most pupils cannot read in English. On entering primary school, they are introduced to reading without the ability to differentiate letters of the alphabet and words at sight. Their background experiences are not considered in the provision of the reading texts. They are not given opportunities to manipulate letters of the
alphabet and words practically and in different context. Reading is taught through memorisation or recitation of letters, words and sentences without seeing them physically in print. Sometimes, the text book used is either above the pupils’ reading levels or above their experiences. This makes them to have difficulty relating what they are learning (present experiences) to what they have learned (past experiences). In fact, from the researcher’s experience during teaching practice supervision and interaction with pupils in many public primary schools in Plateau, Nasarawa and Kaduna States, majority of them cannot read. They see reading as intimidating and frustrating.

Milaham and Zaram (2017) indicated that many public primary school pupils lack the ability to read meaningfully to succeed in school due to poor differentiation skills. The general assumption about reading is that pupils learn to read in the course of schooling. Teachers believe that once pupils can speak English, they can read. This explains why during reading, the pupils are usually asked to “read after” the teacher, do chorus reading or recite letters, words or sentences without seeing such letters or words in print. The consequence of these is that pupils find reading difficult, problematic and frustrating (Oyetunde, 2009). This makes them to show no interest in attending to printed materials thereby limited their reading ability. On these bases, the following research questions were set to guide the study:

1. What are the differentiation ability levels of pupils with reading difficulties before and after exposure to differentiation activities?
2. What are the differentiation achievement levels of pupils with reading difficulties before and after exposure to differentiation activities?

The following hypotheses were also set and tested at 0.05 level of significance.

1. There is no significant difference between differentiation ability mean scores of the experimental and control groups before exposure to differentiation activities.
2. There is no significant difference between differentiation achievement mean scores of experimental and control groups after exposure to sight words recognition.

METHODOLOGY

Quasi experimental design was employed for this study, specifically; the non-equivalent group pre-test-post-test design was used. The participants were grouped into two groups “A” and “B”. This design helped the researcher to determine the effects of differentiation activities on the reading ability of the pupils before and after treatment. The experimental and control groups were given pre-test (O1 and O3) using Sight Word Recognition Test (SWRT) and Reading Readiness Skills Test (RRST). These tests were administered on the two groups to determine their entry behaviour before the treatment. Only the experimental group was given treatment (X) using differentiation activities for thirteen
weeks. The control group was taught using the conventional text book method. After the treatment, both the experimental and control groups were post-tested (O2 and O4) using the SWRT and RRST. This was done to determine if any gain score existed in their reading ability after the treatment.

The population for this study consisted of 96 primary one pupils with reading difficulties and a sample of 40 pupils as participants who were selected using simple random sampling technique. Two instruments were used for data collection. Sight Word Recognition Test (SWRT) was adapted and used to screen the pupils for reading difficulties. “Yes” was written on 20 pieces of paper and “No” on 20 pieces. Those who picked “Yes” were tagged the experimental group, while those who picked “No” were tagged the control group. The remaining papers were left blank. The papers were mixed and pupils asked to individually pick one without looking at the content.

Reading Readiness Skills Test (RRST) was also used to assess the pupils’ differentiation abilities. This instrument consists of differentiation activities aimed at assessing the pupils’ ability to differentiate between letters and words. This instrument was validated by experts in Learning Disabilities, Test and Measurement and English Education. The reliability of the instrument was established using Pearson Product Moment Correlation computation.

RESULTS

The results are based on the outcome of analysis of the research questions and hypotheses.

Research Question One: What are the differentiation ability levels of pupils with reading difficulties before and after exposure to differentiation activities?

Table 1: Differentiation Ability Levels of Experimental and Control Groups Before and After Exposure to Differentiation Activities

<table>
<thead>
<tr>
<th>Differentiation Ability Levels</th>
<th>Experimental</th>
<th>Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>None reader (1 to 20)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Beginning reader (21 to 40)</td>
<td>11 (55)</td>
<td>11 (55)</td>
</tr>
<tr>
<td>Average reader (41 to 60)</td>
<td>9 (45)</td>
<td>9 (45)</td>
</tr>
<tr>
<td>Reader (61 to 80)</td>
<td>0</td>
<td>7 (35)</td>
</tr>
<tr>
<td>Fluent reader (81 to 100)</td>
<td>0</td>
<td>13 (65)</td>
</tr>
<tr>
<td>Total</td>
<td>20 (100)</td>
<td>20 (100)</td>
</tr>
</tbody>
</table>

Percentage in Parenthesis (%)

Table 1 shows the percentage scores of reading ability levels of the experimental and control groups before and after exposure to differentiation activities. Before exposure to differentiation activities, 11 pupils, representing 55% were rated “Beginning reader” and 9
pupils, representing 45% in both the experimental and control groups were rated “Average reader”. After the experimental group were exposed to differentiation activities, 7 pupils, representing 35% were rated “Reader”, while 13 pupils, representing 65% were rated “Fluent reader”. In the control group, 20 pupils, representing 100% were rated “Average reader”. This indicates that differentiation activities can be used to improve the pupils’ ability to differentiate letters and words at sight.

**Research Question Two:** What are the differentiation achievement levels of pupils with reading difficulties before and after exposure to differentiation activities?

**Table 2: Differentiation Achievement Levels of Experimental and Control Group Before and After Exposure to Differentiation Activities**

<table>
<thead>
<tr>
<th>Differentiation Achievement Levels</th>
<th>EXPERIMENTAL</th>
<th>CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>None reader (1 to 20)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Beginning reader (21 to 40)</td>
<td>10 (50)</td>
<td>0</td>
</tr>
<tr>
<td>Average reader (41 to 60)</td>
<td>10 (50)</td>
<td>3 (15.00)</td>
</tr>
<tr>
<td>Reader (61 to 80)</td>
<td>0</td>
<td>7 (35)</td>
</tr>
<tr>
<td>Fluent reader (81 to 100)</td>
<td>0</td>
<td>13 (65)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20 (100)</strong></td>
<td><strong>20 (100)</strong></td>
</tr>
</tbody>
</table>

Percentage in Parenthesis (%)

Table 2 shows the percentage scores of reading ability levels of both the experimental and control groups before and after exposure to differentiation activities. Before exposure to differentiation activities, 10 pupils representing 50% in the experimental group were rated “Getting ready” and “Averagely ready”, while in the control group, 17 pupils representing 85% were rated “Getting ready” and 3 pupils, representing 15% were rated “Averagely ready”. After exposure to differentiation activities, 7 pupils representing 35% in the experimental group were rated “Ready” while 13 pupils representing 65% were rated “Fully ready”. In the control group, 1 pupil, representing 5% was rated “Getting ready”, while 19 pupils representing 95% were rated “Averagely ready”. The result indicates that differentiation activities if used extensively can improve the pupils’ reading abilities.

**Hypothesis One:** There is no significant difference between differentiation ability mean scores of experimental and control groups before exposure to differentiation activities.

**Table 3: Differentiation Ability Mean Scores of Experimental and Control Groups Before Exposure to Differentiation Activities**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>$\bar{x}$</th>
<th>SD</th>
<th>Df</th>
<th>t_{cal}</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>20</td>
<td>41.67</td>
<td>5.67</td>
<td>38</td>
<td>0.90</td>
<td>.373</td>
</tr>
<tr>
<td>Control</td>
<td>20</td>
<td>40.33</td>
<td>3.40</td>
<td>38</td>
<td>0.90</td>
<td>.373</td>
</tr>
</tbody>
</table>

P >0.05
Table 3 indicates the pre-test differentiation ability mean scores of experimental and control groups before exposure to differentiation activities. The SPSS version 17.0 output of the analysis showed that the pupils in the experimental group had a mean score of 41.67 and a standard deviation of 5.67, whereas the control group had a mean score of 40.33 and a standard deviation of 3.40. This shows that there is no significant difference in the differentiation ability mean scores between the experimental and control groups. In addition, the calculated value of t was 0.90, while the p-value was 0.373. Since the p-value of 0.373 is greater than 0.05, it means that there is greater chance that the differences in differentiation ability mean scores between the experimental and control groups before exposure to differentiation activities occurred by chance. Therefore, the researcher accepted the null hypothesis and concluded that there is no significant difference in the differentiation ability scores of the experimental and control groups before exposure to pre-reading activities.

**Hypothesis Two:** There is no significant difference between differentiation achievement mean scores of experimental and control groups after exposure to SWRT.

**Table 4: Differentiation Achievement Mean Scores of Experimental and Control Groups after Exposure to RRST**

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>$\bar{X}$</th>
<th>SD</th>
<th>Df</th>
<th>t-cal.</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>20</td>
<td>56.35</td>
<td>6.69</td>
<td></td>
<td>28.07</td>
<td>0.000</td>
</tr>
<tr>
<td>Control</td>
<td>20</td>
<td>13.00</td>
<td>1.72</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P > 0.05

Table 4 reveals the post-test differentiation achievement mean scores of the experimental and control groups after exposure to sight word recognition activities. The SPSS version 17.0 output of the analysis showed that the experimental group had a mean score of 56.65 and a standard deviation of 6.69, whereas the control group had a mean score of 13.00 and a standard deviation of 1.72. This shows that there is significant difference in the differentiation achievement mean scores between the experimental and control groups. In addition, the calculated value of t was 28.07, while the p-value was 0.000. Since the p-value of 0.000 is less than 0.05, it means that there is less chance that the differences in the post-test differentiation achievement scores of the experimental and control groups on SWRT after exposure to differentiation activities occurred by chance. Therefore, the researcher failed to accept the null hypothesis and concluded that there is a significant difference in the differentiation achievement scores between experimental and control groups after exposure to word recognition activities.
DISCUSSION

In research question one, the pre-test percentage scores shows that 55% of the respondents in both the experimental and control groups were rated as “Beginning reader”, while 45% of them were rated “Average reader”. After the experimental group was exposed to intervention using differentiation activities, 35% were rated “Average reader”, while 65 were rated “Fluent reader”. They were able to recognise similarities and differences in printed letters, words, pictures and shapes at sight. The control group were taught using the conventional method. Their post-test score was 100%. They were rated as “Average reader” for beginning reading. They showed low improvement in their reading ability as compared with the result of experimental group.

In research question two, the researcher investigated the reading ability levels of pupils with reading difficulties after exposure to differentiation activities. The result of the pre-test showed that the reading ability levels of majority of the pupils in both the experimental and control groups were rated as “Beginning readers” for reading. After the experimental group was taught using differentiation activities, they showed significant improvement in their ability to differentiate printed letters, both lower and upper cases of the alphabet. This was revealed in table two where 35% were rated as “Readers”, while 65% were rated as “Fluent readers” as against the percentage scores of the control group where 5% were rated as “Beginning readers”, while 95% were rated Average readers”. This showed that differentiation activities are effective means of helping pupils to acquire reading skills.

In testing the hypotheses, data collected were analysed using t-test for independent samples. The results indicated that there were no significant differences in the reading ability mean scores of the experimental and control groups on differentiation skills before they were exposed to differentiation activities. The pre-test t-test results showed that the pre-test p.values for differentiation activity is greater than 0.05. This shows that the differences in the pre-test reading ability mean scores between the experimental and control groups on differentiation skills before exposure to differentiation activities occurred by chance. The experimental group was taught using differentiation activities, while the control group was taught using conventional method. Both groups were post-tested using Sight Word Recognition Test. The experimental group showed significant improvement in their reading ability mean scores than the control group. This was also ascertained by the post-test t-test analysis results indicated in table 4, where the post-test p.values of 0.000 scored in differentiation skills is less than 0.05. This shows that the differences in the post-test reading ability mean scores between the experimental and control groups on differentiation skills occurred as a result of intervention received when compared to that the control group.
CONCLUSION

The study investigated the impact of differentiation activities on reading ability of primary one pupils with reading difficulties. The experimental group were given different pictures, symbols, shapes, lower and upper case letters randomly to identify their differences and similarities. They were asked to name items that are found in school, home and market which they can remember. After the experimental group were engaged in differentiation activities, they were able to use their background knowledge and experiences to differentiate printed letters and words at sight. The significant improvement recorded was mainly due to the intervention given using differentiation activities.

RECOMMENDATIONS

The following recommendations were made based on the findings of the study.

1. Pupils should be made to differentiate letters of the alphabet and words at sight before being taught to read. They should be given enough practices in differentiation activities to enable them associate printed symbols with the real objects and connect past experiences to present experiences when they read.

2. Pupils should be actively engaged in learning to read through participation in differentiation activities to enable them gain background knowledge and experiences from which they will use to generate their reading materials.

REFERENCES


