

# Effectiveness Direct Instructions on Pupils' Academic Performance in Numeracy in Ilorin West Local Government Area of Kwara State

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**Abstract:** *The researcher investigated the effectiveness of direct- instruction on pupils' academic performance. Research-work adopted the quasi-experimental research design. A factorial design of 2X2X2 adopted to test the hypotheses. The population all comprised pupils in all primary schools. Sample size was 4 primary three classes. The multistage sampling techniques was used. Seven hypotheses were formulated, Instrument were given face and content validity by experts. Test retest method was adopted to ascertain the reliability of the instrument which was 0.81. Hypotheses were tested, with analysis of covariance (ANCOVA). Findings shown that there was significant effect of direct instructions on pupils' academic performance in Numeracy. Finally, recommendation were made, Numeracy teachers should be informed on the effect of direct instructions on pupils' academic performance in numeracy,*

**Keywords:** *Direct instruction*

## Introduction

Regular poor academic performance by most of the pupils in numeracy is regularly connected to the ineffective teaching methods by teachers who impart knowledge (Adunola, 2011). The rest of causes of poor achievement in Numeracy among school pupils include misconception of the subject Numeracy as difficult one, fear and anxiety. In spite of mathematics greatness and importance, mathematics education suffers from apparent deficiencies in teaching instruction as the students' attitude to mathematics remain a great challenge for the educators. In the recent year, according to Chief Examiner of West African Examination Council, WAEC (2017) reported that 2017 is better than 2016 yet not encouraging at all. According to Wikipedia (2010), Direct instructional strategy is an educational technique that challenges the mantras of modern bureaucrats and shows that even the most disadvantaged children can excel, if only the schools will teach them||.

The researcher intend to use moderating variables of gender and school type which were not considered in the previous studies. Gender is a specially constructed phenomenon. Such that society ascribes different roles, duties, behaviours, and mannerisms on the gender, (Nnamani & Oyibe, 2016). Gender connects to cultural attributes of both boys and girls (Nnamani et al 2016). Gender, according to Nnamani et al (2016), is a psychological experience of being a male or a female. They also opined that gender is socio-cultural construct that connotes the differentiated roles and responsibilities of boys and girls in a specific society. This definition connotes that gender dictates the role which one plays in connection to general political, cultural, social and economic system of the society. According to Nnamani et al (2016), gender refers to all the attributes of male and female which a specific society has dictated and given each sex. Also, Nnamani and Oyibe (2016) sees gender as the dichotomy of roles culturally imposed on the sexes. Another study conversely showed that females tend to earn better grades than males in mathematics. Another variable of impotence to the study is school type

Public and private schools are institutions owned as the name connotes. The public school in Nigeria have federal, state, and local governments as their proprietors while the private schools have individuals, associations or organisations as their owners. Olatoye and Olasehinde, (2014) maintained that private schools vary widely and the level of parental participation differs from one private school to the other. What is important for a parent is to choose a private school that has characteristics that match what he/she is looking for. Parents pay for the cost of educating their children in private schools and therefore tend to be more engaged in determining what the schools offer than parents whose children are in the public schools (Olatoye&Agbatogun, 2009).

## Statement of the Problem

Poor performance in numeracy at this level of education might be as a result of inadequacies and inappropriate use of classroom practices by the teachers. This has been a source of focus to ministries of education more especially that numeracy is a major subject in schools. In the recent year, according to Chief Examiner of WAEC (2017) who reported that 2017 is better than 2016 yet not encouraging at all. Based on this reason, the researcher investigated the effectiveness of direct instruction on pupils' academic performance.

While theoretical and empirical evidences on the learner-centered teaching instruction have been documented in Numeracy across the globe, empirical evidence on some of these innovative strategies (Direct- instruction) in the study is not many. To the best of researcher's knowledge, there seems to be no documented evidence on the effect of Direct-Instruction on pupils' academic performance in Numeracy. Although some researchers have worked on other strategies such as guided discovery and problem-solving strategy, relationship between children's constructive play activities, spatial ability, mathematical word and problem-solving performance. In spite of these efforts, the problem of pupils' poor academic performance in Numeracy skills persists. This creates a researchable gap in knowledge, the gap which research intends to fill by examining the effect of Direct-instructions on pupils' academic performance

### Research Hypotheses

The following research hypotheses are formulated;

**H<sub>01</sub>:** There will be no significant main effect of treatment on pupils' academic performance

**H<sub>02</sub>:** There will be no significant effect of gender on pupils' academic performance

**H<sub>03</sub>:** There will be no significant effect of school type on pupils' academic performance

**H<sub>04</sub>:** There will be no significant interaction effect of treatment and gender on pupils' academic performance.

**H<sub>05</sub>:** There will be no significant interaction effect of treatment and school type on pupils' academic performance.

**H<sub>06</sub>:** There will be no significant interaction effect of gender and school type on pupils' academic performance.

**H<sub>07</sub>:** There will be no significant interaction effect of treatment, gender, and school type on pupils' academic performance in Numeracy.

### Methodology

This research-work adopted the quasi-experimental research design. The design is suitable in establishing the possible cause and effect relationship. A factorial design of 2X2X2 adopted to test the null hypotheses. The population was all pupils in all primary schools. Sample size six primary three classes. The multistage sampling techniques was used. The purposive sampling adopted to select 4 mixed primary schools because of certain characteristics they possessed that relevant to the conduct. Schools are classified into two strata from which four schools were randomly selected.

Three treatment packages: Pupils' Numeracy Performance Test (PNPT), Instructional Guide for Direct Instruction (IGDI) and Instructional Guide for Conventional Method (IGCM). Instruments was given face and content validity by some selected Numeracy experts, 25 copies of the test were administered two times on primary 3 pupils in another school outside sample. The final drafts were tested two times, giving two weeks interval. Thereafter, Pearson Product-Moment Correlation (PPMC) coefficient, the reliability index was 0.81. The data were analyzed using both descriptive and inferential statistics.

### Results

**Research Hypothesis One:** There is no significant main effect of treatment on pupils' academic performance.

**Table 1: Showing summary of Analysis of Co-variance (ANOVA) on effect of treatment on pupils' academic performance**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	967.818 <sup>a</sup>	12	80.652	6.877	.240
Intercept	5851.672	1	5851.672	498.955	.000
Pretest	542.453	1	542.453	46.253	.132
<b>Treatment</b>	60.607	2	30.303	2.584	<b>.020</b>
Gender	.194	1	.194	.017	.898
School type	29.258	1	29.258	2.495	.117
<b>Treatment * Gender</b>	2.630	2	1.315	.112	.894
Treatment * School type	3.252	2	1.626	.139	.871
Gender * School type	1.075	1	1.075	.092	.763

Treatment * Gender *	14.782	2	7.391	.630	.534
School type					
Error	1360.430	116	11.728		
Total	13852.000	129			
Corrected Total	2328.248	128			

Table 1, ( $F_{(2; 116)} = 2.584$ ,  $P < 0.05$ ). The hypothesis was rejected in the light of the result since the significant value (.020) is less than 0.05. This shown that treatment had significant effect on pupils' academic performance

**Table 2: Summary of Bonferroni's Post Hoc pairwise Comparison of the scores within the three Groups**

Treatment	Mean Score	Experimental	Control Group
Direct-Instruction	68.464		*
Conventional Method	59.961	*	

Table 2 reveals that the significant main effect exposed by table 1 is as a result of the significant difference between: Direct-instruction and Conventional Method. Direct-Instruction refers to experimental group and Conventional Method known as control group. This implies that those taught with Direct-Instruction performed better than those taught traditional method.

#### Summary of Findings

1. There was significant effect of direct instructions on pupils' s academic performance
2. There was no significant effect of gender on pupils' academic performance
3. There was no significant effect of school type on pupils' academic performance
4. There was no significant interaction effect of treatment and gender on pupils' academic performance
5. There was no significant interaction effect of treatment and school-type on pupils' academic performance
6. There was no significant interaction effect of gender and school-type on pupils' academic performance
7. There was no significant interaction effect of treatment, gender and school-type on pupils' academic performance

#### Discussion

The findings revealed that there is significant main effect of Direct-instruction on pupils' academic performance. The study was in agreement with the results of Oladayo (2012) This is a quasi-experimental research designed to determine the effects of Direct and Indirect instructional strategies on Mathematics achievement students. Results got after data analysis indicated that direct instructional strategy has a better effect on students achievement in Mathematics compared to indirect instructional strategy; significant difference existed between direct and indirect instruction on students achievement in Mathematics. The findings was in tandem with Rubina,(2010). The results of Direct Instruction Model were consistently better than those of traditional instruction, both in terms of achievement and attitude. After an interval of six weeks, the students taught through DI also showed better retention.

#### Conclusion

The study investigated the effectiveness of direct instructions on pupils' academic performance. It can be explicitly stated that direct instructions can enhance better performance than the traditional method. Gender and school type had no significant effect on pupils' academic performance

#### Recommendations

In the light of this conclusion, the following recommendations were made:

1. Numeracy teachers should be enlightened on the effectiveness of direct instruction on pupils' academic performance.

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