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Effect of Advance Organizers on Secondary School Students' Performance and Retention in English Language Comprehension

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Abstract:- The study investigated the effect of Advance Organizer (AO's) on secondary school students performance and retention in English Language comprehension using a quasi- experimental design of the pretest, posttest control type. A total of 90 SSII students were purposively sampled from three public secondary schools in Rivers State. From a population of 3200. The experimental group consisted of 30 students each while the control group had 30 students. A teacher-made Graphics and Pictorial Advance Organizers .were used to intervene on student's pre-test performance and the conventional Lecture approach of the control group. Students ' performance and post-delayed test were based on the West African Examination council (WAEC, 1998)Comprehension question. Descriptive statistics of mean was used to answer the research questions while the inferential statistics of t-test and analysis of significance level, there is a significant difference in performance between students taught using the Graphics Advance organizer (GA0) and pictorial Advance Organizer (PAO) and those taught using conventional Lecture Method. Furthermore, there is a significant difference between the retention of students reading comprehension, taught using the advance organizers. However, the pictorial advance organizer showed greater potency in facilitating reading comprehension among the students. It is therefore recommended that Pictorial Advance Organizers (PAO) b e used in teaching reading comprehension, in order to improve students' performance and retention in English language comprehension.

Keyword:- *Advance Organizers, Graphics, Pictorial, Performance, Retention Comprehension.*

I. INTRODUCTION

Effective Reading comprehension has been impeded by several such as students lack of prior knowledge of comprehension strategies, ineffective and poor teacher preparation, mother tongue interference, English foreign Language readers' habit and orientation to reading. The main consequence of these problems is the students' poor performance and retention in reading comprehension difficulties in English language communication, poor second language acquisition and literacy. In order TO overcome these problems, specialties in English language devised teaching strategies to evolve competency in reading which emphasizes methods such as the word identification, self-questioning (Socratic) methods^ inference strategy background knowledge probe and advance organizers learning strategy. (Oludele & Abosede, 2017). Kierzadeh (2018) and Vaughin (2007) adopted the effectiveness of blended learning to improve reading comprehension among Iranian EFL students. The method was significant in achieving comprehension amongst students for needed skill to continue academic education. Blended learning platform was used to help learners improve language skills and reading comprehension. The characteristic property of the learning method indicated flexibility of learning resources, maintenance of learning variety, self-regulated learning and active participation of learners.

Significant differences was found when Yang (2014) introduced audio-visual input transmission method in alleviating students difficulties in reading while Micheal and Roebers (2008) examined the effect of the types of Advance organizers on children comprehension of an educational film about sugar refining.

The experimental group performed better than the control group in children's comprehension and recall ability. These evidences inform that the application of technology reading improve comprehension, recall and improve performance. Mayer & Morenzo (2010) stated that students poor cognition of concepts result from poor instructional design and obstruction of extraneous cognitive load. The Advance organizer mitigates learners cognitive load, activities prior knowledge pre-deposited in the cognitive structure of learners.

The present study investigates the effectiveness of advance organizer on reading comprehension and retention of secondary school students.

II. REVIEW OF RELATED LITERATURE

The use of Advance organizer is linked with meaningful learning and has plausible high level achievement in reading. Advance organizer is an information that is presented prior to learning and can be used by the learner to organize and interpret new incoming information. MEST (2006) explained that organizers are introduced as a pre-teaching tool not teaching aid, in its application- and presented at a higher level of abstraction, which is selected on the basis of its suitability for explaining, integrating and interrelating the material they precede.

As an instructional model, it complements the representation and combination characteristics of a dual-coding in order to foster meaningful learning by prompting the students pre- existing super ordinate concepts that exists in his/her cognitive structure The concept related advance organizer is a learning strategy for implementing the programmes, based on the Principles of progressive differentiation and integrative reconciliation .which involve the use of relevant and inclusive materials (Ausubel 1962). According Ellis (2006) to Graphic organizers make content easier to learn and understand as well as improve performance of learners in diverse context of studies, especially in English language as a second language. Advance Organizers proffer students with learning disabilities, improved learning and retention of new skills and concepts.

Mohammadi, Moenikia and Zahed-Babelan (2010) investigated on the role of advance organizer on English language learning as a second language. Result showed no significant difference between the experimental and control groups in the pretest (t 139 , -1.43). The use of advance organizers effected greater mean score performance and Mean Score Retention (MSR) of the experiment group as than those of the control group shown in Fig 1.

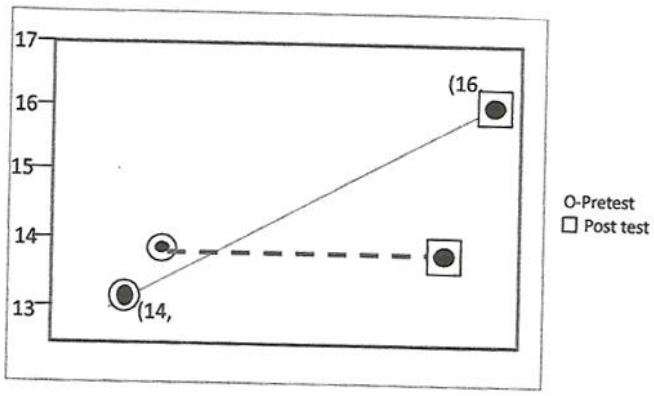

Fig 1. Post-test, Pre-test correlates (Mohammadi, Moe Nikia & Zahed-Babelan (2010)

English as a Second language has posed difficulties to students who are exposed to vast use of the language structures, vocabularies, and varieties of teaching in secondary schools English language comprehension has become vital to language acquisition of students and scholarly demand for proficiency. English on a secondary level is vastly used in the learning and communication in other vital subjects hence learner degree of attention, curiosity and interest created while it is expected that studying should be directly linked with their communicative ability, concept understanding and performance. Although most student concepts are replicated in language literatures. The cognitive approach to learning second language has been explained to involve comprehension input, interaction and comprehension output (Plass & Jones, 2005). Teachers are abreast with strategies to clarify and proffer support for learning. This has put the use of advance organizer as an inevitable teaching strategy, if students performance and retention in English language comprehension would improve. Moreso, kim, Voughin, Wanzek & Wei, (2004) stated that advance organizer (Graphics) are effective ways to facilitate any teaching task and that students with special needs comprehend text in print-based environments.

- *Advance organizer as a classroom teaching model for comprehension*

Students at the secondary education level make use of comprehension textbooks workbooks and other relevant teacher-made materials for teaching and learning, most often the traditional method adopted despite the increasing technology in learning is not significant to improved learning and performance. This may have contributed to the poor performances of students in English Language and dismal communicative abilities among L2 students.

Most textbooks contain varied visualization such as diagrams, graphics, images, typical of a at this level of print environment. The mediation of these diagrams, pictures or graphics animated or projected in dynamic visualization at that level would require expertise that is use of appropriate technology, adequate teacher preparation and instructional techniques. Advance organizers whether pictorial, written, graphics or animated stimulate student's dual coding cognition of concepts by allowing students affixation of visuals to their cognitive structures and eventual differentiation and reconstruction of these materials to make meaning, shortly, within the learning process. The result is an effective and facilitating reading comprehension via processing of information.

In the classroom, Advance organizers is presented at a higher order abstraction in such a manner that learners would be presented with authentic materials (Richards & Rodgers, 2001) hence allowing them acquire knowledge in a meaningful way. Organizer design should be general, inclusive and hierarchically woven with the fabric of knowledge. The abstract ideas in a passage can be aligned, resolved and better understood in the interactivity of word-word, word-picture and in some cases visual-audio presentation. The learner assimilates what has been presented into his cognitive domain where differentiation and

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meaningful learning occur. The responsibility of an instructor or teacher in to guide and reposition through inquiry and use of questioning techniques. Honz and Schnotz (2010) added that it is expected of the teacher to select relevant words to process into the learners working memory, select relevant images, integrate the visual and auditory information prior to the knowledge acquired.

- *Advanced organizers and Retention of students in Reading Comprehension*

Reading Comprehension problem are pervasive and associated with commendable challenge of retention. A.O can be used to resolve secondary students with significant ready difficulty as an intervention in addition to acquisition of disciplinary literacy of the content areas particularly in social studies (Shanaham & Shanahan, 2008), this is further explained as the understanding of vocabulary and ways of learning from the text materials specific to the content which requires students focus. Although Fisher and Frey (2014) had a successful intervention on students reading comprehension disability using short complex text read repeatedly with text dependent questions, AO had positive outcomes where pictures gave referential support and high level of cognation. This intervention singularly close the gap with their poor performances and struggling with reading comprehension.

Reading Retention Strategy (RRS) is designed to motivate students read and have understanding of the main points of the readings (Divol & Browning, 2013)

The authors emphasized that retention of reading materials is necessary for students successful learning and occur when learning memory is preserved for a long time such that can locate, identify, and retrieve it accurately in the future (Sousa, 2001) A.O has improved student retention in reading comprehension when multimedia resources are utilised in measuring students English comprehension. Okey and Avwiri (2014) found that there is a significant difference between students performance and retention of the concepts of electromagnetism when taught using Pictorial Advance Organizer (PAO).

III. METHOD

The study adopted a quasi-experimental pretest post-test control group design 2300 SSS 2 students in public secondary schools in Obio/Akpor Local Government Area of Rivers State form the population of study. A total of 90 students were purposively sampled from 3 schools during the 22/23 academic session. The experimental group involved a total of 60 students randomly selected into Graphics (30) and Pictorial (30) advance organizers were used while the control group (30 students) were taught using the (conventional Lecture method (CLM). Teacher made tests were used for teaching concepts such as the market place and gender inequality in secondary Education and Teacher – made – advance organizers of pictorial graphic – word type) in the experimental group. Both groups were exposed to the comprehension test (WAEC, 1998) English comprehension for evaluation of the effects of AO on students performance abilities and retention.

The Graphic Advance Organizer (GAO) and Pictorial Advance organizer (PAO) were administered to the students, prior to the teaching of the concepts after a pretest the Post test scores on WAEC, 1998 Compression passage, collated. Both scores provided answers for the research questions and stated hypotheses.

A. *Objectives of the Study*

The objectives of the study are to:

- Examine the effectiveness of advance organizers (graphics and pictorial advance organizers) on students performance in reading comprehension.
- Investigate the retention ability of students on reading comprehension when taught using the different types of advance organizers.
- Ascertain the differences in performance between students taught using Advance organizer (Graphics and Pictorial Advance Organizers) and those taught using the conventional lecture method.

B. *Research Questions*

The following research questions were formulated to guide the study.

- What is the difference in performance between students taught using Advance organizers (Graphics and Pictorial Advance Organizers) and those taught using conventional Lecture Method?
- How does students' retention differ when taught using the typology of Advance Organizer

C. *Research Hypotheses*

The following null hypotheses are tested at 0.05 significance.

Ho_1. There is no significant difference between students performance in reading comprehension taught using the Advance organizer and those taught using the Conventional Lecture Method (CLM)

Ho_2 There is no significant difference in retention of concepts between students taught using graphics Advance Organizer **(GAO**) and those taught using pictorial Advance (organizer

IV. RESULTS AND DISCUSSION

Research Question I: what is the difference between the performance of students taught using Advance Organizers (Graphics and Pictorial) and those taught using conventional Lecture Method?

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Table 1: Mean scores of students in the Experimental and Control groups

Groups	Mean pretest score (x)	Mean Post-test (y)	N	Difference	Difference (D)
Experimental (x) I (Graphics) (y) ii (pictorial)	 3.35 2.59	 3.30 3.45	 30 30	 1.28 0.93	 0.35
Control (CLM)	2.37	2.52	30		

x = mean difference of Pre-test; D- mean difference. Y - mean difference of pretest.

The mean pretest score of students taught using Graphics and Pictorial organizers are ($\bar{x}$)r3.35 and (y)-2.59 respectively, while the scores of students taught using the conventional Lecture Method is ($\bar{x}$)s2.37. The post-test mean scores of the experimental group are ($\bar{x}$) 3.80, x = (3.45) and control $\bar{x}$ (2.52). The difference of the group shows that the mean experimental group score is greater than those of the conventional group. ($\bar{x}$:) 3.45> 3.30> 2.52). While the experimental group shows differences of 0.35 between the Graphics Advance Organizer (GAO) and Pictorial Advance Organizer (PAO). However, those exposed to graphic advance organizers had greater score (1.28>0.93) than those taught using the Pictorial Advance Organizer.

Research Question II

How does student's retention differ when taught using the Graphic Advance organizer (GAO) and Pictorial Advance Organizer (PAO)

Table 2: Students post-delay test scores given the typology of Advance organizers.

Group	Mean Post Test Scores	Mean Post Delayed Scores(R)
Experimental I II	 3.80 3.45	 3.20 3.60
Control	2.52	2.52

The mean post delayed score of students exposed to graphics Advance organizer was (x) - 3.80 while those taught using pictorial advance organizer was (x)=.3.60. Students retention of concept was higher in the experimental group than in the control group with those taught using pictorial organizer having more retention of concepts than other counterparts.

The F –calcuated value is 11.924 at df (2,89) while F-critical values is 3.07 at 0.05 significant level. Since the fcal > F critical, there is no significant difference between the performance of students in rewarding comprehension taught using the PAO and GAO types of organizers. However, the Scheffe's companion indicates greater students performance using pictorial advance organizer (PAO)

➢ *Test of Hypothesis*

HOI: There is no significant difference between students Performance in Reading comprehension taught using the Advance organizer and those taught using the conventional Lecture method.

Table 3: Summary of ANOVA of students performance exposed to different teaching methods. ANOVA SCORES

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	**804.022**	**2**	**402.011**	**11.924**	**.000**
Within Groups	**2933.267**	**87**	**33.716**		
Total	**3737.289**	**89**			

The use of pictorial Advance Organizer and Graphics is Significant to students^ performance in reading comprehension. The scheffe's direction of significance shows that the Pictorial Advance Organizer is most potent in facilitating students performance in Reading Comprehension as shown in Figure 2

The t-test of Post delayed scores for equality of means shows t-calculated value of – 2.980 at Df (58) while the t critical value is 204. Since tcal < tcritical the null hypothesis is rejected. These is a significant difference in retention of concepts between students taught usinggraphics advance Organizer (GAO) and these taught using pictorial Advance Organizers (PAO)

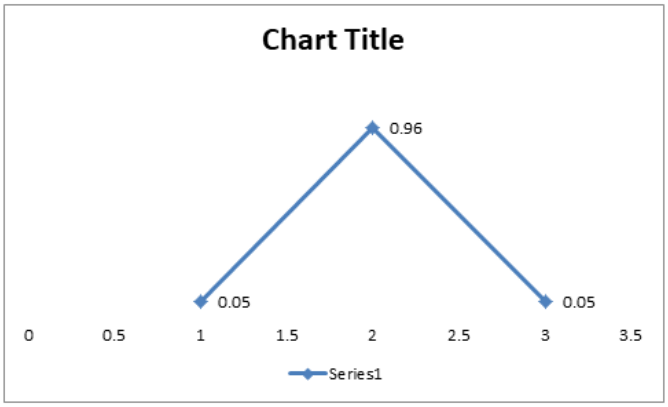

Fig 2: Mean differences of typology of teaching strategies (x-Graphics, y-Pictorial Z- lecture).

Ho2: There is no significant difference in retention of concepts between students taught using graphics advance organizer and those taught using pictorial Advance organ izerjn reading comprehension.

Table 3: Summary of t-test of post delayed

POSTDELAYSCORES F	Sig	t	Df	Sig. (2-Tailed)	Mean differences	Std. Error differences	95% confidence interval of the differences lower Upper	t-test for Equality of Means
Equal variances assumed	.317	-2.980	58	.004	-4.00000	1.34221	-6.66673	-1.31327
Equal variances not assumed	1.021	-2.980	56.693	.004	4.00000	1.34221	-6.8805	-1.31195

There is significant difference between students' post-delayed scores when taught using the Graphics and Pictorial Advance Organizer, However the post delayed score mean shows that those in group II (Pictorial Organizer) had a greater mean score than their counterparts in group I (Graphics).

- *Scores*

Advance organizer (graphics and pictorial) are potent in facilitating students' performance and retention of concepts in reading comprehension.

RECOMMENDATIONS

The following recommendations are made:

Teacher^ of English language as a second language should innovative teaching Advance organizers in teaching concepts in reading comprehension.

Textbook writers should present Pictorial organizers Graphic & Pictorial ensure clarity and comprehension of passage in reading the use of written, verbal, graphics and pictorial Advance Organizer (Ao) in dealing with abstraction and content comprehension is innovative. The graphics and pictorial AO's are easily designed and most facilitating in teaching English language comprehension at the secondary education level, hence should be used in teaching English language comprehension.

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