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Using Graphic Organizer and Supporting Sentences of Cause/effect Text Structure to Promote SS II Students' Paragraph Writing Development

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Abstract: Second language writing has been a challenging skill to L2 writers for decades. Previous studies have confirmed the value of using text structure to promote reading comprehension; there were limited studies on using text structures to develop writing skills. The aim of this study therefore is to investigate the influence of cause/effect text structure graphic organizer and supporting sentences on SS II students' paragraph writing skill. The design of this study was quasi-experimental. 122 SS II intact-class students from government senior secondary schools in Kumbotso local government participated in the study. 62 of these students were in the experimental group intact class while 60 in the control group intact class. Three stages of the lesson include modeling stage, semi-modeling stage, and free writing stage. Instructions for the experimental and the control groups spanned a period of 8 weeks. Data were analyzed using Pearson Product Moment Correlation Coefficient (PPMC) and regression analysis. The results show that both the graphic organizer and the supporting sentences significantly predicted the organization and logical flow of ideas/sentences using signal words. It is then recommended that further studies should be carried out to determine the predictive ability of using supporting sentences on organization and logical flow of ideas/sentences using signal words.

Keywords: Writing, Graphics Organizer, Supporting Sentences, Text Structure and Signal Words.

INTRODUCTION

Writing is one of the language skills that L2 learners have been grappling with for years. For instructional purposes, and for L2 learners to be able to cope up with the writing difficulties, numerous writing theories and approaches have been proposed, each one competing with the other. We have seen the reign of grammar translation method and/or traditional grammar, structural grammar, functional grammar, transformational generative grammar, communicative language teaching, etc. These grammar schools have had significant impacts on language teaching and learning, even though our primary and secondary schools students in Nigeria still face challenges in terms of use of English language skills. It appears that the most problematic area to learn is the use of writing skill, probably because it depends on vast amount of world knowledge and experience most often acquired through extensive reading. In particular, students face challenges of constructing and organizing sentences to form a coherent, unified, and comprehensible paragraph. One strategy that has worked well for some years now is the use of "text structure", though this approach has been used by many scholars to improve reading comprehension.

Text structure refers to organization of discourse information in manner that leads to comprehension (Teng, M. F., 2019). Text structures (elsewhere named top-level structures, see Meyer, *et al*., 1980:74; Amiri, F. and Puteh, M. (2017) are of different types: problem/solution, comparison, antecedent/consequent, description, and collection (including sequence). Ghorbani Shemshadsara, *et al*., (2019) posit that text structure comes with "structural elements" which signal direction of the text meaning. Such elements are termed signal words, connectives, or conjunctions which logically link propositions and sentences for easy comprehension. Readers who are aware of structural organization of facts have higher tendency to understand passages written with these signal words than those who lack knowledge of them Ghorbani Shemshadsara, *et al*., (2019). In other words, signal words are akin to road map that guides readers differentiate between superordinate and subordinate ideas, addition, contrariness, and opposition between propositions and sentences. Zarrati Z. at al. (2014) state two types of information writers/readers should be aware of. These are content schemata and formal/structural schemata. The content schemata refer to meaning-making process of the information or fact presented in the text. The formal/structural schemata refer to the knowledge of the organization of information or fact of the text. Most types of academic texts are expository in nature, and are organized with different formal/structural schemata to present information or fact. Thus, understanding the characteristics of texts is crucial for students whose objectives are geared toward content area learning.

The preoccupation of most text structure studies conducted in the past has been on promotion of reading comprehension (Davis, J. N., *et al*., 1988; Ghorbani Shemshadsara, *et al*., 2019; Zarrati Z. at

al., 2014; Wijekumar, *et al*., 2017; Turizo Ordonez, J. E., 2005; Nagasaka, A., 1992). This study will therefore concentrate attention on using text structure to improve learners' writing skills. Specifically, this study will use cause/effect text structure graphic organizer and supporting sentences to develop on the learners' paragraph writing skills. Each text structure has a graphic organizer which learners use to decompose and also to synthesize sentences of a paragraph. A graphic organizer is a skeletal framework with slots into which types of sentences of a paragraph are arranged numerically serially according to whether the sentence is a topic sentence, supporting sentences, or concluding sentence.

THE OBJECTIVES OF THE STUDY ARE:

1. To investigate the influence of identification of cause/effect graphic organizer on students' skills in paragraph writing.
2. To investigate how knowledge of cause/effect supporting sentences influences students' skills in paragraph writing.

The Research Questions:
1. How does skill of identification of cause/effect graphic organizer influence students' skills in paragraph writing?
2. How does knowledge of cause/effect supporting sentences influence students' skills in paragraph writing?

The Research Hypotheses:
1. There is no significant influence of skill of identification of cause/effect graphic organizer on students' skills in paragraph writing.
2. There is no significant influence of knowledge of cause/effect supporting sentences on students' skills in paragraph writing.

METHODOLOGY

The design of this study was quasi-experimental with pretest and posttest of experimental and control groups. 122 SS II intact-class students from government senior secondary schools in Kumbotso local government participated in the study. 62 of these students were in the experimental group intact class while 60 in the control group intact class. The participants in the experimental group were instructed to identify the graphic organizer associated with the cause/effect text structure and to organize supporting sentences to develop their cause/effect paragraphs. The control group was only taught how to write paragraph using traditional method of composition

writing. In this method, students were told, for example, to account for reasons behind student absenteeism to school.

Three stages of the lesson include modeling stage, semi-modeling stage, and free writing stage. In the modeling stage, students in groups use graphic organizer to decompose modeled text to discover for themselves the mechanisms good writer use when writing a paragraph. In the semi-modeling stage, students in groups collaborate to create topics of their interest, construct, and organize sentences using graphic organizer and appropriate signal words to write paragraphs. Students here do not analyse any text; they only apply the ideas they learned from the modeled text to solve their problems. In the free writing stage, students in groups collaborate to create topics of their interest, use signal words to organize sentences without the use of graphic organizer. Instructions for the experimental and the control groups will span a period of 8 weeks.

THEORETICAL FRAMEWORK

The study adopted sociocultural theory which emphasizes social interaction in terms of cooperative and collaborative learning students engaged in groups. The theory proposes two sides of learners' cognitive development: lower or actual mental development and potential or higher mental development (Scott & Palincsar, 2013). The lower mental development depends on what learner can do alone without the support of any experienced person. The higher mental development refers to knowledge or skill acquisition through the assistance of an experienced person in a social setting. Thus, sociocultural theory does not underestimate the role of cognitive theory in the development of learning, but it stresses that higher order learning takes place with the support of other more experienced people. For the higher order learning to take place more effectively, Vygotsky introduced concepts that are vital for cognitive development. These are internalization, mediation (scaffolding), and inner (private) speech, all within the domain of zone of proximal development (ZPD) (Verity, 2005).

One definition of ZPD (Lantolf, 2000:34) that is widely accepted is that it is "the distance in performance on a task between what a learner can do alone and what he or she can do when working with an expert". At this point, the transition from the social to the individual level requires application and manipulation of mediational tools (paper and pen, computer, calculator, language,

etc.) and more or less the inner speech to regulate the learner's thinking processes. Once the learner solves problem(s) independently of external adult assistance, internalization of experience has taken place, which was initially a socially-oriented activity (Mishra, 2013).

Internalization alone may be inadequate in the development of ZPD without mediation which is defined as "…an indirect activity which is not limited to assistance by other human beings but may come in form of socially construed semiotic artifacts like books, maps, and diagrams" (Villamil & de Guerrero, 2005:80). Also, Lantolf and Thorne (2009) stated that speaking can function as mediational artifact to control thinking. Hence, learning does not take place directing between the learner and the external world; the two are linked by mediational means, cultural tools or artifacts (or regulating roles) of symbolic (psychological) and physical tools and signs used for constructing knowledge and skills (Aimin, 2013; Duff, 2007;

Mukama, 2009; Peters, 2011; Thompson, 2017; Turuk, 2008).

As a form of mediational artifact, scaffolding is another valuable concept which is conceived from different angles by sociocultural scholars (Baleghizadeh, Memar, & Memar, 2011). Donato (2015) defined scaffolding as a "situation where a knowledgeable participant can create supportive conditions in which the novice can participate, and extend his/her current skills and knowledge to higher levels of competence" (pp. 40). Jeanne & Schumm (2006) defined it as "providing support for students in their language, and then gradually diminishing the support as students become more independent" (pp. 530). Verity (2005) defined scaffolding as "the cognitive support given to a novice learner to reduce the cognitive load of the task" (p. 4). The following figure represents the skeletal framework of the theory (Nelson & Kim, 2001).
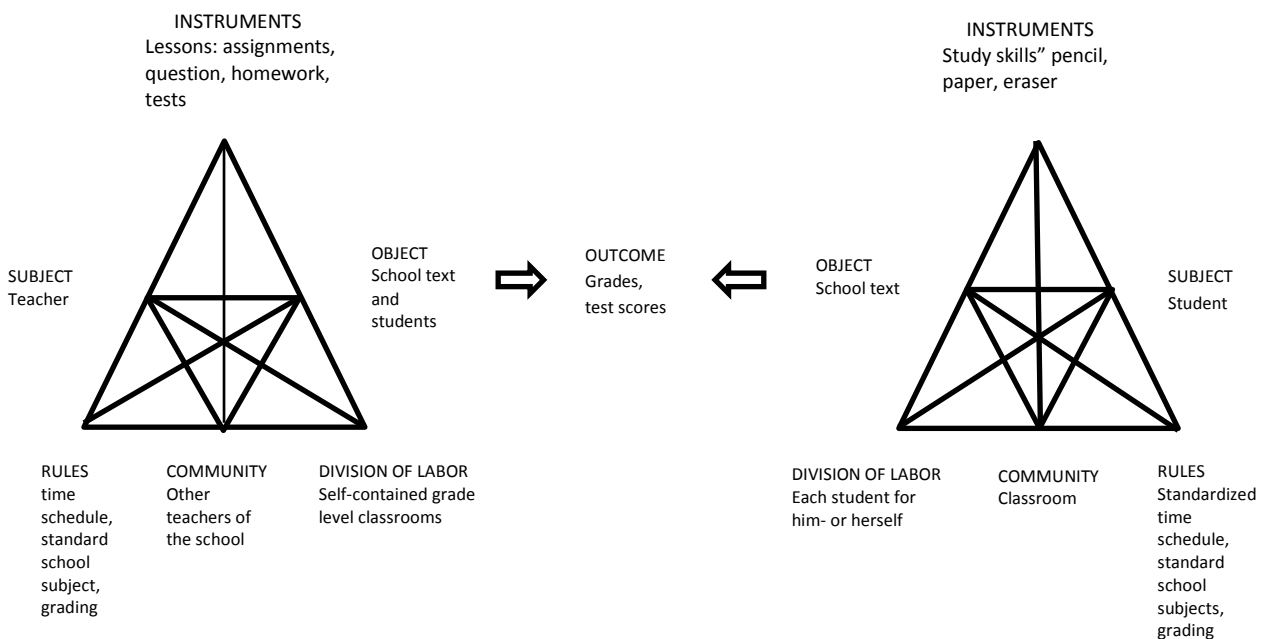
Adapted from Nelson, Charles P., Kim, Mi-Kyung (2001, p. 55)

Figure 1: Engestrom's Third Generation of Activity System

RESULTS

The posttest data of the experimental group were analyzed using multiple regression analysis in SPSS version 26. The results are given below:

Table 1.1: Evidence of Relationship between the Dependent and the Independent Variables

Model Summary					
Model	R	R Square	Adjusted R Square	Std Error of the Estimate	Sig. F Change
1	.770[a]	.593	.579	2.883	.000
a. Predictor: (Constant), using supporting sentences, identification of graphic organizer					
b. Dependent Variable: organization and logical flow of ideas/sentences using signal words					

It is clear from the table 1.1 of the model summary above that the multiple correlation between the independent variable (using supporting sentences and identification of graphic organizer) and the dependent variable (organization and logical flow of ideas/sentences, and using signal words) is very strong positively $r(60) = .770$, $p = .000$. The multiple correlation coefficient shows the combined strong relationship between the two independent variables and one dependent variable. The R Square of .593 indicates that 59.3% of variation in the dependent variable was accounted for by the two independent variables. Stating it differently, the model was good enough to make prediction of the dependent variable.

Table 1.2: Explanation of Variation in the Dependent Variable by ANOVA Regression Equation

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	715.080	2	357.540	43.021	.000
	Residual	490.339	59	8.311		
	Total	1205.419	61			

a. Dependent Variable: organization and logical flow of ideas/sentences using signal words
b. Predictors (Constant), using supporting sentences, identification of graphic organizer

From the ANOVA results of table 1.2 above, there is sufficient evidence to conclude that the slope of the regression equation is not equal to zero $F(2, 59) = 43.021$, $p = .000$. This suggests that the relationship between the dependent and the independent variables is strong to the extent that a change in the dependent variable was caused by a change in the two independent variables. This shows an underlying influence of the independent variables on the dependent variable.

Table 1.3: The Coefficient Table Showing Correlations and Relative Contribution of Each Independent Variable to the Prediction Equation

Coefficients[a]									
		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlation		
Model		B	Std Error	Beta			R	df	Sig. (1-tailed)
1	(Constant)	.141	1.756		.080	.936			
	Identification of graphic organizer	2.685	.781	.306	3.438	.001	.524	60	.000
	Using supporting sentences	1.114	.164	.605	6.798	.000	.715	60	.000

a. Dependent Variable: organization and logical flow of ideas/sentences using signal words

Table 1.1 indicates existence of strong positive correlation between the two independent variables and the dependent variable. And table 1.2 explains that the model is very good for prediction purposes. In table 1.3 above, the correlation coefficient and contribution of each individual independent variable to the dependent variable are explained. According the table, there is significant positive correlation between identification of graphic organizer and organization and logical flow of ideas, $r(60) = .524$, $p = .000$, and between using supporting sentences and organization and logical flow of ideas, $r(60) = .715$, $p = .000$. But

the coefficient Beta explains that the independent variable that has more influence on the dependent variable is using supporting sentences ($\beta = .605$, $p = .000$), and followed by identification of graphic organizer ($\beta = .306$, $p = .001$). From the table, it is apparent from the B-coefficient that for any one-unit increase in identification of graphic organizer, there will be 2.685 unit increase in organization and logical flow of ideas. And for any one-unit increase in using supporting sentences, there will be 1.114 unit increase in organization and logical flow of ideas.

DISCUSSION

The objective of this study was to investigate the influence of skill in identification of graphic organizer, and supporting sentences of cause/effect text structure on organization and logical flow of ideas/sentences using signal words among SS II senior secondary school students in Kumbotso local government area. The first research question was on whether there is influence of skill of identification of cause/effect graphic organizer on students' skills in paragraph writing. Identification of graphic organizer supported the students to study modeled paragraphs. From four different graphic and nongraphic organizers given, students were able to recognize and associate graphic organizer related to cause/effect text structure. The skill of identification of graphic organizer was based on the instruction students had on the differences between, particularly, the cause/effect graphic organizer and three nongraphic organizers. Thus, Knowledge of identification of graphic organizer had impact on the students' paragraph writing skills (organization and logical flow of ideas/sentences using signal words).

However, the corresponding first null hypothesis says that there is no significant influence of skill of identification of cause/effect graphic organizer on students' skills in paragraph writing. It was also found out that the skill of identification of graphic organizer impacted organization and logical flow of ideas/sentences using signal words. This impact was also as a result of instruction in identification of graphic organizer. The result of this study was in line with the findings of qualitative study of Mora-Gonzalez, *et al*., (1018) who discovered that webbing GOs (graphic organizers) assisted participants before and during writing processes.

Similarly, the second research question was on whether knowledge of cause/effect supporting sentences influence students' skills in paragraph writing. With the help of cause/effect graphic organizer and modeled paragraphs, students were able also to recognize that there were differences between the topic sentence, the supporting sentences, and the concluding sentence. They worked with paragraphs of different content structures, decomposing and synthesizing sentences to reform paragraphs to their original structures. On the free writing stage, students fell back on instruction they received to generate their own topics of interest, different sentence types, and ideas to develop unified and coherent paragraphs. These activities enabled students to develop skills of paragraph writing by organizing the supporting sentences using correct signal words to construct their paragraphs. Apparently, the result indicates influence of cause/effect supporting sentences on organization and logical flow of ideas/sentences. These findings are also supportive of those of Mora-Gonzalez, *et al*., (1018) who said that participants of their study expressed similar views of being able to develop well-organized paragraphs based on their own generation of sentences.

On the second hypothesis that there is no significant influence of knowledge of cause/effect supporting sentences on students' skills in paragraph writing, the results show that students' improvement in the writing skills was as a result of exposure to instruction in cause/effect supporting sentences. In groups, students were given opportunities to share ideas to solve common problems. This also agrees with the findings of Mora-Gonzalez, *et al*., (2018)

CONCLUSION

This study was carried out to measure prediction power of cause/effect text structure graphic organizer and using supporting sentences on organization and logical flow of ideas/sentences using signal words. 122 SS II students from Kumbotso Local Government Area of Kano State participated in the study. After exposing the students to instruction in identification of graphic organizer and using supporting sentences for eight (8) weeks, the results revealed significant findings. It was found that identification of graphic organizer and using supporting sentences had further studies were recommended to find out whether using graphic organizer could equally predict organization and logical flow of ideas/sentences using signal words.

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