**Original Research Article**

# Effect of Pre-reading Activities on Learners' Performance in Reading Comprehension in Kenyan Secondary Schools

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## Abstract

The goal of teaching the reading skill is to improve achievement for learners, yet the learners' reading comprehension test results in Kenya remain a challenge that requires appropriate intervention strategies. Previous studies have shown that pre-reading activities are facilitative pedagogic strategies that activate readers' prior knowledge, hence comprehension of new text. Thus, the purpose of this quasi-experimental study was to establish if pre-reading activities had a significant effect on reading comprehension performance in selected secondary schools in Kenya. The study objectives were to assess if there was a difference in performance between learners that used brainstorming and those that used pre-teaching vocabulary; determine if pre-teaching vocabulary and brainstorming have a significant effect on the performance of English as Second Language (ESL) learners in reading comprehension; and, compare the effect of pre-teaching vocabulary and brainstorming on achievement in reading comprehension to determine which of the two pre-reading activities affects the performance of learners in reading comprehension more significantly. The study was underpinned by Reading Comprehension as a Socio-cognitive Processing Model by Ruddell and Ruddell; and Reading Comprehension as Transactional-Socio-Psycholinguistic Model by Goodman. These models respectively propagate the view that through the influence of the language teacher on the readers, and the individual transactions between a reader and the text, meaning is constructed. The study used a quasi-experimental group design. Stratified and purposive sampling techniques were used to select 7 schools, 21 English second language classrooms and 21 language teachers. Data were collected using a reading comprehension test. These data were analyzed using one-way ANOVA. The results of ANOVA showed that at $p < .05$ value, both pre-teaching vocabulary and brainstorming had a significant effect on the performance of Kenyan English Second Language learners in reading comprehension tests, though pre-teaching vocabulary was comparatively more impactful than brainstorming. The study concluded that teachers need to pre-teach unfamiliar words and/or brainstorm topics in the new text since they are effective pre-reading pedagogic strategies. The study recommended that teacher trainers, relevant Ministry of Education agencies, language teachers, and learners vouch for the use of pre-reading activities as a pedagogic strategy for enhancing reading comprehension.

**Keywords**: pre-reading activities, pedagogic strategy, reading comprehension performance, prior knowledge.

## BACKGROUND OF THE STUDY

Pre-reading encompasses all the activities that are undertaken before one starts reading so as to increase his or her capacity to understand the material (to be read). In many cases, taking just a few minutes to learn more about what one is about to read can dramatically increase one's reading comprehension and retention. In this study, pre-reading activities were presented as a pedagogic strategy in English Language Teaching (ELT). Teachers in most reading lessons include a pre-reading activity which is expected to provide a bridge of sorts between a reader's knowledge base and the text. Most lesson frameworks consider pre-reading a preparatory step in which purpose setting and concept development are primary goals.

The pre-reading activities are aimed at activating background (prior) knowledge. In essence, using pre-reading activities in an English Second Language (ESL) classroom reflects a tacit acceptance of the role of background knowledge and the importance of building and activating a reader's knowledge before reading to learn. This is imperative since literature shows that ESL learners have several challenges to surmount and need more assistance in order to achieve

the desired linguistic and communicative competence. Incidentally, available literature indicates that comprehension increases when teachers use strategies that focus on teaching vocabulary before beginning instruction. This study therefore sought to establish the effect of pre-reading activities, such as vocabulary pre-teaching and brainstorming, on the performance of learners in reading comprehension tasks in the ESL classroom in selected schools in Kenya.

This study discussed pre-reading activities from a pedagogical rather than a content standpoint. The content areas are based on tasks in intensive and extensive reading (KIE, 2002). Pedagogically, pre-reading activities are used by language teachers to stimulate and activate background knowledge with a view to enhance comprehension of a text. This study distinguished between pre-reading and reading comprehension. While the former is a pedagogical strategy for introducing a reading lesson, the latter is a matter of content. Martinez (2009) posits that "The extent to which background knowledge affects reading has been widely explored in research on native speakers and on participants studying English as a foreign and as a second language. The results highlight that background knowledge has a prominent role in reading comprehension". Martinez (2009) adds that research is needed on how to improve reading comprehension from a pedagogical perspective. This study delved into this perspective with a specific, intensive focus on pre-teaching vocabulary and brainstorming as pedagogic strategies of introducing content for reading comprehension.

According to KIE (2002) now KICD, reading skill is handled as content at the level of reading comprehension or listening comprehension during intensive and/or extensive reading lessons. Pre-reading activities should be integrated into a "classroom ritual" which Wallace (1992) in de Sousa (2012) describes as a "three-phase-framework" that constitutes activities that "precede the presentation of the text, those that accompany it and those which follow it". These are pre-, while- and post-reading activities respectively.

This study, therefore, intended to determine if there is a significant relationship between the use of pre-reading activities and ESL learners' reading comprehension performance in the language classroom. This is in regard to the view that ESL learners face and need to overcome various linguistic and communicative problems. For instance, Gebhard in Athiemoolam and Kibui (2012) says that "in English as second language settings, there are fewer opportunities for learners to apply what they study in communicative situations outside the classroom since the only comprehensible English some of these learners hear and read is in the classroom."

Also, Gunning in Chandran and Shah (2019) notes that some of the reading problems for ESL learners include lack of reading process which means that the students do not know the processes that they go through during reading and tackling reading comprehension; lack of vocabulary which implies the students are not equipped with the needed list of vocabulary; lack of background knowledge as the students are not exposed to various life-related topics and do not have prior information about the topic; lack of reading purpose as they do not know the real reason of reading; and, lack of reading strategies as students are not aware of the strategies related to reading skills. Kasim and Raisha (2017) also posit that EFL students' biggest linguistic problems in comprehending English texts were semantic problems due to a lack of vocabulary. Citing Zuhra (2015); Tartila *et al.* (2012), and Hall (2012), Meylana (2019) also notes that students face reading comprehension problems due to their inability to understand meaning of words in passages. Yet, as Morrow (2003) notes, an effective comprehension and instructional programme includes vocabulary instruction, to enable readers to understand the complex relationships specified by words in sentences, paragraphs, and passages. Chowdhury and Ara (2021) point out that pre-teaching vocabulary is a technique employed by teachers to help their students create a vocabulary fluency for spontaneity and accuracy in understanding the text by making a connection between vocabulary and comprehension.

Pretorius and Klapwijk (2016), however, caution against the assumption that when learners experience difficulty with using reading as a tool for learning, then their comprehension problems are a product of limited language proficiency. This implies that lack of linguistic ability among ESL learners is a necessary factor but not sufficient to explain below-average academic performance in reading tests. The current study was premised on the assertion that pre-reading activities are critical in equipping learners with linguistic ability - and activating their background knowledge (schemata), thereby enhancing comprehension of text (reading comprehension passage). When reading comprehension is achieved, the reader (learner) should then be able to successfully handle comprehension tests which would be evidenced in the test scores (improved performance). To put the problem of this study into perspective, an overview of pre-reading activities and their implications on language teaching and learning was highlighted.

This study acknowledged that there are several pre-reading activities or strategies available for use by a language teacher in the ESL classroom. Meylana (2019) observes that techniques and strategies such as previewing, scanning and skimming enable the EFL students comprehend the reading text in the advanced reading course in Indonesia. However, according to the scope of the current study, only two pre-reading

activities were assessed: pre-teaching vocabulary and brainstorming. Wallace (1992) in de Sousa (2012) identifies two types of pre-reading activities: those which consist of questions to which the reader is required to find the answer in the text and, tasks focused on preparing the reader for likely linguistic difficulties in the text. Pre-teaching vocabulary and brainstorming fall in the latter group since they are among strategies that "encourage students to use prior knowledge, experiences, careful thought and evaluation to help them decide how to practically apply what they know to all reading situations" (Unal, 2017). Hence, they enable readers to navigate through likely challenges to comprehending the text. The performance of students in classrooms where these activities were used were separately compared with the control group to determine the effect of these pre-reading activities on ESL learners' performance in a reading comprehension test.

## STATEMENT OF THE PROBLEM

Reading is one of the fundamental skills in language learning and all English as second language (ESL) learners need to acquire it in order to master the language (Chandran and Shah, 2019). Citing Dawkins (2017) and Vacca (2005), Srisang and Everatt (2021) note that reading comprehension can play an important role in determining a student's academic performance. Nurmaharaeni *et al.* (2022) affirms that if students have excellent reading comprehension skills, they will be able to deal with comprehension challenges. ESL learners, however, face numerous problems that need effective strategies to overcome so as to improve reading comprehension. These problems include lack of motivation, low and/or lack of prior or background knowledge as students are not exposed to life-related topics; poor or lack of vocabulary; lack of reading purpose as they do not know the real reason of reading; and, lack of reading strategies related to reading skills (Nanda, 2020; Chandran and Shah, 2019). These reading difficulties decrease students' learning achievement; inhibit students' problem-solving skills; and inhibit students' future studies and careers (Nanda, 2020). Specifically, these problems undermine success of ESL leaners in reading comprehension.

Maingi (2015) found that knowledge of strategies and techniques was useful when engaging learners in reading; and that teachers need to teach learners how to select strategies appropriate for different reading activities which could be used to facilitate reading comprehension. Kulo, Odundo and Kibui (2019) established a statistically significant relationship between interactive reading strategies and achievement in reading skills. However, despite the effort put in teaching reading skills to improve achievement for learners, the examination results in reading comprehension show that this skill continues to be a challenge for ESL learners in Kenya (Athiemoolam and Kibui, 2012). Yet, as Rasinski in Morrow, Linda

and Michael (2003) notes, "the foundation for all instructional practice, regardless of one's theoretical or pragmatic orientation to reading, is the goal of improving reading achievement for all students." In fact KCSE annual reports for English Paper Two (101/2) reveal that learners' performance in English KCSE reading comprehension examinations is consistently below fifty percent (KNEC, 2014-2018). This confirms the findings of Karanja (2015) that "…poor academic performance was a result of poor reading abilities."

Therefore, this study identified and intended to address a knowledge gap. There was need for an investigation to explain why the continuous and routine practice of teaching the reading skill with a goal of improving performance for learners was at variance with the actual scores of secondary school learners in KCSE reading comprehension tests specifically, and the English subject in general. Many studies have also shown that the use of pre-reading activities as reading strategies activate background knowledge, one of the language components that plays a vital role in enhancing reading comprehension, particularly in a foreign language (Srisang & Everatt, 2021; Sutra & Tantra, 2020; Unal, 2017). Hence, this study specifically sought to determine if the use of pre-reading activities, specifically vocabulary pre-teaching and brainstorming, as pedagogic strategies yielded a significant improvement in performance of comprehension tests for ESL learners in Kenya.

## OBJECTIVES AND HYPOTHESES OF THE STUDY

The study addressed three objectives, thus; assess if there was a difference in performance between learners that used brainstorming and those that used pre-teaching vocabulary; determine if pre-teaching vocabulary and brainstorming had a significant effect on performance in reading comprehension.; and, compare the impact of pre-teaching vocabulary; and, brainstorming on achievement in reading comprehension so as to determine which of the two pre-reading activities had a more significant effect on performance of ESL learners in reading comprehension tasks. The study also tested the following three null hypotheses; a) *Ho*: there is no statistically significant difference between the performance of learners exposed to pre-teaching vocabulary and those that are not exposed to any pre-reading activities; b) *Ho*: there is no statistically significant difference between the performance of learners exposed to brainstorming and those that are not exposed to any pre-reading activities; and, c) *Ho*: there is no statistically significant difference between the performance of learners exposed to pre-teaching vocabulary and those that are exposed to brainstorming. The significance or alpha level was set at 0.05, a value established by Fisher in 1925 and still relevant today.

**Theoretical Framework**

This study adopted the schema theory and its attendant models, namely; Reading Comprehension as a Socio-Cognitive processing model and Reading Comprehension as a Transactional Socio-Psycholinguistic model. These models take a constructivist view of reading comprehension. Reading comprehension as a Socio-cognitive processing model (Ruddell & Ruddell, 1994) posits that reading comprehension involves constructing meaning through negotiation or interactions between readers, text and the social context in which reading is taking place (language classroom). It further holds that the schema for text meanings, academic tasks, sources of authority (which reside within the text, the reader, the teacher, the classroom community or some interaction of these), and the socio-cultural settings are all brought to the negotiation task. The teacher orchestrates the instructional setting since she or he is knowledgeable about teaching and learning strategies as well as the world.

On the other hand, Reading Comprehension as a Transactional Socio-Psycholinguistic model (Goodman, 1994) highlights the view that interaction between knowledge from past experience (background knowledge) and encountered discourse or text is necessary for constructing meaning. This model holds the view that texts are constructed by authors to be comprehended by readers, and that the meaning is in the author and the reader. The meaning is represented by a writer in a text and constructed from a text by a reader. The classroom is a social context within which negotiations amongst learners or between learners and teachers (and/or reading materials) take place with the aim of achieving reading comprehension.

On the basis of the study findings, the study proposes a pedagogic schema-based model appropriate for teaching reading comprehension in ESL classrooms. The suggested model is expected to clarify that during the encounter between the reader and a text, comprehension is readily achieved if the reader's past experiences are consciously triggered using appropriate schema-activating pre-reading activities. In the context of this study, the focus was placed on pre-teaching vocabulary and brainstorming to exemplify such schema-activating activities applicable in the language classroom during reading comprehension lessons.

## RESEARCH DESIGN AND METHODOLOGY

The schema theory and its attendant models had a bearing on the ontological and epistemological position taken by the study. This study took a relativist ontological perspective in view of the theory and established findings. In this perspective, reality is constructed within the human mind such that no one 'true' reality exists; instead, reality is relative to how individuals experience it at any given time and place. There were differences in ESL language classroom contexts, individual differences among learners and teachers that might have resulted in the differences in performance between the two experimental groups on the one hand, and between the experimental and control groups on the other hand. In terms of the epistemological perspective, this study applied the constructionist view. Crotty (2003) says that constructionist epistemology is "the view that all knowledge and therefore all meaningful reality as such is contingent upon human practices, being constructed in and out of interaction between human beings and their world and developed and transmitted within an essentially social context". This view holds that 'truth' or meaning arises in and outside our engagement with the realities of our world. This helped the study to generate contextual understanding of the study problem and to ensure that the kinds of knowledge generated were adequate and legitimate.

It has been argued that "in order to apply a sampling technique, it is necessary to define the population (also called the target population, universe or sampling frame) from which the sample is to be drawn" (Blaikie, 2003). Kakamega Central Sub County had a total of 28 secondary schools at the time of data collection: 23 were public and 5 were private. This comprised the target population. The 23 public schools constituted the sampling frame for this study and comprised a variety of schools that represented almost all the categories of public schools in Kenya. The sample was derived from these public schools for purposes of homogeneity.

The unit of analysis in this study was Form Two level secondary school students in Kenya. On average, the schools in the study area had 45 students in each class (stream), according to statistics at the office of the County Director of Education (CDE), Kakamega. The study area had categories of public schools that represented the various types of schools in the country. Table 1 shows the type and number of schools in the study area. There were no schools in the extra county category within Lurambi Sub County at the time of data collection.

This study used stratified and purposive sampling techniques. The study focused on students in the twenty-three (23) public secondary schools in the study area for the purpose of homogeneity. Borg and Gall (2003) suggests that 30 % of the total population constitutes a representative sample. So the study purposively selected seven (7) schools being approximately 30% of all the public secondary schools in the study area; three (3) classrooms per school, being two experimental and one control group. Wanjohi (2014) says that the main objective of purposive sampling is to arrive at a sample that can adequately answer the research objectives. The sample was proportionately assigned into three strata: boys', girls' and mixed schools. From the data in Table 1, one (1)

boys', two (2) girls' and four (4) mixed schools were purposively selected by way of proportional allocation (Kothari, 2003). The study therefore purposively sampled a total of 7 schools, 21 language teachers and 21 English second language classrooms.

**Table 1: Categories of Schools in Kakamega Central Sub County**

| Classification by Status | Classification by Gender | | | |
|---|---|---|---|---|
| | Boys | Girls | Mixed | Total |
| National | 1 | 0 | 0 | 1 |
| Extra County | 0 | 0 | 0 | 0 |
| County | 1 | 3 | 0 | 4 |
| Sub County | 0 | 3 | 15 | 18 |
| Private | 0 | 1 | 4 | 5 |
| **Total** | **2** | **7** | **19** | **28** |

Source: Kakamega County Education Office (2019)

The study made use of a researcher-made comprehension test to collect quantitative data. Ary, Jacobs and Sorensen (2010) say that "the advantage of researcher-made test is that it can be tailored to be content specific; that is, it will match more closely to the content that was covered in the classroom or in the research study." This kind of test may focus sufficiently on particular skills the researcher wishes to measure (Ary, Jacobs & Sorensen, 2010). It is argued that "In tests, researchers have at their disposal a powerful method of data collection, an impressive array of tests for gathering data of a numerical rather than verbal kind" (Cohen, Manion & Morrison, 2007). According to the APA as cited in Cohen *et al*., (2007), "the tests devised by the researcher are an alternative to published tests that do not demonstrate fitness for purpose." It is further argued that such "home-grown" tests will be tailored to the local and institutional context very tightly, that is, the purposes, objectives and content of the test will be deliberately fitted to the specific needs of the researcher in a specific, given context (Cohen *et al.*, 2007). In any case, teachers test what they have derived from the syllabus, schemed or planned for and taught.

Using intense document analysis, several reading materials were analysed for appropriateness using content analysis procedures. The revised English language syllabus in Kenya (GoK, 2006) suggests that teachers should cover contemporary and emerging issues during extensive reading lessons. Such emerging topics include environment, health, culture, security, technology, gender etcetera. A lot of these topics can be accessed in the students' course books as well as other sources such as newspaper columns and magazines. To avoid halo effect arising from students' prior exposure to a passage in the learners' course books, and to enhance validity of the reading test, the researcher looked at a variety of alternative reading materials. Therefore, in consultation with the study supervisors, the researcher selected an article titled *Reflections on a more gender equal society* adapted from the Saturday Nation Newspaper, December 22, 2018. It pertained the gender issue, one of the contemporary topics suggested by GoK (2006). The researcher administered the reading comprehension test to both the experimental and control groups. Quantitative (parametric) data collected from the learners' scores were used to test the research hypotheses.

This study applied the quasi-experimental research design. The researcher selected two experimental groups and one control group from each participating school. A treatment by way of vocabulary pre-teaching and brainstorming activities was administered to the experimental groups. Cohen, Manion and Morrison (2018) say that "The true experiment can also be conducted with one control group and two or more experimental groups".

A pilot study was conducted to test the validity and reliability of the research instrument. Piloting is the process whereby researchers try out the research techniques and methods which they have in mind, see how the techniques work in practice, and, if necessary, modify their plans accordingly (Blaxter, Hughes & Tight, 2010). Following the pilot study in a location other than the study area, a few changes were made on the instrument. The effect of the changes was an improved content validity. The study minimized threats to validity by addressing Hawthorne effect during data collection; choosing appropriate methodology, selecting appropriate sample and instruments at the design stage; avoiding selective use of data, as well as Type I and Type II errors during data analysis; and, making claims that can be sustained by the data during reporting stage (Cohen *et al.,* 2018).

Reliability is essentially a synonym for dependability, consistency and replicability over time, over instruments and over groups of respondents (Cohen *et al.,* 2007). The study achieved this reliability through a split-half method during the pilot study, "which involves splitting the test in half (odds and evens) and correlating scores on one half of the test with scores on the other half of the test. The correlation between the two sets of scores is used to estimate the reliability of the instrument" (Wanjohi, 2014).

Cronbach's alpha reliability coefficient was computed with results as shown in table 2.

**Table 2: Reliability Statistics**

| Cronbach's Alpha | Part 1 | Value | .708 |
|---|---|---|---|
| | | N of Items | 5[a] |
| | Part 2 | Value | .700 |
| | | N of Items | 5[b] |
| | Total N of Items | | 10 |
| Correlation Between Forms | | | **.838** |
| Spearman-Brown Coefficient | Equal Length | | .912 |
| | Unequal Length | | .912 |
| Guttman Split-Half Coefficient | | | .910 |

Source: SPSS Computation

**Note:**
a. The items are: QTN1, QTN3, QTN5, QTN7, and QTN9.
b. The items are: QTN2, QTN4, QTN6, QTN8, and QTN10.

The closer Cronbach's alpha coefficient is to 1.0 the greater the reliability of items in the instrument. George and Mallery in Wanjohi (2014, p. 85) propose the following rule of thumb is provided: "_> .9 – Excellent; _> .8 – Good; _> .7 - Acceptable; _> .6 - Questionable; _> .5 - Poor, and _< .5 -Unacceptable." So with a computed Cronbach Alpha of 8.38, the test was determined to be a reliable tool for this study.

Ader and Mellenberg (2018) say that data analysis is a process of inspecting, cleaning, transforming and modelling data with the goal of underlining essential information, suggesting conclusions, and supporting decision making. Parametric (numeric) data were collected from comprehension test results for both experimental and control groups. These data were cleaned by doing quantitative content analysis to remove ambiguous (unacceptable) elements. Then, coding of data was done to translate the collected data into values suitable for computer entry to run SPSS program (Coolican, 1994).

Thereafter, the data were analysed by running One-Way Analysis of Variance (ANOVA) using SPSS version 20.0. This statistical test was ideal due to the normal distribution of the population, each case in the sample being independent of each other. The groups that were compared were nominal, while the comparisons were made at interval and ratio scales. Also, the data was normally distributed, with the sets of scores having approximately equal variances (Cohen, Manion & Morrison, 2007). The null hypotheses were tested by determining the F-statistic at 0.05 significance level. The scores for students in each one of the experimental groups and the control group were compared to determine the difference in mean performance of ESL learners in the reading test.

# FINDINGS

The findings highlighted Performance of Learners in the Reading Comprehension Test and were presented in accordance with the study objectives. The study purposively selected two treatment classrooms (pre teaching vocabulary, brainstorming) and one control language classroom in each of the seven schools sampled for this study. The researcher then issued and discussed the guidelines with ESL teachers in the experimental classrooms on how to conduct pre-teaching vocabulary and brainstorming in language classrooms. Teachers in the control groups did not use any pre-reading activities (treatment). A total of 852 learners from seven schools and 21 classrooms, comprising the experimental and control classrooms, were subjected to the same reading comprehension test. The aim of this test was to enable the researcher compare the results of the test for all the groups so as to determine the effect of the given pre-reading activities on performance of learners in reading comprehension.

The first objective of this study was to *assess if there was a difference in performance between learners that used pre-teaching vocabulary and those that used brainstorming*. A One-Way Analysis of Variance (ANOVA) was conducted to compare effect of pre-reading activities on performance of learners in pre-teaching vocabulary, brainstorming and no pre-reading activity classrooms. Table 3 contain the descriptive analysis for the post hoc comparison using the Tukey HSD.

The results in Table 3 reveal that at $p < .05$ level for the dependent variable (performance in reading comprehension test) the three separate independent variables (pre-teaching vocabulary, brainstorming and control) posted different mean scores. The mean score for pre-teaching vocabulary (M=10.31, SD= 4.46) was significantly different from the no pre reading activity (control) group (M= 8.50, SD= 4.30). The mean score for brainstorming (M=9.39, SD= 4.53) was also significantly different from the pre-teaching vocabulary group and the no pre-reading activity group.

**Table 3: Differences in Comprehension Test Results**

| Activity | N | Mean | Std. Deviation | Std. Error | 95% Confidence Interval for Mean | | Minimum | Maximum |
|---|---|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound | | |
| Pre-teaching Vocabulary | 284 | 10.3134 | 4.45833 | .26455 | 9.7926 | 10.8341 | .00 | 23.00 |
| Brainstorming | 284 | 9.3873 | 4.52765 | .26867 | 8.8585 | 9.9162 | .00 | 22.00 |
| No pre-reading Activity/control | 284 | 8.4965 | 4.30178 | .25526 | 7.9940 | 8.9989 | .00 | 23.00 |
| Total | 852 | 9.3991 | 4.48687 | .15372 | 9.0974 | 9.7008 | .00 | 23.00 |

It is evident from this finding that there is a difference in performance of learners in reading comprehension between Kenyan ESL classrooms where teachers use pre teaching vocabulary and brainstorming. In view of these findings, it is important for teachers to know that their learners may perform differently in comprehension tasks when exposed to different pre-reading activities as a pedagogical strategy. As such, this study reinforced the assertion by Hedge (2000) that language teachers may select or combine from a repertoire of activity types during pre-reading stage.

The second objective of this study was to *determine if pre-teaching vocabulary and brainstorming had a significant effect on performance in reading comprehension*. The Analysis of variance (ANOVA) was conducted using SPSS version 20.0 and the results are as shown in Table 4. Comprehension Test Results is the dependent variable (DV).

**Table 4: ANOVA**

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Between Groups | 468.819 | 2 | 234.410 | 11.943 | .000 |
| Within Groups | 16663.500 | 849 | 19.627 | | |
| Total | 17132.319 | 851 | | | |

Table 4 (ANOVA) shows that pre-reading activities had a significant effect on performance of learners in the comprehension test at p< .05 level for the three groups [F (2, 849) =11.94, p = .000]. Since a statistically significant effect of pre-reading activities on performance in reading comprehension was generally established from the Analysis of variance, the researcher then conducted a Tukey post hoc test on SPSS to determine with precision where the significance exists and compare one pre-reading activity to the other (see Table 5). The dependent variable (DV) was the Comprehension Test Results.

**Table 5: Tukey Post Hoc Test for Multiple Comparisons**

| (I) Type of pre reading Activity | (J) Type of pre reading Activity | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| Pre-teaching Vocabulary | Brainstorming | .92606* | .37178 | .035 | .0532 | 1.7989 |
| | No Activity | 1.81690* | .37178 | .000 | .9440 | 2.6898 |
| Brainstorming | Pre-teaching | -.92606* | .37178 | .035 | -1.7989 | -.0532 |
| | No Activity | .89085* | .37178 | .044 | .0180 | 1.7637 |
| No Pre reading Activity | Pre-teaching | -1.81690* | .37178 | .000 | -2.6898 | -.9440 |
| | Brainstorming | -.89085* | .37178 | .044 | -1.7637 | -.0180 |

*The mean difference is significant at p< 0.05 level.

Table 5 provides results of the post hoc test showing detailed multiple comparisons of the means for individual groups in the study. The results of all the mean differences between the three groups (Pre-teaching vocabulary, Brainstorming and No pre reading activity) are marked with * (asterisk) to indicate that the mean difference is significant at p< 0.05 level.

From the results of ANOVA (Table 4) and the Tukey post hoc test for multiple comparisons (Table 5), this study reported that at p< .05 value, pre-teaching vocabulary sessions had a significant effect on performance of Kenyan ESL learners in reading comprehension tests [F(2, 849) = 11.94, p = .000]. As such, this study rejected the null hypothesis which stated that there is no statistically significant difference between the performance of learners exposed to pre-teaching vocabulary and those that are not exposed to any pre-reading activities. The study findings also revealed that at p< .05 value, brainstorming sessions had a significant effect on the performance of Kenyan ESL learners in reading comprehension tests [F (2, 849) = 11.94, p = .044]. In view of this finding, this study rejected the null hypothesis which stated that there is no

statistically significant difference between the performance of learners exposed to brainstorming and those that are not exposed to any pre-reading activities.

The study therefore found that both pre-teaching vocabulary and brainstorming had a significant effect on performance of ESL learners in reading comprehension tests. Though these findings were based on ESL reading classrooms in Kenya, they agree, correspond with and even expound findings of earlier studies on L1 learners which indicate that comprehension increases when teachers use strategies that focus on teaching vocabulary before beginning instruction (Connor & Lagares, 2007; McClanahan, 2009; McCollin et al., 2010; Minarik and Lintner, 2011; Vaughn et al., 2013 Swanson, et al., 2015; Unal, 2017; Meylana, 2019; Srisang & Everatt, 2021). The current study also agrees with Ghabanchi and Behrooznia (2014) that brainstorming is an effective strategy in teaching English as a foreign language (FL), and has a significant role in improving the participants' reading comprehension.

In view of these findings, the study therefore has addressed the knowledge gap established between the apparent routine practice of teaching and learning of reading comprehension in ESL classrooms and the performance of learners in reading comprehension examination in Kenya. ESL learners in Kenya are usually exposed to a variety of reading texts in language classrooms, which as Headley and Dunston (2000) argue, develop these learners' background knowledge. Also, intensive and extensive reading are adequately provided for by the English language syllabus in Kenya (KIE, 2002) and practised by teachers and learners with a view to enhance achievement of learners in reading comprehension. However, KCSE annual reports and specifically, KCSE results analyses for Kakamega Central Sub County in Kakamega, Kenya have revealed that learners continue to score below fifty percent (50%) in reading comprehension (KNEC, 2014 – 2019). The findings of this study therefore indicate that language teachers in ESL classrooms in Kenya need to embrace and appropriately plan for the use of pre-reading activities as pedagogical strategies to improve performance of their learners in reading comprehension.

The third objective of the study was to *compare the impact of pre-teaching vocabulary and brainstorming on achievement in reading comprehension so as to determine which of the two pre-reading activities had a more significant effect on performance of ESL learners in reading comprehension tasks*. In this study, the two ESL classrooms where learners used pre-teaching vocabulary and brainstorming were separately compared with the classroom without any pre-reading activities. The control group (classroom without any pre reading Activities) was useful for determining and comparing the effect of two pre reading activities in the study.

Therefore, considering the findings for ANOVA and Tukey post hoc test for multiple comparisons (see Tables 4 and 5), a comparison was made between pre-teaching vocabulary and brainstorming vis-à-vis the control group. The findings in these tables revealed that at p< .05 level, pre-teaching vocabulary had a more significant effect [F (2, 849) = 11.94, p = .000] as compared to brainstorming (F (2, 849) = 11.94, p = .035].

The results suggest that while both pre-teaching and brainstorming had a significant effect on the performance of Kenyan ESL learners in a reading comprehension test, pre-teaching vocabulary had a more significant impact than brainstorming. This means that given a specific reading comprehension passage, ESL learners in Kenya who were pre-taught selected vocabulary from the passage before reading it would perform better on the same test than those who brainstormed specific topics on the passage. On the basis of this crucial finding, this study rejected the null hypothesis which stated that there is no statistically significant difference between the performance of learners exposed to pre-teaching vocabulary and those that are exposed to brainstorming. This study, to an extent, corroborates other studies which found that vocabulary knowledge was related to reading comprehension more strongly than grammatical knowledge (Srisang & Everatt, 2021).

Since reading comprehension plays an important role in determining a student's academic performance and reading achievement for all learners (Srisang & Everatt, 2021; Morrow, Linda & Michael, 2003), the findings of this study indicate that the many schema-arousing pre-reading activities (Yusuf, 2010; Unal, 2017; Srisang & Everatt, 2021) should be carefully selected, and planned for teaching reading comprehension in ESL classrooms so as to enhance performance of Kenyan ESL learners in reading comprehension tasks.

## CONCLUSIONS AND RECOMMENDATIONS
In view of the findings, the study made a number of conclusions. First, there was a difference in performance of ESL learners in reading comprehension among the experimental and control groups. Second, pre-reading activities had a significant effect on performance of learners in reading comprehension tasks. Third, pre-teaching vocabulary was found a more impactful pedagogic strategy than brainstorming. Therefore, given a common reading comprehension test, ESL learners in Kenya that are exposed to vocabulary pre-teaching sessions would perform better than those who are exposed to brainstorming sessions.

In light of the findings and conclusions, the study made recommendations to language teachers, curriculum developers, language trainers and the Ministry of Education. To start with, language teachers

should teach new or difficult words that ESL learners are likely to encounter in reading texts during pre-teaching sessions; identify topics, questions and/or vocabularies which are likely stimulate learners' background knowledge. On their part, the Kenya Institute of Curriculum Development should adopt and further develop the guidelines for pre-teaching vocabulary and brainstorming proposed in this study as a benchmark for the design and use of any other pre-reading activities in the language classrooms in Kenya. KICD should also incorporate pre-reading into the new coding syllabus adopted by KICD for digital literacy to enable learners comprehend the current heavily computerized and digital world. Then, universities and other teacher development institutions should encourage more research and dissemination of findings on pre-reading as a strategy for achieving reading comprehension. Finally, the Ministry of Education in Kenya needs to ensure that language course books presented from publishers for approval are thoroughly scrutinized in terms of their treatment of pre-reading as an emerging pedagogical strategy for all reading comprehension units.

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