

EFFECT OF BUZZ DISCUSSION GROUP STRATEGY ON SENIOR SECONDARY TWO STUDENTS' PERFORMANCE IN SUMMARY WRITING IN DELTA STATE, NIGERIA

Ndur, Mbapinen Priscilla¹ & Prof. Chinwe Anthonia Muodumogu²

¹Department of Primary Education, School of Early Childhood Care, Primary, Adult and Non-Formal Education Federal College of Education (Technical), Asaba Delta State. Email: ndurmbapinen@gmail.com

²Department of Arts Education, Faculty of Education, Benue State University, Makurdi

Abstract

This study investigated effect of Buzz Discussion Strategy on senior secondary two students' performance in Summary Writing in Oshimili Local Government Area, Delta State, Nigeria. The study was necessitated by the poor performance of students in summary writing in both internal and external examinations over the years. The study was guided by two research questions while two hypotheses were formulated and tested. The design was a quasi-experimental, pretest, posttest non-randomized equivalent group. Purposive sampling was used to sample 179 (79 males, 100 females) senior secondary two students in three classes from three schools in Oshimili Local Government Area, Delta State. The instrument for data collection was Summary Writing Performance Test (SWPT) developed by the researcher and validated by three experts. The SWPT was subjected to trial testing and its reliability coefficient value was 0.95 using Kuder-Richardson (K-R21). Data analysis was done using mean, standard deviation, bar chart and line plots to answer research questions while hypotheses were tested at 0.05 level of significance using Analysis of Covariance (ANCOVA). It was found that there was significant difference in the performance of students taught summary writing using buzz group strategy and those with the conventional method ($p > 0.05$). There was no significant difference in the performance of male and female students taught summary writing with buzz group strategy ($p < 0.05$). It was therefore recommended that teachers should use buzz group strategy to improve the performance of students in summary writing and that teachers should encourage interaction among students in the classroom. It is also recommended that school authorities should organize school-based seminars that will expose teachers to strategies that may demystify the teaching of summary writing.

Introduction

Writing is one of the communication skills and the fourth in the row among the four language skills (listening, speaking reading and writing). It is an important skill for effective education and communication that must be developed at an appropriate age. It does not come naturally as speaking. It is a school exercise that is continuous and cannot be neglected in the system. Writing helps one to consider one's thoughts, and to analyze feeling because it gives time to do so (Efrilant, 2010). Writing is considered as one of the most important skills, particularly in any academic setting. To buttress this fact Muodumogu and Orbura (2019) maintain that writing is a productive language skill that is very important to education. The authors state further that without writing skills, formal teaching and learning cannot take place. This means that it is through writing that communication takes place between teachers and learners.

Although, writing can be an enjoyable, creative, and cathartic experience, the way ESL English as a second language (ESL) writing is taught and learned in our classrooms has led to negative perceptions among learners who view it as a skill they like the least (Lin & Maarof, 2013). In another view, Tagor and Sondang (2018) state that writing is complex and sometimes difficult to teach, requiring mastery not only of grammatical and rhetorical devices but also conceptual and judgmental elements. This means writing should be practiced and learned gradually to enable students master it well. However, many assume it is a difficult task to do because of its complexity. Such assumption appears to be true because it really requires many efforts, much time, and attention. It is imperative that students learn to write effectively in order to succeed in school.

Among the different genres of writing students must undertake during their academic career, summary writing appears to be one of the most difficult to master. It is often seen as a complex activity that can impose an overwhelming cognitive load on students in academic setting (Wichadee, 2010). Summary writing is a demonstration of one's level of comprehension of information and ideas from a given text. It is one's ability to restate in one's own words the content of a passage in which the focus is usually on the central ideas and main points in the passage. Olatunji (2011) describes summary writing as the condensed form of comprehension. The author explains that it is an exercise in which one is required to reproduce what one has decoded in few as words as possible.

Summary writing has been recognized as a highly important and essential skill not only in language learning, but also in most areas of students' academic career (Lin & Maarof, 2013). The role of summary writing in language learning and other learning skills shows that it is a core element in construction of other necessary skills used throughout one's academic endeavour. This implies that when a student is successful in summary writing he/she would be successful in every other academic endeavour. In a similar vein Bogamuwa (2011) asserts that summary writing is an important strategy that is essential in education as students are often expected to consult a variety of texts to enable them complete assignment, supplement their lecture notes, or when studying for examination.

It is a known fact that at the secondary level as well as in many academic disciplines, summary writing plays a vital role since students need to consistently condense information from lectures, journals, textbooks, and so on in order to be able to write certain assignments and to be successful in their academic career (Efriliant, 2010). Despite the role summary writing plays in students' academic career and the educational system, students' performance in the skill has shown a fluctuating decline in the Senior Secondary Certificate Examination (SSCE) in Nigeria. There is always a problem of effective summary writing which leads to poor performance in the skill. The West African Examination Council (WAEC) Chief Examiners' Report reported that many candidates failed summary writing examination because they did not understand the contents of the set passages and the questions on them.

This implies that many copied portions of the passages verbatim as answers to questions on summary (Ogundare, 2015). Most students do not have the capacity of presenting the answers for summary questions in their own words instead they engage mindless lifting or inappropriate presentation of original ideas leading to ineffectiveness in the skill. This could be as a result of the neglect of the skill by teachers who assume that it is a self-learned skill involving reading and writing and therefore cannot be taught.

The difficulties faced by the students while writing a summary include comprehending the text, determining main idea, using own words, making sentences, determine key supporting details, and omitting unimportant words or information (Efriliant, 2010). This might also be attributed to the fact that many teachers wrongly assume that students know how to summarise since they can read and write and so do not teach them how to summarise (Wichadee, 2010). This is

further corroborated by Mokeddem and Houcine (2016) who also observe that many teachers take the teaching of summary writing for granted because they think it is an easy task of reading and writing. Thus, when explicitly taught, students can make a lot of progress in it.

In the light of the foregoing, it could be deduced that the teaching methods employed by English Language teachers in teaching summary writing have not been effective. There is a general agreement that students' performance in summary writing could be traced to inappropriate methods of teaching by teachers. Of great concern to the researcher is that summary writing teachers mostly use the lecture method (read and write) for imparting information, under which the teacher is usually the expositor and drill master, while the learner remains the listener. This seems to have failed to develop the summary skills of students. Thus, it has become apparent that the lecture method which is currently the predominant teaching approach in Nigerian secondary schools is inappropriate and ineffective for enhancing students' summary writing skills. It is expected that English Language teachers would be fully grounded in the skill to enable them to actualize the objective of summary writing.

To remedy summary writing challenges, there have been several interactive and collaborative strategies developed by language experts that could be used to alleviate the challenges learners face while answering summary questions. One of such strategies is the 'Buzz discussion group strategy'. This strategy was first used by Donald Philips at the Michigan State University in 1967. It is called buzz group because when students discuss, they make low sounds. This strategy allows students to discuss a given question, problem, or an issue within a specified time with the aim of proffering solution. This means that a buzz group is a flexible group that could be adapted in teaching interactive listening in order to aid summary writing with clearly established rules and regulations.

The buzz discussion strategy is carried out by dividing the class into (2-15) discussion groups depending on the size of the class. Teacher allows groups select group leaders to head their groups, timekeepers, and recorders to record group discussions. In this strategy, each group selects a student to read aloud the passage as the teacher directs, then reading is done paragraph by paragraph while others listen attentively. After each paragraph, students from the various groups discuss the main points of every paragraph. When they discuss and come up with answers the recorders record them down. At the end of reading, students in all the groups reconvene to discuss the written points with the leaders of their groups to arrive at the main point for each paragraph.

The main idea of each paragraph must not be more than fifteen words (each paragraph must be reduced to fifteen words). One mark will be subtracted for irrelevant words or mindless lifting. Each group submits their points to the teacher who looks at the work with the entire class and pronounces the winning group. The group with the highest score is then declared winner and given a standing ovation. It is, therefore, hoped that when this strategy is applied in the classroom, it would minimize the idea of copying verbatim but instead students will listen selectively to identify main ideas of a given passage.

Gender has been regarded as an affective factor that plays a specific role and influences second language acquisition. There are some differences between the language of men and that of women, and no education or social conditioning can wholly erase these differences. Xiong (2010) observes that females are more attentive than boys in language issues and are more internally motivated to learn language than males. This is corroborated by Murphy (2010) that girls achieve high overall means on second/foreign language proficiency tests than boys. In a similar vein, Zoghi, Kazemi and Kalani (2013) maintain that while both boys and girls have improved their performances, girls achieved higher marks than boys in English as a foreign Language learning.

. Consequently, they perform better than boys in language related problems. This observation shows that students' performance in summary writing may be significantly influenced by gender. It is against this background that this study investigated the effect of buzz group discussion strategy on senior secondary school two students' performance in summary writing. The study also sought to determine if the effect of the strategy on students' performance in summary writing would differ according to gender.

Statement of the Problem

Summary writing is an essential component of a student's academic career particularly at the secondary school level. This is why students' knowledge of the skill is tested at the Senior Secondary School Certificate Examinations. However, it has been observed over the years that performance of students in summary writing has been poor. Students are constantly faced with the challenge of how to go about a good summary writing. There is always a problem of mindless lifting or inappropriate presentation of original ideas leading to inability to effectively summarise. This is often attributed to students' inability to effectively identify main ideas, topic sentences, comprehend text and use their own words. Students also find it difficult to condense information from a longer passage. Consequently, they perform poorly in both internal and external examinations.

The Senior Secondary Examination (SSCE) result shows that 58% of students who took the examination did not perform well in English Language particularly summary writing (West African Examinations Chief Examiner's Report, 2018). Factors responsible for this anomaly could be teachers' inability to utilize the appropriate strategies or wrong application of the available teaching strategies that could enhance students' summary writing skills.

Research indicates that when students are asked to summarise a lengthy text, they tend to copy verbatim from the given text which is plagiarism (Oladotun, 2020). Also, students find it difficult to differentiate between main ideas and supporting ideas. This is due to the observation that English language teachers have this erroneous understanding that the only method used in teaching and learning summary writing is the read and write method. As a result, no conscious effort is made towards improving the strategies used in teaching and learning summary. This neglect by teachers is largely due to the underestimation of the complex nature of the summary writing.

There is, therefore, a pressing need to explore the interactive listening strategies that may enhance students' performance in summary writing. Students' performance in summary writing may vary according to gender. As such, this study focused on gender as it affects students' performance in summary writing. Thus, the problem of this research is:

What is the effect buzz discussion strategy on male and female Senior Secondary II students' performance in summary writing in Oshimili South Local Government Area of Delta State, Nigeria?

Research Questions

The following research questions guided the study.

1. What is the difference between the mean performance scores of students taught summary writing with buzz group strategy and those taught with conventional strategy?
2. What is the difference between the mean performance scores of male and female SS2 students taught summary writing using buzz group strategy?

Hypotheses

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

1. There is no significant difference between the mean performance scores of students taught summary writing with buzz group strategy and those taught with conventional strategy.
2. There is no significant difference between the mean performance scores of male and female SS2 students taught summary writing using buzz group strategy.

Methodology

The study adopted a quasi-experimental, pretest, posttest non-randomized equivalent group design. (experimental and control groups). The study was guided by two research questions and two hypotheses which were formulated and tested at 0.05 level of significance. Purposive sampling was used to sample 179 (79 males, 100 females) senior secondary two students in three classes from three schools in study area to ensure uniformity of participants. The instrument used for data collection was Summary Writing Performance Test (SWPT) and lesson plans developed by the researcher and validated by three experts. The SWPT was subjected to trial testing and its reliability coefficient value was 0.95 using Kuder-Richardson (K-R21). The items were generated based on the contents of summary writing in English language curriculum for SS2 students in Nigeria. The pre-test and post-test were the same except the title of the passages were altered. The pretest was administered week prior to the commencement of treatment. The two experimental classes were exposed to treatment on Buzz group while the control group was taught using the conventional method. The treatment lasted for six weeks within which six summary writing passages were taught. The post-test was administered in the eight week after intervention to establish the effect of the strategy on students in summary writing. Data analysis was done using mean, standard deviation, bar chart and line plots to answer research questions while hypotheses were tested at 0.05 level of significance using Analysis of Covariance (ANCOVA).

Results

Research Question 1: What is the difference in the mean performance scores of students taught summary writing with buzz group strategy and those taught with conventional strategy?

Table 1: Mean and Standard Deviation of Performance Scores of Students Taught Summary Writing with Buzz Group Strategy and those Taught with Conventional Strategy.

Strategies		PreSWPT	PostSWPT	Mean Gain
Buzz Group Strategy	Mean	11.26	27.12	15.86
	N	58	58	
	Std. Deviation	2.34	2.77	
Conventional Strategy	Mean	8.83	17.37	8.54
	N	59	59	
	Std. Deviation	1.62	2.15	
Mean difference		2.43	9.75	7.32

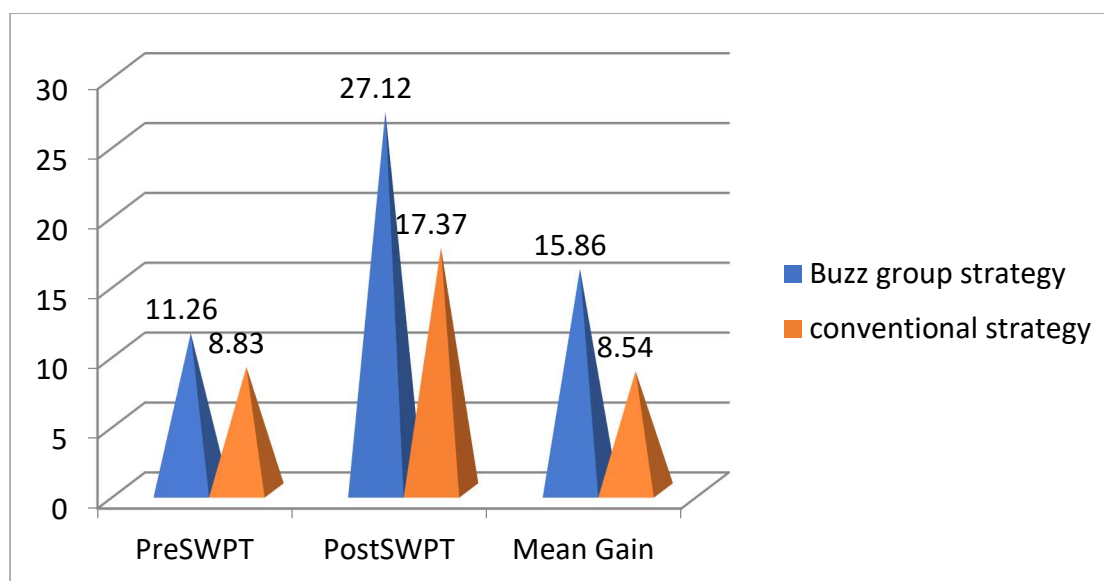


Figure 1: Mean Performance Scores of Students Taught Summary writing with buzz group strategy.

Table 1 shows the mean performance scores and standard deviations of students taught summary writing with buzz group strategy and those taught with conventional strategy. The table shows that 58 students were taught summary writing with buzz group strategy while 59 students were taught summary writing with conventional strategy. The table reveals that the mean performance scores of students taught summary writing with buzz group strategy is 11.26 with a standard deviation of 2.34 during pre-test and 27.12 with a standard deviation of 2.77 in the post-test. The mean performance scores of students taught summary writing with conventional strategy is 8.83 with a standard deviation of 1.62 during pre-test and 17.37 with a standard deviation of 2.15 in the post test. The table further shows that the mean gain for buzz group strategy is 15.86 while that of conventional strategy is 8.54. The summary of the pretest, posttest mean score and mean gain of performance scores of students taught summary writing with buzz group strategy and those taught with conventional strategy is as shown in Figure 1. The difference in the mean performance scores of students taught summary writing with buzz group strategy and those taught with conventional strategy is 7.93 in favour of students taught summary writing with buzz group strategy.

Research Question 2: What is the difference in the mean performance scores of male and female SS2 students taught summary writing using buzz group strategy?

Table 2: Mean and Standard Deviation of Performance Scores of Male and Female SS2 Students Taught Summary Writing Using Buzz Group Strategy

Gender		PreSWPT	PostSWPT	Mean Gain
Male	Mean	18.93	26.82	7.89
	N	28	28	
	Std. Deviation	2.37	3.66	
Female	Mean	19.57	27.40	7.83
	N	30	30	
	Std. Deviation	2.30	1.77	
Mean difference		0.64	0.54	0.06

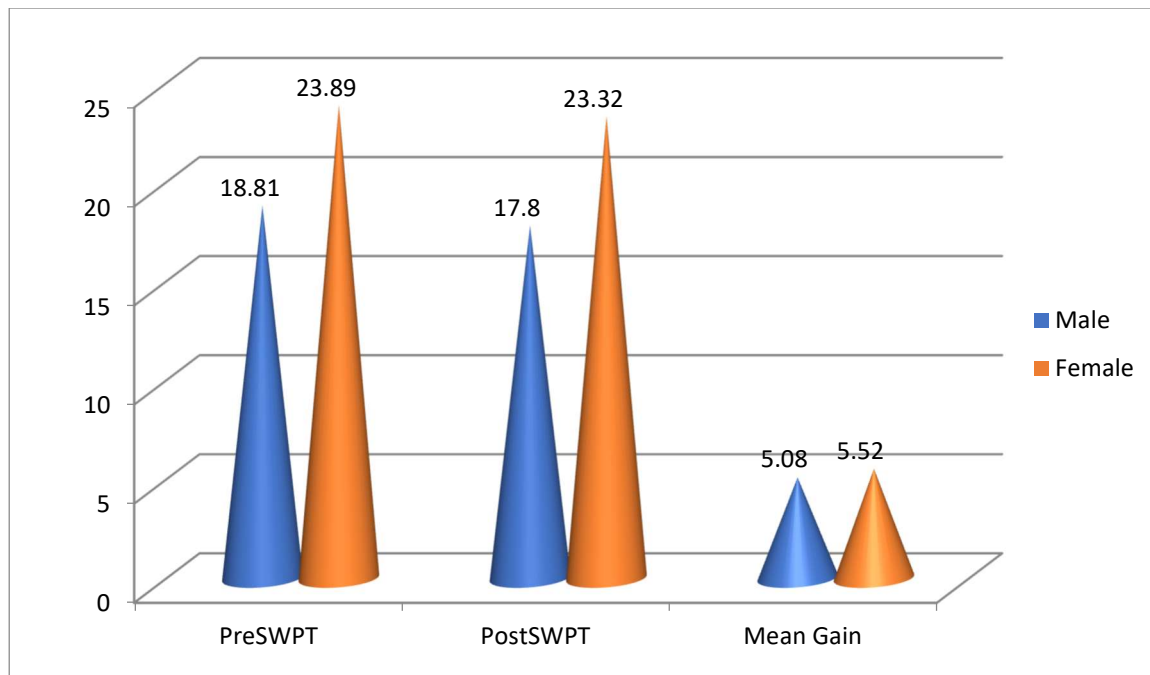
**Figure 2:** Mean Performance Scores of Male and Female Students Taught Summary Writing Using Buzz Group Strategy.

Table 2 shows the mean performance scores and standard deviations of male and female students taught summary writing using buzz group strategy. The table shows that 28 male and 30 female students were taught summary writing using buzz group strategy. The table reveals that the mean performance scores of male students taught summary writing using buzz group strategy is 18.93 with a standard deviation of 2.37 during pre-test and 26.82 with a

standard deviation of 3.66 in post-test. The mean performance scores of female students taught summary writing using buzz group strategy is 19.57 with a standard deviation of 2.30 during pre-test and 27.40 with a standard deviation of 1.77 in post-test. The table further shows that the mean gain for male students taught summary writing using buzz group strategy is 7.89 while that of female students is 7.83. The summary of the pretest, posttest, and mean gain of performance scores of male and female students taught summary writing using buzz group strategy is as shown in Figure 5. The difference in the mean performance scores of male and female students taught summary writing using buzz group strategy is 0.06 in favour of the male students taught summary writing using buzz group strategy.

Hypothesis One

There is no significant difference in the mean performance scores of students taught summary writing with buzz group strategy and those taught with conventional strategy.

Table 3: ANCOVA of Mean Performance Scores of Students Taught Summary Writing with Buzz Group Strategy and Those Taught with Conventional Strategy

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	2829.584 ^a	2	1414.792	246.807	.000	.812
Intercept	714.443	1	714.443	124.633	.000	.522
Strategies	147.950	1	147.950	25.809	.000	.185
PreSWPT	50.459	1	50.459	8.802	.004	.072
Error	653.493	114	5.732			
Total	61172.000	117				
Corrected Total	3483.077	116				

a. R Squared = .812 (Adjusted R Squared = .809)

Table 7 shows that $F(1,116) = 25.809$; $p = 0.000 < 0.05$. Since p-value is less than 0.05, the null hypothesis is rejected. This implies that there is significant difference in the mean performance scores of students taught summary writing with buzz group strategy and those taught with conventional strategy. Thus, it can be concluded that based on evidence from data analysis there is significant difference in the mean performance scores of students taught summary writing with buzz group strategy and those taught with conventional strategy. The partial Eta square of 0.185 was obtained for the strategies meaning that 18.5% of the students' mean performance scores in summary writing can be accounted for by the buzz group strategy employed in teaching summary writing.

Hypothesis two

There is no significant difference in the mean performance scores of male and female SS2 students taught summary writing using buzz group strategy.

Table 4: ANCOVA of Mean Performance Scores of Male and Female SS2 Students Taught Summary Writing Using Buzz Group Strategy.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4.925 ^a	2	2.462	.314	.732	.011
Intercept	583.678	1	583.678	74.444	.000	.575
PreBUZZ	.077	1	.077	.010	.922	.000
Gender	4.591	1	4.591	.586	.447	.011
Error	431.230	55	7.841			
Total	43097.000	58				
Corrected Total	436.155	57				

a. R Squared = .011 (Adjusted R Squared = -.025)

Table 9 shows that $F(1,55) = 0.586$; $p = 0.447 > 0.05$. Since p-value is greater than 0.05, the null hypothesis is not rejected. This implies that there is no significant difference in the mean performance scores of male and female students taught summary writing using buzz group strategy. Thus, it can be concluded that based on evidence from data analysis, there is no significant difference in the mean performance scores of male and female students taught summary writing using buzz group strategy. The partial Eta square of 0.011 was obtained for gender meaning that only 1.1% of the students' mean performance scores can be attributed to the influence of gender of students in buzz group strategy class.

Discussion of Findings

The result from hypothesis one showed that there is significant difference in the performance scores of SS 2 students taught summary writing with buzz group strategy and those taught with the conventional method. This is evident in the considerable higher mean score of students in the experimental group over those in the control group. The finding adds to the list of findings that support the fact that buzz group strategy considerably increases the academic performance of students. This is because buzz group enhanced students' interaction which enabled them to have deeper understanding of a given topics or questions as they discuss in groups. The finding agrees with Milaningrum and Mulyanto's (2015) finding that students perform significantly higher when they are taught with buzz group strategy as against the direct method of teaching that requires no group or interactive activities.

The finding is also in conformity with the submission by Tagor and Sondang (2018) that students who were taught with buzz group strategy perform better in writing when compared to their colleagues. Also, a similar finding by Arisman (2019) indicated that there is a significant difference in the writing achievement of EFL students taught writing with buzz group and those who were taught with the conventional method. This finding is also in line with the finding by Sajedi (2014) that collaborative summary writing instruction significantly improves the performance of students in summary writing. The researchers are of the view that the positive result in favour of buzz group strategy could be due to the interactive nature of the strategy that guarantees that students relate freely with their classmates in the classroom.

The result from null hypothesis two shows no significant difference in the performance scores of male and female students taught summary writing using buzz group strategy. This finding is inconsonance with the attempts by scholars to compare the performance of male and female students in order to determine the efficacy of a strategy. The finding suggests that the buzz group strategy, if properly utilized, could enable male and female students learn effectively at similar pace. This result is possible because buzz group enhanced students'

motivation, participation, and in-depth understanding of given topic through discussion. This finding is similar to a finding by Komarudin, Aji, Heni, Nora and Nia (2019) that there was no significant difference in the performance of male and female students when taught with buzz group strategy. Also, the finding by Tagor and Sondang (2018) revealed no significant difference in the performance of male and female students in summary writing. The finding however varies from Ni'mah's (2015) finding that there was significant difference in the performance of male and female students taught with buzz group strategy.

Conclusion

Summary writing is an aspect of writing that students have always had problems passing at both internal and external examinations. The findings of this study indicate how to use interactive strategies in developing the necessary skills in students that may help them overcome the challenges they encounter when summarizing a passage.

Recommendations

1. English Language teachers should endeavour to use Buzz group strategy to teach summary writing.
2. English Language teachers should always promote interaction among students as this will enable them share ideas as they learn how to write summary.
3. Due to the primary role summary writing plays in learning, it is recommended that teachers develop students' writing skill at an appropriate level.
4. It is recommended that school authorities should organize school-based seminars that will expose teachers to strategies that could demystify the teaching of summary writing.

References.

- Bogamuwa, I.J. (2011). Summary writing performance and the impact of instruction: An exploratory study using upper intermediate ESL students. An unpublished M.A Thesis. The Open University of Sri Lanka.
- Efrilant, I. (2010). Investigating the summary writing performance of university students in Taiwan' in language training and testing center. Retrieved from the November 20, 2017.
- Khanin, S.V. (2013). *Using the case method as a method of interactive training in teaching the course "History of the internal affairs authorities*. Bulletin of the Nizhny Novgorod Academy of the 6572 kutbiddinova et al. Ministry of Internal Affairs of Russia, 24: 177-180.
- Khoshima, H., & Nia, M.R. (2014). Summarizing strategies and writing ability of Iranian intermediate EFL students. *International Journal of Language and Linguistics*, 2(4), 263-272.
- Kolawole, O. (2007). Students' performance in senior secondary school mathematics exams. Retrieved on 27 January 2018 from <http://www.thefreelibrary.com>.
- Komaruin, A.I., Heni, R., Nora S., & Nia A. (2019). Buzz group application methods to the students' reasoning ability and mathematical communication skills of class VIII Budi Mulya High School Bandar Lampung. *Journal of Physics ConferenceSeries*, 1155, 1-6
- Lin, P.O., & Maarof, N. (2013) Collaborative writing in summary writing: Students perceptions and problems. *Procedia – Social and Behavioural Sciences*, 90, 599-606.

- Lorena, M.S. (2015). The importance of four skills: reading, speaking listening in a lesson hour. *In European Journal of Language and Literature Studies*, 1(1), 28-31.
- Milaningrum, E., & Mulyanto, S. (2015). The effect of buzz group method to teach reading comprehension viewed from students' motivation. Retrieved 5th March 2020 from <https://www.semanticschool.org>.
- Mokeddem, S., & Houcine, S. (2016). Exploring the relation between summary writing ability and reading comprehension: Towards an EFL writing-to-read institution. *Mediterranean Journal of Social Sciences*, 7(2), 176-20.
- Muodumogu, C.A., & Orbura, N.F. (2019). Effects of Pictograph advance organizers on senior secondary one student's achievement in writing in Gboko Local Government area, Benue State. *Journal of Reading Association of Nigeria*, 18, 74 -82.
- Murphy, J. (2010). *The educational handbook for understanding and closing achievement gaps*. Nashville: Crown Press.
- Ni'mah, W. (2015). The use of buzz group technique to enhance students' activeness and writing skill of hortatory exposition text. A master's degree thesis, Walisongo State Islamic University. Retrieved 20th March 2021 from eprints.walisongo.ac.id/4576/
- Norisma, I., Mohd, S., & Rukaini, A. (2011). Identifying students' summary writing strategies using writing sentence decomposition algorithm. *Malaysian Journal of Computer Science*, 24(4), 180-194.
- Olatunji, S.O. (2011). Reading comprehension and summary skills. In Olasun, I., Olanrewaju, M.U. and Odekunle, O.A. (Eds) *English language and communication skills for tertiary education*, Ibadan services. 203 -226.
- Oladotun, O.P (2020). Cognitive styles and gender as predictors of students' achievement in summary writing in selected secondary schools in Ibadan, Nigeria, *Education Research International Journal*, 4, 1-9.
- Tagor, P., & Sondang, M. (2018). The effect of Buzz Group technique and clustering technique in teaching writing at the first class of SMA HKBP 1 Tarutung. *Journal of English Language Teaching*, 11(1), 1
- Vandergrift, L. (2010). Listening: Theory and practice in modern foreign language listening competences. Retrieved September 5, 2017, from www.ila.ac.uk. >Home
- Wichadee, S. (2013). Improving students' summary writing ability through collaboration: A comparison between online wiki group and conventional face-to-face group. *The Turkish Online Journal of Educational Technology*, 13(3), 107-116.
- Xiong, X. (2010). A comparative study of boys' and girls' English study differences. Retrieved on the 2nd of March 2018 from www.academypublisher.com
- Zoghi, M. Kazemi, S.A., & Kalani, A. (2013). The effect of gender on language learning. *Journal of Novel Applied Sciences*, 2(4), 1124-1128.