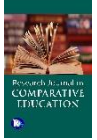# Exploring the use of cohesive devices in students' expository essays: A case study

Research article

Cecilia Sekwo

Department of Languages, Presbyterian College of Education, Ghana
Email: ceciliasekwo@yahoo.com
https://orcid.org/0000-0003-3778-9060

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Abstract
This study explores the way cohesive patterns are distributed in expository essays of students in Evangelical Presbyterian College of Education, Bimbilla, and compares the relationship between the occurrence of the devices and text quality. The research adopted the sequential exploratory mixed research approach involving text analysis, semi-structured interviews, questionnaires and observation as data collecting tools. Sixty essays were analyzed using Halliday and Hasan (1976) cohesion model and augmented with observation of sub-categories of the devices. Ideas were solicited from five tutors while twenty students were granted interview. The results of this study show that the students were able to effect cohesive relations in all five types of cohesive devices. Statistically, reiteration was the most dominant with 38.94%, with repetition as the dominantly used sub-category. Conjunction was second with 35.85%, reference 18.74%, collocation 4.87%, substitution 0.86% and ellipsis was 0.71%. The students achieved text coherence through the deployment of the cohesive devices, the development of themes, and the generic structure. The results however highlighted instances where the students failed to establish cohesive relationships in their write-ups.

Public Interest Statement

The fact that English as a Second Language (ESL) learners overused or underused, or do not even employ cohesive devices cannot be overstated. There is research-based evidence to support this assumption. Norment (1995) investigated the occurrence of cohesive devices in essays of thirty basic writing students. He found that in texts written by African American writers, referents (especially endophoric) were overused and that lexical cohesion (repetition of items, synonymous items, collocations, etc.) were used extensively. Cohesive devices within and between paragraphs were absent from African American writing. This is an indication that ESL writers are faced with the problem of misappropriating cohesive devices or even omitting them completely in their write-ups.

Introduction

Unquestionably, writing as one of the second language skills is really difficult to develop. This difficulty leads most people to produce sloppy incoherent write-ups. According to Richards and Renandya (2002), the difficult emanates both from generating and organizing ideas and translating these ideas into readable text. It indeed requires the writer's conscientious efforts to put a lot of components together. Whatever is the situation, it is incumbent on every writer to produce a readable text that will enable readers to process it without many constraints. In a quest to ease apprehension associated with writing, a number of important works were published that dealt with the subject of cohesion and coherence in the early seventies in the 20th century. The work by Halliday and Hasan (1976) has to be mentioned in particular among these works. Now it is generally admitted that the publication of cohesion in English by M.A.K Halliday and R. Hasan (1976) is the symbol of the establishment of cohesion theory.

In their work, cohesion is described as a semantic concept referring to relations of meaning that exist within a text (Halliday & Hasan, 1976, p.4). Their definition of cohesion emphasizes the relationship between the meanings of linguistics units. They also define a concrete form as a tie, "We need a term to refer to a single instance of cohesion, a term for one occurrence of cohesion a term for one occurrence of a pair of cohesively related items. This we call a tie" This term 'tie' refers to a single instance of cohesion or one occurrence of a pair of cohesively related items. The links are called "cohesive ties" or "cohesive devices" (Halliday & Hasan, 1976, p.4). Halliday and Hasan distinguished cohesive ties in terms of grammatical cohesion and lexical cohesion in their work. Grammatical cohesion covers four cohesive devices: reference, substitution, ellipsis, and conjunction, while reiteration and collocation fall into the category of lexical cohesive devices.

In Hasan and Halliday's (2013) model, it is believed that cohesion and coherence, as the two important textual elements, have received extensive recognition as important features of quality writing. So, writing coherent and cohesive texts is cardinal among language learners if they wish to prove to be qualified English writers, regardless of their non-native background. Hence, their notion

of a 'unified whole' refers to the fact that the units of a text are mutually related and that text has a structure. But since text can assume an almost infinite variety of structures and forms, from single words to thousands of words, its meaning depends on the context (Christiansen, 2011).

Similarly, Halliday and Matthiessen (2014) elaborate on the idea of text quality by adding that cohesive ties are used overtly in a text to ensure interconnectedness. This interrelationship among the cohesive ties provides the text its texture. The texture of a text is measured by the mutual relationship of cohesive ties in that text to foster the sequence of ideas into a united whole.

Literature Review

The concept of cohesion

Halliday and Hasan state that a text is a semantic unit and it has an internal logic relation. They stress that a drama, a sentence, or even a word can represent this unit (1976, p. 3-5). Halliday and Hasan argue that a text has a texture (organization of a text), and this is what distinguishes it from something that is not a text. In other words, parts of texture are cohesion and coherence (1976, (P: 2-3). Thus the term cohesion refers to the surface links in text. Cohesion has a vital role in creating the unity of text. A non-cohesive text may result in the reader or listener losing their concentration. The recipient will not be able to obtain the intended message if the information conveyed to him/her is not linked together. Hence, results in a lack of communication. This facilitative role of cohesion for text meaning is what prompted Halliday and Hasan to conclude that "Cohesion occurs where the interpretation of some elements in the text is dependent on that of another (1976, P: 4).

The concept of coherence

Coherence most often is perceived differently from different perspectives. Some linguists think that traditionally, it is a relationship that sticks information in a text together in order to establish a sense of unity for the reader. It is believed that the sense of unity resides in the interconnectedness of the linguistic elements (Lee, 2002). In addition, Briguglio (2007) describes coherence as the glue that binds a text so that the ideas seem to flow easily and logically from one stage to the next. In other words, paragraphs should be linked well from one paragraph to the next, sentences within a paragraph should also be linked well to foster a logical sequence of ideas of the text as a whole. This pattern of sequencing is required to construct a coherent text. Hyland (2006) defined coherence as: "The way a text makes sense to readers through the relevance and accessibility of its configuration of concepts, ideas and theories" (p.311). From his point of view, coherence involves logical connections at idea level (topic), situation of context and theoretical basis. It is about the writer's responsibility to estimate the readers' background knowledge on a particular domain and fix his or her ideas together consistently into a united whole to convey the intended purpose in a context of situation.

Importance of cohesion and coherence in writing

It is incontestable that cohesion and coherence are the two linguistic elements that ensure text quality most. When these two textual elements are used appropriately in any text, it becomes cohesive and coherent. Many studies have been done to confirm the degree of practicality of this assertion. Studies such as McNamara, Crossley and Kyle (2014) & Hinkel (2004) have shown that cohesive devices are important indicators of text comprehensibility such that an increase in text cohesion generally leads to greater comprehension of a text. Thus, the density of cohesive devices a writer uses to construct a text enables the reader to process the text and construct meaning. This notion suggests that these linguistic elements are indispensable to text quality. The reader's ability to construct meaning behind a text is determined by the writer's art of sequencing all the sentences that make up each paragraph of the text. The sequencing should be in a logical manner by following a continuous order based on the message these sentences are trying to convey. Within this framework, coherence is important in writing as it relates to expressing consistent and understandable ideas in a text. This is supported by the literature below. McNamara et al (2014) explore the use of lexical cohesion among TESL postgraduate students in academic writing. Fifteen students' essays were collected and analyzed to identify the types, dominance, and the least used devices. The findings demonstrated four types of lexical devices: repetition, synonyms, antonyms and collocation were deployed by the students in their essays. This presupposes the students were able to use these lexical cohesion categories to create a cohesive effect within the ideas conveyed by the students in their write-ups.

Similarly, Almaden (2006) noted that cohesion and coherence are crucial components when constructing a quality text. Linguistically, they determine the generating and developing ideas as well as the structuring of the text. Cohesion and coherence are necessary elements in developing the writing skill (Almaden ibid), so both teachers and students need to have ample knowledge in them to enhance the development of the writing skill and consequently gaining the proficiency to produce coherent texts.

Xhepa's (2016) paper outlines a general and practical overview of the importance of cohesion and coherence in a text. The paper presents cohesion and coherence as crucial elements for text construction. Xhepa agrees with Almaden that the two elements are indispensable if writers wish to create continuity and clarity in the text. Without the continuity and clarity required, a text fails to be a text. From a practical point of view. Different texts show their importance of understanding on the part of the reader. The writer is concerned to write something that will be understood by different readers. For this reason, it is very important for the text to be written correctly having both cohesion and coherence.

According to Celce-Murcia & Olshtain (2000), a well-written text has unity and is connected through sentences that relate to one another. It depends on whether the text is long or short. In a

long text, the coherence of the whole text depends on the coherence of the paragraphs presented in the text while in a short text, coherence depends on the sentences themselves.

Ralf (2018) asserts that the goal of writing is to benefit the reader. The writer is therefore expected to provide signals in a form of cohesive devices to guide the reader in determining the meaning of a text. Without these clues, the reader may detect choppiness in the text and feel as if there are gaps in the ideas presented. Inevitably, text without the required connections to enhance coherence is difficult to read and understand. It defeats the whole purpose of writing, which is to relay ideas in a clear and efficient manner. Inferences drawn from her assumption is the need to focus on coherence when writing at the sentence level and depend on cohesion to smoothen the flow of writing. This would undoubtedly improve writing quality. Without coherence and cohesion, readers will become confused and eventually lose interest in the text because they cannot trace the ideas. As a result, the primary objective of writing is not achieved.

Nilopa et al (2017) explored types of cohesive devices used by Indonesian third-semester students of the English Department in their expository essays. The data was collected from 13 students and analyzed based on Halliday and Hasan's (1976) taxonomy. In their findings, conjunction and reference as grammatical cohesive devices were frequently used in the students' expository essays to establish cohesive relations and text coherence. Likewise, Zhang's (2000) carried out a study on 107 university students to find out their ability to write cohesively and coherently. His report demonstrated how the university students were able to deploy cohesive devices to effect cohesive relations in their essays. This is an evidence that cohesive devices enhance text unity.

Yang & Sun ((2012) carried out a research to determine the degree of interaction between cohesive ties and text quality in Chinese writers' essays. They found out that the research participants used appreciable number of conjunctions together with the other cohesive devices in their essays. The use of conjunctions facilitated interconnectedness at paragraph level, sentence level, clause, phrase and that of word level. The findings demonstrated a high degree correlation between the total number of correctly used cohesive devices and the quality of their argumentative essays.

Akindele (2011) analyzed cohesive devices in two academic papers which examined both grammatical and lexical cohesive devices based on Halliday and Hassan's cohesive theory. The results showed that cohesive text was determined by grammatical or lexical cohesive devices. The results also revealed the importance of the deployment of cohesive units to form a consistent whole. The variety of cohesive devices found in his research was grammatically and lexically attached to discourse because of the cohesion provided by the linguistic means through which the text operated as a single unit. Likewise, Jafarpur (1991) sought to find out the interaction of cohesive ties with text quality. The study revealed that the quality of essays written in English by

Iranian undergraduates correlated with the number of cohesive ties and types used in the essays.

Liu and Braine (2005) also investigated the use of cohesive devices in Chinese undergraduate non-English majors. The authors analyzed 50 argumentative compositions written by the research participants. The results showed that there was a correlation between the number of cohesive devices used and writing quality. There is every indication from the above discussions that cohesion and coherence play a facilitative role in text coherence. There is, therefore, a fervent need for research to be carried out on the uses of these indispensable linguistic elements in any learning center such as college-level where the students are expected to do academic writing.

Methodology

The current research used mixed research approach. Creswell (2014) noted that mixed methods research is an approach of inquiry involving collecting both quantitative and qualitative data, integrating the two forms of data, and using distinct designs that may involve philosophical assumptions and theoretical frameworks. The core assumption of this form of inquiry is that the combined quantitative and qualitative approaches provide a more complete understanding of a research problem than either approach alone. Thus, the mixed methods reside in the idea that all methods have biases and weaknesses, and the collection of both quantitative and qualitative data neutralizes the weaknesses of each form of data.

The characteristics these individuals share must distinguish them from other groups of individuals. The target population comprised 120 level 200 students of EPCE, Bimbilla. Convenient sampling was used to develop a sample of the research under discussion. The respondents were chosen based on their convenience and availability. This non-probability sampling technique was employed because of the qualitative and exploratory nature of the current research.

The participants were recruited according to pre-selected criteria relevant to the research questions. Thus, sampled members were selected on the basis of their knowledge, relationships and expertise regarding the research topic as noted by (Fowler, 2009). In the current study, the sample size selected had special relationships with the phenomenon under investigation, it was evident in their written assignments that they had a peculiar problem. They were challenged with the ability to construct cohesive and coherent essays.

The 60-essays sampled were analyzed thoroughly through the following procedures. First, the researcher sought permission from the Principal of the College and the respondents to collect their essays entitled 'As a pre-service teacher, explain to the market women in your community about the effects of poor sanitation'. The essays were all read thoroughly by the researcher and analyzed manually by hand. All the types of grammatical cohesion and lexical cohesion were crossed out and marked by using different symbols. R_1 represented reference, S represented substitution, E represented ellipsis, C_1 represented conjunction, R_2 represented reiteration and C_2 for

collocation. Their sub-categories were only observed. The semi-structured interview guide for the twenty students was basically on their ability to construct cohesive and coherent essays. The interview took the face to face trend where the researcher outlined specific issues and topics to be covered. She then decided on the sequences and wording in the course of the interview. The researcher employed this data collection instrument because it enabled the wording of questions to be flexible, so the interviewer could probe for more specific answers, and questions could be repeated for clarification.

Findings/Results

Types and frequencies of cohesive devices in essays

The analysis of the 60 essays data revealed 4183 grammatical and lexical ties. Both grammatical and lexical ties were of different types and frequencies. The data analyzed demonstrated that all the categories of cohesive devices presented by Halliday and Hassan (1976) featured in the students' essays. The following pictorial representations give a detailed illustration of these findings:
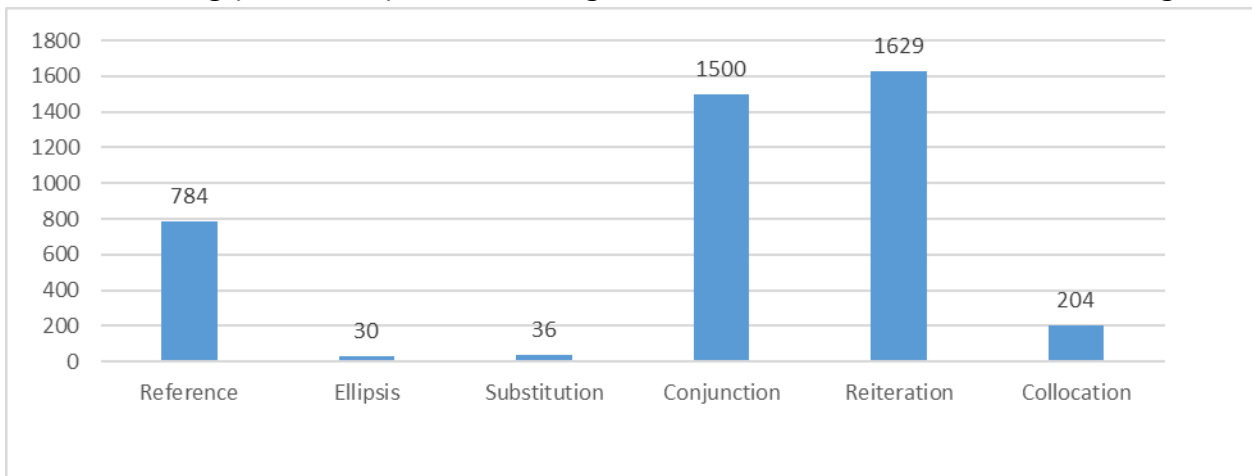

Fig 1: Frequencies of cohesive devices in students' essays -Total occurrence (4183)
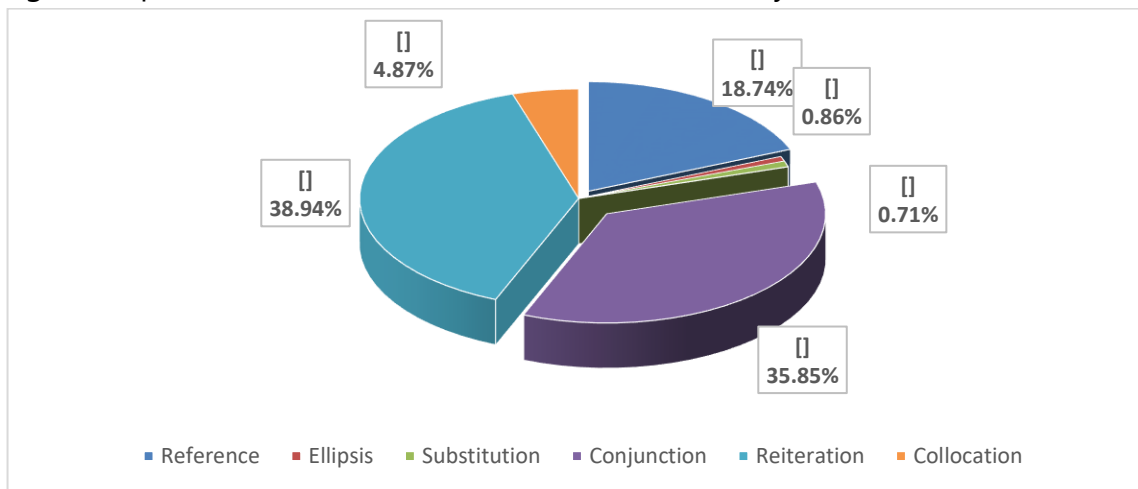

Fig. 2: Frequencies of cohesive devices in percentages

Table 1: Tutors responses on how often their students use cohesive devices

Frequency of cohesive devices in students' work	Number of tutors and their percentages					
	Frequently used	Percentage	Seldom used	Percentage	Total	
How do students value cohesive devices and coherence	4	80%	1	20%	5	100%
Reference	4	80%	1	20%	5	100%
Substitution	1	20%	4	80%	5	100%
Ellipsis	1	20%	4	80%	5	100%
Conjunctions	2	40%	3	60%	5	100%
Lexical	3	60%	2	40%	5	100%

Discussion

Regarding Fig. 1 and 2, it can be understood that some cohesive ties are shown to be frequent while others are relatively less frequent in the students' essays. Those that occurred most are conjunction (35.85%) and reiteration (38.94%). The less frequently used cohesive ties include: substitution with percentage weighting (0.86%) and ellipsis which recorded (0.71%) equivalent to (1%) in both cases, collocation (4.87%), and reference (18.74%). Therefore, the essays exhibited reiteration and conjunction more than reference, substitution and ellipsis. These findings are consistent with Nilopa et al (2017) research findings. These researchers realized that conjunction and reference as grammatical cohesive devices were frequently used in the students' expository essays with conjunction being the most dominant. With regard to the present study, the implication of the un-proportionate frequencies of the cohesive devices in the students' essays has a lot of attributions. The data analysis revealed a lot of issues based on disparities. These attributions would therefore be discussed under each cohesive device.

Reference

Analysis of data revealed that one of the ways in which cohesion is realized in English is by means of reference. As mentioned earlier, one of the ways in which reference is realized is by the use of the proposed model of Halliday and Hasan (1976). They identified three ways in which reference can be realized in English: through the use of demonstratives, personal pronouns and comparatives. As shown above, the number of reference devices adopted is 784, which represents (18.74%) out of 4183 total occurrences of both grammatical and lexical cohesive devices. This representation of reference on Fig 1 and 2 illustrates the number and percentage of all the three

sub-categories of reference put together: personal, demonstrative, and comparative. Considering the percentage weighting of reference, it is the third predominant cohesive device used. The implication of the findings is that the College students' ability to employ reference items to derive cohesive force more than substitution, ellipsis, and collocation because of the text-type used. In expository writing, a lot of relations are made within the text through reference, to send the intended message to the target audience. An example from a student essay showing how the students displayed their expertise in using reference as a cohesive tie include:

Example 1: Student: (Text analysis)
People defecate anyhow in the environment where <u>they</u> find <u>themselves</u>.
If people are to build on a land, <u>they</u> do not survey.

Example 1 further revealed that within the sub-categories, the College students employed personal reference items more than the other sub-categories. Even though the scope of analysis did not distinct the sub-categories, the researcher observed during the text analysis that the personal reference items were widely used. This was therefore attributed to the nature of the text that was given to the learners to write on. The analysis from the open-ended interview also supports the students' predominant usage of references demonstrated in their writings. Ten students out of the total of 20 students who were granted an interview exhibited fair knowledge in the use of reference during the interview process. One of the interviewees formed the following sentences to show his knowledge in the use of reference:

Example 2: Student: (Interview analysis)
I know that pronouns take the place of nouns to avoid repetition.
If not, writing will be boring and confusing.
 E.g. Azindow was here. <u>He</u> and his friend came here.
 <u>They</u> came to see <u>you</u>.
<u>They</u> brought <u>them</u>, the computers to show you.

It is clear from example 2 that the ten out of the total twenty research subjects that were granted interview demonstrated awareness of the reference items. They were able to deploy it anaphorically and cataphorically in their communication. This was rooted to their frequent use of this grammatical category in their daily utterances. Further, the tutors' responses on the frequency of cohesive ties in their students' writings on Table 1 revealed the following findings. On the part of reference as a cohesive device, 4 tutors constituting 80% of the total number of 5 tutors admitted that, this grammatical category featured in their students' writings more frequently while the

remaining 1 tutor constituting 20% of the total number of tutors said the device seldom occurred in their students' essays. These findings conform to the findings in the students' expository texts and the data analysis from the open-ended interview. The indication is that the text-type used in the analysis coupled with the frequent use of pronouns by the students in their daily utterances made them employ these devices most in their essays.

Substitution

With reference to Fig 1 and 2, the number of substitution devices (all the sub-categories) employed in the students' essays is 30, which represents one of the least percentage (0.86%) of the 4183 occurrences of all the cohesive devices. There is homogeneity in these findings and that of the findings of Nilopa et al (2017). These researchers explored the types of cohesive devices in students' expository essays. They sourced data from 13 participants and analyzed the data based on Halliday and Hasan's (1976) framework on cohesive devices. Their findings highlighted substitution among the least cohesive devices used by the students in their expository essays to drive cohesive force. Likewise, Zhang's (2000) research also reported a minimal percentage of university students using substitution in their writing. It was however evident through the researcher 's observation during the analysis that the learners generated all the three sub-categories of substitution: nominal, verbal, and clausal relations. Example 3 authenticates these findings.

> Example 3: Student: (Text analysis)
> *'Some market women and many people use the same water*
> *for domestic purpose, by <u>so doing,</u> they...'*

Among the three situations, however, verbal substitution was observed to have been used only once. Whatever the situation may be, the interpretation of the minimal deployment of substitution in general by the students in their expository essays is ascribed to the text-type used in the analysis. Even though substitution has the grammatical force to reduce repetition and make text economical, it is naturally identified with dialogue than written text. Its occurrence is therefore rare in a text that exists in the written mode. The interview findings demonstrated the students' lack of awareness in using substitution for a cohesive effect. Eighteen students out of the total number of 20 students who were granted an interview admitted that they never knew substitution could provide interconnectivity within linguistics elements in a text. Example 4 supports this information.

> Example 4: Student: (Interview analysis)
> *Please Madam, I know of conjunctions as words that help us to connect*
> *our ideas, sentences words or phrases together but I have never heard of*

the word substitution in grammar if not substitution table.
I cannot learn outside the course outline. Even within the course outline,
I always try to predict what will come to the exams and I select topics from
my notes to read. At times, I study past questions.

This implied there was no awareness creation to equip the students with the right knowledge to use the device to communicate effectively. It is also explicit how the mode of assessment in Ghanaian Colleges of Education for the diploma programme in particular determined what is taught and learned. The conclusion arrived at is that the students only focused their studies on passing examination to the detriment of developing the skills to enable them teach as expected. Another measure that was used to consolidate the findings of the use of substitution by students was the data analyses from the tutors' questionnaire. The tutors' responses to the occurrence of substitution in their students' write-ups on Table 1 revealed 4 tutors representing 80% of the total number of 5 tutors who responded that substitution hardly featured in their students' writings while the remaining 1 constituting 20% said the device occurred more frequently in his or her students' essays. The high percentage of the device hardly occurring in the students' writing was attributed to the restricted curriculum the tutors used. The course designers determined assessment tools and procedures for the course. This affected classroom interaction negatively. This was evident when the tutors were asked in the questionnaire to state in their opinions why they taught their students could or could not use the devices.

Example: 5: Teacher's opinion (Questionnaire analysis)
What we teach is examination driven.
If we give details and are not able to complete the course
outline, the students will fail and our teaching will be questioned.
Besides, the scope of the course outline excludes some of the devices.
In some cases, they are inadequately presented.

 It is obvious that their students could not use substitution frequently in essay writing due to a lack of exposure of the device to the students. The Diploma in Basic Education English language course outline in Ghanaian Colleges of Education has not made provisions for integrating the teaching of substitution as a tool for text construction. The English language curriculum was also seen to be exam oriented as such, tutors' performance was measured by the students' ability to pass examination. Hence, the tutor's inability to take the students through how to use the devices in generating a text.

Ellipsis

Fig. 1 and 2 indicate that, the College students created 30 grammatical cohesive relations between sentences through ellipsis. This represents 0.71% which is relatively (1%) out of the 4183 occurrences of all the cohesive ties employed within the texts. All three sub-categories were put together, nominal, verbal and clausal proposed by Halliday and Hasan (1976). These findings are in uniformity with Nilopa et al (2017) findings. Their findings highlighted ellipsis among the least cohesive devices used by the students in their expository essays to form cohesive relations. Zhang's (2000) research also reported a low percentage of university students using an ellipsis in their writing. Example to authenticate the occurrence of ellipsis in the current research students' essays include:

> Example: 6 Student: (Text analysis)
> *The market women have been littering the market places. Indeed, they have.*

The inadequate usage of this grammatical category was partially attributed to the type of genre the students were required to write about. The students were asked to write about exploratory essay. Typically, ellipsis is known to occur in responses in spontaneous conversations or dialogue but it is seldom used in written expository text or other types of written genres. The data analysis from the interview however presented a divergent view of the text findings. Seventeen students out of the 20 students who were granted an interview admitted that they had not heard of the terminology before. One of them has this to say.

> Example 7: Student: (Interview Analysis)
> *Ellipsis is a new word to me.*
> *I don't know what it stands for and I have*
> *never used it. It is not in the course outline.*
> *No teacher has ever mentioned this to me.*

The inference drawn from the interview excerpt is an indication that the students were not exposed to this grammatical category which is very relevant in checking redundancy and making text economical. They claimed it was not on the course outline so they did not learn it. Not even in any other source. They could not even identify it in context when the researcher engaged them in dialogue and employed the device during the conversation. Not even when sentences were presented for the students to identify those that went through the process of ellipsis and those that were not, yet it behooved on them to produce readable text as teachers. It was concluded that the students could not deploy the grammatical category even in conversational text. The data analysis

from the tutors' questionnaire in Table 1 solidified the findings on the students' low deployment of ellipsis in their write-ups and the interview findings. Four tutors constituting (80%) of the total 5 tutors said that ellipsis seldom occurred in their students' essays while the remaining 1 tutor asserted that ellipsis as a grammatical category featured in his or her students' write-ups. Again, when tutors were asked whether ellipsis is a good contributor to text cohesiveness, (60%) of the 5 tutors asserted that it is not a good contributor. This implied the tutors themselves did not see the relevance of ellipsis in text construction, or perhaps they considered its relegation to spontaneous dialogue before making that decision. It was also attributed to its exclusion from the course outline. It is not even hinted in their course outline as an element to enhance text coherence.

Conclusively, the inadequate deployment of ellipsis in the students' expository essays was associated to its alignment with conversational text. The interview and the questionnaire findings however give a different interpretation to the findings from the essays. It is a fact that expository text could restrict the research subjects from adequately employing ellipsis in their essays. This became skeptical when the interview results revealed that the students could not use the device in the face to face conversation and also professed that they were not familiar with it. The report was more cynical when the questionnaire findings subsequently confirmed the fact that the research subjects hardly deployed the device in their writing. It is therefore explicit that the low deployment of the grammatical category by the students is attributed to the text-type used in the analysis and their insufficient knowledge on the use of cohesive devices.

Conjunction

Conjunction occurred 1500 times in the students' write-ups. It constitutes (35.85%) of the total occurrence of 4183 cohesive devices according to Fig. 1. Conjunction comes second in terms of the most widely- generated grammatical cohesive relations in the students' essays, as evident in Fig. 1. These findings are consistent with Zhang (2000). He analyzed 107 essays from two universities, based on Halliday and Hasan's (1976) model of cohesive devices. The findings proved that the conjunction was the second dominant cohesive device used by the students. During the analysis of the text for the present study, the researcher observed that the College students used all the three sub-categories of conjunction in their essays. The write-ups showed that the students established additive cohesive relations in the 60 essays. They established cohesive adversative relations between sentences. They created temporal cohesive connections and they also adopted devices related to the causal sub-category. The following examples authenticate how they have used the sub-types to create cohesive relation.

Example 8: Student: (Text analysis)

Additive: Government will be forced to provide more equipment for patients that are suffering from cholera <u>and</u> other related diseases.

Temporal: '<u>Firstly</u>, one of the effects of poor sanitation is increase in government expenditure.'

Adversatives: The market women generate waste <u>but</u> refuse to dispose it properly.

Among all the additive group, 'and' was observed to be widely used. Temporal sub-type was observed to come second in usage. While it was also observed that most of the students relied heavily on <u>but</u> to establish adversative cohesive relations between sentences, few others were observed to use <u>however</u>, <u>on the contrary</u> and many others. The implication here is that the nature of the text made the students to adequately use this device in their write-ups. It was therefore concluded that the students were not familiar with those sub-categories they could not use widely. The findings from the interview data analysis substantiate the findings from the analysis of the text. Out of the 20 students who were granted interviews, 14 interviewees exhibited knowledge of conjunctions as cohesive devices. They could form sentences with these ties, particularly the additive sub-category and more specifically the additive 'and'. Student 16 on the interview list achieved cohesion in the following sentence.

Example 9: Student: (Interview analysis)

> <u>When</u> people generate garbage, they feel reluctant
> to dispose it properly. <u>If</u> this continues, it will degrade
> our environment <u>and</u> scare tourists away from our country.
> Those who do this should be punished.

The findings from the tutors' questionnaire on table 1 however portrayed a divergent view from what is reported in the students' texts and the interview. Three tutors constituting 60% of the total number of 5 tutors responded that their students seldom use conjunction as a cohesive device. These findings are consistent with Yang & Sun ((2012). Their research participants used appreciable number of conjunctions in their essays. The use of conjunctions facilitated interconnectedness at paragraph level, sentence level, clause, phrase and that of word level. Likewise, two sources of data in the current study, the text analysis and the interview revealed that, the students could achieve text cohesion. The divergent view from the tutors' questionnaire is ascribed to their inability to mark students' assignments to offer feedback constructive feedback because of overwhelming numbers and some instances where the students' essays failed to achieve cohesion.

Reiteration

Reiteration was the most dominant cohesive device contained in the students' essays. The total number of all the sub-categories of reiteration used by the students was 1629 occurrence which constitutes (38.94 %) of the total occurrence of the cohesive devices in the 60 essays analyzed. An example backing the use of repetition in the present study for cohesive relation sourced from student include.

> Example 11: Student: (Text analysis)
> *The sharp increase in poor   sanitation in our communities*
> *brings about a lot of problems. Some of the problems   as*
> *a result of   poor   sanitation are...*

Example11 is an indication that the students exhibited fair knowledge in the use of vocabulary items involving simple repetition. However, during the text analysis, the researcher observed that among all the sub-categories of reiteration, repetition was widely used while the other sub-categories such as synonyms and antonyms were the least sub-categories used. The analysis based on the interview is aligned with the findings in the students' essays. Eight of the students who were granted interview demonstrated knowledge in most of the sub-categories of reiteration. Precisely repetition, synonyms, antonyms and hyponyms. The remaining 12 interviewees displayed inadequate knowledge in these sub-categories except repetition. Example 12 illustrates part of student ten's responses during the interview session.

   Example 12: Student (Interview analysis)

> *I can repeat one word severally in writing.*
> *E.g. I will go to Bimbilla on Bimbilla market day.*
> *I can also use words that are nearest in meaning and opposite in meaning.*
> *E.g. You need to raise the name of God for him to lift you high.*
> *Abu needs to heat and cool this iron for the work.*

The data analysis from the tutors' questionnaire on Table 1 shows that 3 of the tutors constituting (60%) of the number of tutors responded that their students use reiteration to derive cohesive force while the remaining 2 tutors constituting (40%) said their students could not form cohesive relations using reiteration. These findings are different from what is revealed in the text analysis and the interview analysis.Information from the three sources of data indicates how the research participants could deploy reiteration to achieve cohesive force in their writing. These findings are similar to Zhang's (2000) research findings which exhibited high percentage use of lexical devices in

107 Chinese undergraduates' expository compositions.

Collocation

In the text analysis, collocation occurred 204 times as shown in Fig 1. Its occurrence represents (4.87%) relatively (5%) on Fig. 2. These findings serve as evidence that the College students were able to deploy lexical items that co-occur in the same environment to establish cohesive relations. Example 13 shows an example from the students' text to confirm these findings.

Example 13: Student (Text analysis)

> _Poor sanitation_, therefore, refers to any _environmental condition_ that
> has a significant _negative effect_ on the _national economy._
> Some of these causes are _improper disposal_ of sewage,
> defecating in _water bodies_ among others.

Although the students were able to use collocation to derive cohesive force, its usage was not up to expectation. Five out of the 60 essays that were analyzed did not even realize any form of collocation. The results from the interview data do not reflect the findings from the text analysis. Among the 20 students that were granted interview, 12 of them said they find it difficult using words appropriately, particularly vocabulary items that co-occur. This was attributed to the inability of tutors to use vocabulary building strategies to support the students to build their large range of vocabulary as a result of time constraints and the superficial nature of the course outline. When the students are equipped with a large stock of vocabulary, they would be at the position to build write-ups consistently with a natural flow. This is an excerpt from the interview to affirm the lamentations of the students.

> Example 14: Student (Interview analysis)
> _Madam, my problem is how to use words appropriately when_
> _I'm writing essays. Particularly, word forms like does, doesn't, haven't._

The responses from the tutors' questionnaire however showed that the students used lexical cohesion frequently in their write-ups. When tutors were asked how they thought their students value cohesion and coherence in writing essays. Four out of the total 5 tutors constituting 80% said their students put appreciable premium on coherence and cohesion in writing their essays. While 1 tutor constituting 20% out of the 5 tutors said his students displayed little value on cohesion and coherence in their write-ups as shown in Table 1. Inferences drawn from the inconsistencies of the three sources of data are ascribed to the inability of tutors to assess students' writings with due diligence because of overwhelming numbers characterized by Ghanaian classrooms. The findings

were also attributed to tutors being carried away by the students' wide deployment of repetition under reiteration without considering the other types and sub-categories such as collocation.

Correlation between use of cohesive devices and quality of essays

To address the second part of question that requires the relationship between the cohesive devices employed by the participants and the quality of their essay writing, the researcher cross-examined the number of cohesive devices used by each student. She then compared the scores of the student to the cohesive devices used statistically. Among the 60 essays, 35 had somewhat correspondence between the use of the devices and the quality of essays. The researcher realized that there was a positive relationship between the use of cohesive devices and the quality of essays only in those essays where the devices were appropriately used to derive cohesive force. It was, therefore, concluded that the indispensability of cohesive devices in determining text quality depends largely on the ability of the writer to use them to derive the intended cohesive effect. The findings show consistency with Akindele (2011) research findings. His findings from the two academic papers analyzed demonstrated how the appropriate deployment of cohesive devices determined text quality. The results showed that cohesive text was determined by grammatical or lexical cohesive devices. The variety of cohesive devices found in the two papers he analyzed realized grammatical and lexical interconnectedness by the linguistic means and semantic means through which the text operated as a whole. Likewise, Jafarpur (1991) measured the appropriate deployment of cohesive devices and text quality in undergraduates' essays. The study revealed that cohesive ties serve as a measure to text quality. Yang & Sun ((2012) also studied Chinese writers' essays and reported a high degree correlation between the total number of correctly used cohesive devices and essay quality. Liu and Braine (2005) in a similar way analyzed the use of cohesive devices in Chinese undergraduate non-English majors. Their findings highlighted a high degree correspondence between the number of cohesive devices used and writing quality.

Conclusion

The findings demonstrated that the students were able to deploy 4183 cohesive devices based on Halliday and Hassan's (1976) model covering reference, substitution, ellipsis, conjunctions, and lexical cohesion constituting reiteration and collocation in their write-ups. Reiteration as one of the lexical category was the first dominant in the frequencies. The students were able to repeat words that depict the same meaning in their essays. The results also exhibited how the appropriate use of cohesive ties determined the quality of the students' writing. The findings however highlighted instances where the students could not establish cohesive effect because of inappropriate use of the cohesive devices.

Recommendations

It is established that appropriate deployment of cohesive devices ensures text quality, so tutors and college students should consider these devices in their classroom interaction to enable the students to communicate fluidly in the writing mode. Tutors should employ vocabulary building strategies in their lessons to enable students to acquire a large range of vocabulary to support their writing ability. Tutors could also consider avoiding explicit lesson delivery and use assistive tools to make their lessons more interactive to provide students the opportunity to practice the deployment of the cohesive devices.

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