LEXICAL COHESION IN STUDENTS' ARGUMENTATIVE ESSAY AMONG A SELECT GROUP OF FILIPINO COLLEGE STUDENTS

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ABSTRACT

This study analyzed the lexical devices used by undergraduate students in their argumentative text using Halliday and Hasan (1976) and Halliday's (2004) taxonomy. One hundred forty-eight argumentative essays were analyzed. The essays underwent interrating by three independent raters using a 20-point rubric and were grouped according to rating. Repetition was the most frequently used lexical cohesive device among the three groups of essays. Antonyms, meronyms, and hyponyms followed respectively. Super ordinates and collocation occurred less frequently in the essays. There was a low correlation between the frequency of lexical devices and writing quality. Therefore, there was no significant relationship between lexical cohesive devices and writing quality. Qualitative findings reveal that synonyms in the highly-rated essays were utilized by the students to denote the positive effects and to define technology. Antonyms were used for comparison and contrast and to denote the positive effects of technology in the low-rated essays. Unlike in the highly-rated essays where synonyms were used to give positive effects of technology, antonyms were used to denote positive effects of technology in the low-rated essays to achieve such communicative purpose. Other lexical devices assisted the students in fulfilling their writing requirement. Hyponyms were employed to explain how a particular concept contributes to or is a part of a bigger concept. Meronyms were used to give examples of a concept and to define a term. Superordinates were utilized to give a specific kind or brand of a more general idea.

Keywords: Cohesion, Lexical Cohesion.

INTRODUCTION

Cohesion in writing is a problem among second language learners when required to submit texts for academic requirements and how to solve this problem is still a challenge to teachers and researchers (Liu, 2000, p. 28). Moreover, Liu (2000, p. 30) reasons that students' lack of cohesion result from a want of lexical ties. Teachers may not have addressed cohesion problem maybe because the teaching of writing courses have been focused on the discussion of functional connectives, which is also a problem of students, instead of providing help in expanding students' vocabulary and facilitating understanding of acquired lexical items, "overlooking an important element for text cohesion which is content lexical ties" (Liu, 2000, p.28).

Text production or writing is meaning making and lexical items help carry out these meanings. The relationship between lexical items and structures when put together create a unified text. The text provides the context for the creation and interpretation of lexical relations, just as the lexical relations help create the texture of a text (Hoey, 1991, p.8). According to Halliday and Hasan (1976), texture is a text property that is also referred to as coherence. And coherence is created by the linguistic resources of the language while cohesion refers to the semantic relations in a text (Halliday & Hasan, 1967 as cited by Carell, 1982). Additionally, a text to be successful must possess what De Beaugrande and Dressler (1981 as cited in Cheng, 1996) developed as the seven criteria of textuality, which include - first, cohesion which refers to the grammatical dependencies within and across sentences; second, coherence which is the knowledge that provides the conceptual undergirding of a text; third and fourth, intentionality and acceptability that are reciprocal criteria which capture the fact that the writer must intend to produce a cohesive, coherent text that fulfills specific goals; fifth, situationality – a user-centered criterion which

refers to the match between a text and the context for which it is intended; sixth, intertextuality which is a user-centered criterion that captures the fact that how one writes and reads a text depends on knowledge of other texts of that type; finally, informativity which a user-centered criterion which means that writers must be able to anticipate the amount of information shared by their readers.

The use of lexical cohesive devices as a factor determines writing quality is another interesting question for second language writing researchers. Thus, cohesion studies have been done for quite a while now. Coming from this point, this study is another attempt to answer whether cohesion determines writing quality "particularly in this country where studies on cohesion are wanting and lack of cohesion in students' writing is one of second language teachers' biggest concerns" (Mojica, 2004, p. 124). Thus, this paper hopes to contribute to the dearth in literature on cohesion studies in the Philippines. Likewise, the study may generate insightful findings in the teaching of writing since a "well-developed lexical knowledge can equip students in writing more lexically cohesive papers" (Mojica, 2006, p.122).

Literature Review

A number of studies had been conducted in foreign countries to determine the relationship of cohesive devices with the quality of writing. However, in the Philippines, Castro (2004) & Mojica (2006) may have been the only published scholars in this field.

Witte and Faigley (1981)explored the usefulness of Halliday and Hasan's theory of cohesion to analyze students' essays and found that the frequency of lexical cohesion indicates that the writers of high-rated essays are better able to expand and connect their ideas than the writers of the low-rated essays. Writers of high-rated essays, however, form many more lexical collocations. Thus, they claim that lexical collocation is the subcategory of cohesion that best indicates overall writing ability. However, Allard & Ulatowska (1991) suggested certain cautions in using cohesion as a measure of text quality when they examined the relationship between cohesion and text quality in children's writing. Results of their study show that there were marked differences in cohesive properties across discourse types,

indicating a higher degree of cohesiveness in the narrative texts. Results point to the multidimensional and context-specific nature of cohesion. These contrasting findings challenge second language writing researchers to prove whether or not the use of cohesive devices is significantly related to writing quality.

Another study conducted by Tierney and Mosenthal (1981) examined the cohesive ties as a means of measuring and evaluating coherence in 12 Grade twelve students. It was concluded that the cohesion of a text bears no direct, causal relationship to the coherence of a text. Likewise, Khalil (1990)analyzed cohesion and evaluated coherence in 20 expository compositions written by Arab freshman EFL learners. The result shows that almost all of the lexical reiteration ties are repetitions of the same lexical items. This result is not surprising since there is a tendency to repeat words and phrases in a discourse strategy of religious and literary written Arabic. A very weak correlation between the number of cohesive ties and the coherence score of the text was noted in his study. Similarly, Zhang (2005) examined 100 sample compositions from 4845 compositions written by college non-English majors who took part in the 2004 National Entrance Test of English for M.A./M.S. The findings reveal that these Chinese college students employed a variety of cohesive ties in their English compositions, among which lexical category had the highest percentage, followed by reference and conjunction. The results of the quantitative analysis suggest a weak relationship between the total number of the ties used and the composition scores. Moreover, Jin (2001) studied 18 papers of six graduate students across three genres and language proficiency. Further, the use of the same word or repetition has a higher mean than the other lexical ties. This result confirms the findings which say that Chinese rely on zero anaphora and repetition for cohesion. Additionally, Chen (2008) investigated college students' use of cohesive devices and the relationship between the number of cohesive features and writing quality. An analysis of 46 essays collected from 23 EFL undergraduates has shown that the students were able to use various cohesive devices in their writing. Lexical devices had the highest percentage of use, followed by reference devices and conjunctions. The study showed no significant relationship between the

number of cohesive devices and writing quality.

Still, the study of Chen & Yu (2002) analyzed high school students' compositions to see how they exert lexical cohesive devices in their writings to achieve cohesion and to see if there is any difference in the use of lexical cohesive devices between high and low level students. The result shows that repetition is commonly used by high level and low- level students. No difference is shown between high and low level students' compositions in the use of repetition, antonym, general words and hyponyms. High-level students are better in the use of synonym and collocations. High-level students have good skill to use these lexical devices, though there may be no statistics showing there is difference between the two level compositions.

One published scholar in the Philippines, Castro (2004) compared the degree of cohesion and coherence in the essays written by thirty Filipino college freshmen and analyzed how the social construction of meaning was made evident in their writing. Results showed that repetition and use of synonyms were the most common means of establishing lexical cohesion. The findings suggest that the students' lexico grammatical choices reflect the interrelationship of language and culture.

An experiment was conducted by Zhou (2007) to show whether it is possible to improve the quality of the compositions of the students on the aspect of cohesion by teaching them Halliday's cohesion theory. They found out that the teaching of cohesive devices is helpful in improving the cohesion of the English compositions of the graduate students. The areas in which the most effect has been achieved seem to be the device of conjunction in grammatical cohesion, and "reiteration" in lexical cohesion. Hence, it is quite necessary to spend some time in teaching cohesive devices in the writing course of the graduate students in China, and perhaps anywhere else. It should be helpful in improving the writing skills of the students in the area of textual cohesion. Similarly, Mojica (2006) investigated the most preferred types of lexical cohesion used by 30 ESL learners from the Graduate School of one comprehensive university using Halliday and Hasan's (1976) theory on repetition as a subtype of reiteration and Liu's (2000) categorization of this type of cohesion. Results showed that repetition was the most frequently used type of lexical cohesion by both groups sampled. The students also frequently employed related words like situational synonyms, situational antonyms, lexical items with superordinate/hyponym relationship, and text-structuring words. Holistic scores revealed more than 50% of the student papers obtained an average rating in overall lexical cohesion. Results could be considered useful in improving the contents of the Advanced Academic Reading and Writing course of the University, and in deciding what classroom exercises could best be given to the students to help them achieve a higher level of lexical cohesion when they write. It can be said, therefore, that if cohesive categories are taught to students they are able to write more cohesive papers.

This study draws from the different findings of previous researches on cohesion and analyzes the relationship between writing quality and lexical cohesive devices in the essays written by undergraduate students in a comprehensive university in the Philippines by answering the following research questions; what lexical cohesive devices are employed by undergraduate students in their argumentative essay?; is there a significant relationship between the frequency of lexical cohesive ties in low, mid and high-rated with the quality of writing? and, what are the lexical cohesive features in the students' essays?

Methods

Design

This study analyzed quantitatively and qualitatively the lexical devices used by undergraduate students in their argumentative text using Halliday and Hasan (1976) and Halliday's (2004) taxonomy. One hundred forty-eight argumentative essays were analyzed. The essays underwent interrating by three independent raters using a 20-point rubric. A frequency count was done to account for repetition, synonyms, antonyms, hyponyms, meronyms and collocation used in the essays. Textual analysis was done to describe the cohesive features in the students' essays. The first 100 words of the essays were analyzed.

Framework for Analysis

Halliday and Hasan (1976) and Halliday's (2004) concept of lexical cohesion were used as framework for analysis of

the students' essays. According to Halliday and Hasan (1976 p.276), lexical cohesion is the cohesive effect achieved by the selection of vocabulary.

Reiteration and collocation are the two kinds of lexical cohesion. Reiteration involves the repetition of a lexical item, the use of a general word to refer back to a lexical item, and a number of things in between – the use of a synonym, near-synonym, or super-ordinate. The following are the sub-categories of reiteration:

- Repetition which is the reoccurrence of a word in a text. For example, Algy met a bear. The bear was bulgy. (Halliday, 2004,p.571). In this example, bear is the repeated lexical item.

- Synonymy that refers to the relation between lexical elements whose sense is the same or nearly the same. For instance, Everyone cheered. The leader acknowledged the applause (Halliday,2004,p.573). Here, cheered is synonymous with applause.

- Antonymy which is the relationship of items with opposite senses. For instance, He fell asleep. What woke him was a loud crash (Halliday, 2004, p. 574)

- Hyponymy that refers to the specific-to-general relationship between lexical items- (1) the class of thing (2)superclass or subclass or another class at the same level, for example life-people.

- Meronymy which is a lexical cohesive relation between two items – one item being part or member of the other item. For meronymy, the item expressing 'part' or 'member' builds a cohesive link with the first item expressing 'whole' or 'be a kind of' as in fruit is a kind of food.

- Super ordinate that is the relationship established between a name and a more general class or a concept and an example. In this example, E.T. has bought a Boeing 747. He actually lives in the plane, (Khalil, 1989, p.361). Boeing 747 is a kind of plane.

- Collocation is the co-occurrence of lexical items that are in some way or other typically associated with one another, because they tend to occur in similar environments. In lexical cohesion, it exists between words in similar textual context. The difference between

the two interpretations of the term is that in lexical cohesion the mere co-occurrence of items is not a sufficient criterion. It is when lexical items with a meaning relation between them "tend to occur in similar lexical environments because they describe things that tend to occur in similar situations or contexts in the world." In the following sentences, the pair of lexical items inside and outside generate collocational cohesion: You can't smoke inside the class. You can smoke outside (Khalil, 1989, p.361).

Corpus

One hundred forty-eight argumentative essays written by undergraduate students' enrolled in English3 or academic writing were analyzed. The essays were rated by three independent raters using a 20-point rubric. After the inter-rating, the essays were grouped according to low-rated (0-6), mid (7-13) and highly-rated (14-20).

The mean score of the essays is 10.39. Therefore, essays with six points or below were regarded as low, essays with greater or less than 10.39 but not more 14 were regarded as average or mid and essays with 19 points are high. The standard deviation is 2.54 which means that the students have similar writing ability and that the essays are comparable.

The Writing Task

The students were asked to express their opinion in an essay of 1,500 words. The topic was "Does modern technology make our lives better or was life easier when technology was simpler? Following the process approach to writing, the students were asked to write drafts of their paper and the final essay was the text submitted to the writing teachers and was analyzed.

Interrater Reliability

The inter-raters were three teachers of English in the tertiary level. They have been teaching Writing for a number of years now and had attended trainings in the use of rubrics to assess students' writing ability. The inter-rater reliability result using Cronbach Alpha is 0.847, which suggests that there is almost perfect agreement among the three inter-raters. The Cronbach Alpha result also suggests that the students have almost the same writing ability.

Results

Table 1 presents the overall frequency of cohesive devices used by undergraduate students in their argumentative essay. It can be noted that repetition with 32.42% is the most frequently used lexical cohesive device by the students followed by synonyms with 31.64%. Antonyms followed with 14.10% while hyponyms occupy 11.68%. Meronyms were used 56 times or 7.69%. Superordinates and collocation occurred less frequently in the essays. The students could have utilized repetition as a cohesive device more frequently than other categories for definiteness of ideas.

Table 2 shows the frequency and percentage of lexical cohesive devices in the three essay groups in terms of ratings. In the low-rated essays, antonyms with 41.18% were the most frequently used lexical device by the students followed by repetition with 29.41%. There were no instances of hyponyms and superordinate in the low-rated essays.

Repetition is the highly occurring lexical cohesive device with 33.73% in the mid-rated essays while synonyms occupied 30.48%.

In the highly-rated essays, synonyms occupy 39.37% followed by repetition with 26.77%. It is noticeable that superordinate and collocation were least occurring lexical cohesive devices in the three groups of essays.

Repetition as the most frequently used lexical cohesive device among the three group of essays reflects one character of ESL essays that 'use primarily repetition in establishing lexical cohesion' (Castro, 2004; Connor, 1984; Norment, 1994 as cited in Castro, 2004). The high frequency of repetition in the essays confirms the findings of Castro (2004). She further explained in her study as cited by Connor (1984) that L2 English writers did not favor the use of synonymy in their essays is not always true.

Table 3 presents the relationship between lexical cohesive devices and essay ratings. As the table indicates, no significant correlation was noted between lexical cohesive devices and the low-rated essays ($r = .500$). However, a negative relationship was seen between lexical cohesive devices and mid-rated essays ($r = -0.41$). Additionally, a low but positive relationship exists between lexical cohesive devices and highly-rated essays ($r = .016$). Therefore, there is no significant relationship between lexical cohesive devices and writing quality.

The three groups of essays were qualitatively analyzed using the same Halliday and Hasan's categories to describe the lexical cohesive features in the essays.

Low-Rated eEssays

Lexical Devices	Essay Rating	r
low rated	.667	0.5
Mid-rated	.647	-0.41*
Highly-rated	.946	.016*

*Significant at 0.05

Table 3. Relationship Between Lexical Cohesive Devices and Essay Rating

	Repetition	Synonyms	Antonyms	Hyponyms	Meronyms	Super Ordinate	Collocation	Total
Total	236	231	102	85	56	13	5	728
% based on total	32.42%	31.64%	14.10%	11.68%	7.69%	1.78%	0.68%	100%

Table 1. Overall Frequency of Lexical Cohesive Devices

Type	Low-rated frequency	%	Mid-rated frequency	%	Highly rated frequency	%	Total
Repetition	5	29.41%	197	33.73%	34	26.77%	236
Synonyms	3	17.65%	178	30.48%	50	39.37%	231
Antonyms	7	41.18%	81	13.87%	14	11.02%	102
Hyponyms	0	0	73	12.50%	12	9.45%	85
Meronyms	1	5.88%	41	7.02%	14	11.02%	56
Superordinate	0	0	13	2.23%	0	0	13
Collocation	1	5.88%	1	0.17%	3	2.36%	5
Total	17	100%	584	100.00%	127	100.00%	728

Table 2. Frequency of Lexical Devices in Three Groups of Essays

Use of Antonyms

Antonyms were the most frequently used lexical cohesive device in the low-rated essays.

Antonyms were used for comparison and contrast. Antonyms were also used to give the good effects of technology. The following extracts from the students' essays show how antonyms were used:

Essay 24: What if we remained simple like before and never advanced at all

Essay 150: The unreachable become within our reached, the unbelievable became real, the difficult became easy, the slow became swift and the impossible can now become possible

In essay 24, the lexical items simple and advanced create antonymous relationship which is used to compare the quality of life people have if technology has never developed. In essay 150, the lexical items unreachable and reached, unbelievable and real, difficult and easy, slow and swift, impossible and possible all create antonymous relationship. These lexical items were used to give the positive or good effects of technology.

Use of repetition

The repetition of a lexical item was predominantly used to state the influence of technology in the life of people as seen in essay 149 while in essay 150 the word is repeated to explain how far technology has reached.

Essay 149: Nowadays technology were part of life of a person, technology help people to do things…

Essay 150: Our technology has been reaching its unprecedented height and several wonders are being invented out of this high technology.

Mid-Rated Essays

Use of Repetition

Repetition was used to stay on the topic, elaborate or explain the topic. The following examples show how they were utilized to achieve such purpose:

Essay 3: As time goes by, technology evolve. As technology is becoming more advanced …

Essay 9: …, robots will take over the world, the first cloned human brain will be implanted in a robot….

Essay 11: Did you ever think about a life with modern technology? How about a life with simpler technology?

Moreover, repetition was used to talk about the sector that is benefitting from technology as seen in essay 91 and 11. In essay 19, from whom or where does improvement of technology come is explained and a kind of technology is given in essay 9.

Use of Synonyms

Synonyms are used for definitions, to cite the effects of technology whether positive or negative. Synonyms also helped the students justify their reasons or substantiate their claim on the topic.

Essay 44: The prehistoric discovery of the ability to control fire increased the available sources of food and the invention of the wheel…

Essay 46: Technology today has made life easier and quicker

Essay 84: Technology, general term for the process by which human beings fashion tools and machines…

In essay 44, 46 & 85, the good effects of technology are given while in essay 51, the bad effect is mentioned through the use of synonymous words like discovery-invention, easier-quicker, damaged-depleting and struggles-difficulties. However, in essay 84, the use of synonyms is for definition.

Use of Antonyms

Antonyms are used for comparison and contrast – technology before vs. Today

Essay 33: What we experience today in our modern life is all because of technology, in the past years we have already achieved…

Essay 36: In spite of their benefits however, there are faults with in the growing of artificial intelligence

Essay 49: Similarly, modern technology has two sides, mainly the advantages and the disadvantages.

Essay 76: … unlike before, for example a telegram will take days or even weeks to reach the intended reader, but today with the use of cell phones and the internet…

In essay 33 and 76, there is comparison between before and today in terms of technology. The lexical items

advantages and disadvantages in essay 49 and benefits and faults in essay 36 establish antonymous relationship.

Use of Hyponyms

Hyponyms were used to explain how a particular concept contributes to or is a part of a bigger concept.

Essay 29: Who doesn't want to live a convenient life? Probably, no one. Because of the many things that people experience…

Essay 75: It is vacation time and Kenneth has found haven in his laptop. He plunged himself into the world of social networking.

The lexical items life and people in essay 29 create hyponymous relationship in the sense that the lives of people have become convenient because of technology. In essay 75, social networking is one of the things a person can do using his laptop.

Use of Meronyms

Meronyms were used to give examples of a concept as shown in the following extracts:

Essay 40: medieval technology saw the use of simple machines such as the lever, the screw, and the pulley

Essay 48: Some of the creations that have really changed our lives are the computer, telephone, internet and electronic mail, television, cell phone

Essay 70: Technology is a branch of knowledge …drawing upon such subjects as industrial arts, engineering, applied science and pure science.

Essay 111: Modern technology provides of with many time saving devices such as cars, telephones, microwaves, etc

Lever, screw and pulley are examples of simple machines as enumerated in essay 40. In the same manner that cars, telephones, microwaves are devices as used in essay 111. Some creations of technology are computer, telephone, internet, etc as specified in essay 48. The use of the words in italics all form meronymy. However, in essay 70, meronyms are used to enumerate subjects involving technology in an attempt to define the term.

Use of Superordinate

Superordinates were used to give a specific kind or brand of a more general idea.

Essay 26: Had it not been for the Einsteins and Newtons, who are born with new names in every era…

Essay 71: When I was in preparatory school, the only game console we have is Family Computer.

Essay 112: …most especially the countries that are most engaged in technology like the country of Japan

Einstein and Newton are superordinates of names in essay 26, while Family computer is a superordinate of game console. In essay 112, Japan is one of the countries engaged in technology. The use of superordinates assisted the students in elaborating their text by giving examples such as the ones given in the extracts above.

Highly-Rated Essays

Use of Synonyms

Synonyms were the frequently occurring lexical device in the highly-rated essays. They were used to give the good effects of and to define technology as evident in the following examples:

Essay 2: From the simple tools and gadgets used by the past generations technology has come far.

Essay 14: Technology's major accomplishments have left man amazed and mesmerized and everywhere around the world…

Essay 100: …it could either provide progress in the lives of people by proposing convenient modifications … or create confusion…

Essay 116: Technology is a very broad concept and is used to refer to several branches of science and study.

In essay 2 and 14, the positive effects of technology are given while in essay 16, technology is defined. However, in essay100, it mentioned both the positive and negative effects of technology.

Repetition is also a frequent lexical device in the highly-rated essays.

Repetition was used to refer back to a lexical item or stay on the topic and to define a term as shown in the following extracts:

Essay 14: Technology has always been around man and continues to….Technology's major accomplishments have left man…

Essay 77: The term technology originated from the Greek word…. Technology is a branch of knowledge that deals with the creation and use of technical means…

Essay 86: … these are just a mere portion of what modern technology has for us in this modern world. Anywhere you go, you see people with these kinds of modern technology in their hands.

In essay 14 and 86, the word technology was repeated in order for the students to stay on the topic while in essay 77 repetition was used to define the term technology.

Use of antonyms

Antonyms were used for comparison and contrast as exemplified in the following:

Essay 106: Think of how people before used to struggle to create fire, now we can make one with just one click

Essay 100: … it turns opportunities to problems…

The kind of life people have before and now is compared in essay 106, and how technology creates solutions to problems is talked about in essay 100.

Use of Meronyms

Meronyms are used to give examples of a more general concept as shown in the following examples:

Essay 86: Computers, auto-pilot vehicles, robots, touch-screen gadgets and Internet – these are just a mere portion of what modern technology has for us in this modern world.

Essay 87: Flying cars, voice-activated devices, artificial intelligence, advanced military weaponry and touch screen technology are some of the technologies being developed.

Essay 96: This is why developing countries insist on getting utilities such as hi-tech vehicles , computers with fast internet, and cellphone providers…

The different outputs of modern technology are enumerated in essay 86 and 87, whereas

In essay 96 the examples of utilities given created meronymic relationship.

Discussion

This study yielded three significant findings. First, undergraduate students use a variety of lexical devices in their essays although repetition is the highly occurring device among the three groups of essays followed by synonyms, antonyms, hyponyms, and meronyms. This finding is similar to the findings of Tierney and Mosenthal (1981), Khalil (1990), Chen & Yu (2002), Castro (2004), Zhang (2005), Mojica (2006), Zhou (2007)and Chen (2008). However, there is a very small number of superordinate and collocation in the students' essays.

The high frequency of use of repetition reflects earlier characterization of ESL essays as using primarily repetition in establishing lexical cohesion (Castro, 2004; Connor, 1984; Norment, 1994 as cited by Castro, 2004). Repetition and synonymy were shown to characterize good essays (McCulley, 1985 in Castro, 2004), or the written products of advanced ESL writers (Norment, 1994). Castro (2004) further explains that the uniformity in the choice of cohesive devices implies a collective consciousness produced by literacy as a social act." It also shows how L2 writing in the classroom can be a "socially situated response to particular writing contexts and communities" (Hyland, 2003, p. 17 as cited in Castro) and how "a writer's choices are always context-dependent" (p. 21).

Second, a low correlation between the number of lexical cohesive devices and the quality of the essays written by the students was noted which suggests that the number of lexical devices is still not the measure of writing quality. This finding runs parallel with the study of Tierney and Mosenthal (1981), Khalil (1990), Chen & Yu (2002), Castro (2004),Zhang (2005) and Chen (2008). Thus, it can be said that the frequency of lexical cohesive devices is not a gauge of writing quality.

Third, in the qualitative analysis, it was found that the use of synonyms characterize the highly-rated essays while repetition characterize the mid-rated essays and antonyms describe the low-rated essays.

Synonyms in the highly-rated essays were utilized by the students to denote the positive effects of technology and to define technology as exemplified by tools-gadgets, amazed-mesmerized, advancement-development, technology-science. Repetition in the mid-rated essays was used to stay on the topic, elaborate or explain the topic. The lexical items that were repeated were technology-technology, life-life, changing-changing,

ideas-idea. Antonyms were employed for comparison and contrast and to denote the positive effects of technology in the low-rated essays as shown in the following – unreachable-reached,unbelievable-real, difficult-easy, slow-swift, impossible-possible. Unlike in the highly-rated essays where synonyms were used to give positive effects of technology, antonyms were used to denote positive effects of technology in the low-rated essays to achieve such communicative purpose.

Further, other lexical categories assisted the students in fulfilling their writing requirement. Hyponyms were employed to explain how a particular concept contributes to or is a part of a bigger concept as exemplified by life-people, brainwaves-person, social structure-nation. Meronyms were used to give examples of a concept and to define a term as evident in the following - simple machines-the lever, the screw, and the pulley, devices-cars, telephones, microwaves, subjects-industrial arts, engineering, applied science and pure science. Superordinates were utilized to give a specific kind or brand of a more general idea as evident in Einstein, Newton-names, game console-Family Computer, country-Japan.

Conclusion

The objective of this study is to analyze the lexical cohesive devices used by undergraduate students in their argumentative essay. The findings show that the undergraduate students use a variety of lexical devices in their essays although repetition is the highly occurring device among the three groups of essays.

There is a low correlation between the number of lexical cohesive devices and the quality of the essays written by the students. Thus, the number of lexical cohesive devices is still not a measure of writing quality.

The high percentage of use of synonyms in the highly-rated essays may characterize advanced ESL writers. Certain lexical cohesive devices may have been chosen by the students to fulfill certain language functions; thereby, supporting the concept of language form and function.

Based on the findings of this study, one pedagogical implication for the teaching of writing is for second language writing teachers to teach all the categories of lexical cohesion so that students can create texture in their essays

especially superordinate and collocation since these two types occurred less frequently in the students' essays analyzed. The use of superordinate could help the students in elaborating or explaining the topic given to them in fulfilling their writing requirements. As suggested by Zhou (2007) teachers could spend some time in their writing courses to teach vocabulary words because "lexical knowledge is an important predictor of success to be honed further" (Verhallen & Schoonen, 1998, p.452 as cited in Mojica, 2006). Likewise, well-developed lexical knowledge can equip students in writing more lexically cohesive papers (Mojica, 2006, p.122). The teacher may give his/her students a text with missing words to fill in. The missing words or blanks to be filled in by the students may require them to give a synonym, antonym, hyponym, meronym, superordinate or even a collocation of underlined word/s. In turn, the students could develop one type of competence i.e. collocational competence. According to Brashi (2009) collocational competence is perhaps one of the highest levels of linguistic proficiency that learners can attain. Furthermore, lexical collocation is the subcategory of cohesion that best indicates overall writing ability (Witte & Faigley, 1981). As suggested by Zhang (2007) the teaching of cohesive devices is helpful in improving the cohesion of the English compositions of the graduate students in China. Hence, it is quite necessary to spend some time in teaching cohesive devices in the writing course of the graduate students in China, and perhaps anywhere else. It would be helpful in improving the writing skills of the students, at least in the area of textual cohesion.

Another implication is for second language writing researchers. Other text types that undergraduate students write aside from argumentative could be a good corpus, since there could be differences in cohesive properties across discourse types. The whole text could be analyzed in terms of both grammatical and lexical cohesive devices. Factors that might gauge writing quality can be studied also.

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