

LEXICAL COHESION ANALYSIS ON SCOPUS INDEXED-JOURNAL ENTITLED “A NEW CONTROL METHOD FOR POWER BASED ON DYNAMIC EVOLUTION CONTROL “

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ABSTRACT

Cohesion is a semantic concept and part of the system of a language. The language can be orally or written. One of the indicators of good discourse (written) is having good cohesion and coherence aspect. This study is entitled Lexical Cohesion Analysis on Scopus-Indexed-Journal entitled “A New Control Method for Power based on Dynamic Evolution Control“. The aim of this study is to identify and describe the lexical cohesion in the Scopus-indexed article journal. This study is a qualitative research. The data sources in this study an article Scopus indexed-journal was obtained by purposive sampling. Furthermore, analysis of the data was done by identifying and classifying the data that related to cohesion, based on the theory of Halliday and Hasan (1976) and also analyzing used Spradley (1980). Based on the analysis, it was found five things related to cohesion and coherence. First, lexical cohesion devices which are used consist of repetition, synonymy, antonymy, hyponymy, and meronymy. The most frequent lexical cohesion used is repetition. Therefore, it can be of an interest to the (future) writer or researcher who are involved in writing journal. The study concludes that lexical cohesion determines writers' tones in writing article and this ultimately contributes significantly enough in constructing persuasion and strong desire to persuade editorial boards of the journal to accept the article. It has also been highlighted that the findings of this study could be broaden in grammatical cohesion, and also be beneficial to researchers and ESL/EFL learners especially in persuasive and academic writing. Those aspects and factors can be considered to certain paper or journal article whether rejected or accepted in Scopus-indexed journal.

Keywords : cohesion, lexical cohesion, Scopus indexed-journal.

INTRODUCTION

A text may be spoken or written (Bloor & Bloor, 2004; Halliday & Hassan, 1976), prose or verse, dialogue or monologue. It may be anything since the text is a unit of language in use. It is not a grammatical unit, like a clause or a sentence; and it is not defined by its size. The text is used for the purposes of communication by real people in actual circumstances. Therefore, in studying a text needs contextual approach because a text has linguistic context which is dynamic and using language itself is a dynamic process. In addition, Hassan (1976) stated that a text has texture, and this is what distinguishes it from something that is not a text. It derives this texture from the fact that it function as a unity with respect to

its environment. A text is also known as semantic unit. In this case, a unit not of form but the meaning. So, it can be concluded generally that text is a language which is doing the function in certain circumstances.

“A New Control Method for Power based on Dynamic Evolution Control“ is one of the text articles published in the international journal of Engineering and Applied Sciences. The journal is scopus-indexed. This article is in electrical engineering field which is written by Samosir, a lecturer in Lampung University with H-indexed about 13 Scopus citation. As an article scopus-indexed, it can be assumed generally that the article is qualified and having high quality standard.

There are many parameters and indicators

that an article can be called qualified. The several indicators are having novelty and written in good language either grammatically or systematically. As known that everyone especially every academician or scholars want to be able to publish their ‘master piece’ into reputable international journal, such as international journal Scopus-indexed. So, it needs the exemplary journal article to be able to analyze according to the writing skill by using good language which is qualified. Finally, the article is proper to be published to the reputable international journal. Regarding with the qualification of the journal article above, it realized that good discourse is a discourse which gets to pay attention the interrelationship between one sentences to each others. As known that language consists of meaning and form while the relationship in the discourse can be differentiated into two types. There are form relationship and semantic relationship (meaning relationship) which is called coherence (Sumarlam, 2003).

While, the concept of cohesion is a semantic one, it refers to relation of meaning that exist within the text, and that define it as a text. Cohesion occurs where the interpretation of some element in the discourse is dependent to another. This is another way of the notion of a tie. When this happens, a relation of cohesion is set up, and the two elements, the presupposing and presupposed, are thereby at least potentially into a text. Cohesion is a semantic concept and part of the system of a language (Halliday & Hassan, 1976, 4–5). It is defined by Thompson (2014: 147) as the linguistic device: “by which the speaker can signal the experiential and interpersonal coherence of the text, and is thus a textual phenomenon”. Cohesive relation fits into the overall pattern of language. Cohesion

is expressed partly through vocabulary and partly through grammar. (Halliday & Hassan, 1976) see text connectedness realized by grammatical cohesion and lexical cohesion. Grammatical cohesion consists of four kinds of cohesion devices such as reference, substitution, ellipsis, conjunction. While the lexical cohesion consists of general noun (hyponym), reiteration, and collocation.

On the borderline between grammatical and lexical cohesion is the cohesive function of the class of general noun (Halliday & Hassan, 1976). The term of borderline here because a general noun is itself a borderline case between a lexical item (member of an open set) and a grammatical item (member of closed system). It means that the class of general noun is a small set of nouns having generalized reference within the major noun classes, those such as ‘human noun’, ‘place noun’, ‘fact noun’ and the like. Examples: *people, person, man, woman, child, boy, girl* [human]; *laws, cultural science, socials, politics, international relationship, linguistics* [social sciences]. Those items are often neglected in English description, but they play a significant part in verbal interaction and are also an important source of cohesion in the spoken language. The following examples illustrate their cohesive function:

Many scholars who tried to examine and studied cohesion and coherence either in general view of cohesion or education point of view. Some of them studied the grammatical cohesion in scientific text which the most problems of cohesion are conjunction (FerDOSIPour, 2015; Itaristanti, 2016; Klimova & Hubackova, 2014; Widiatmoko, 2015). Instead, in the students’ text book on bahasa Indonesia for 12th year students, the main issues of cohesion is about using additive and

causal conjunction (Maharani, 2018).

One of them researched about grammatical cohesion and coherence on abstract which included in scientific text (Klimova & Hubackova, 2014). Specifically, the research studied the classification of the discourse connectives in the selected abstracts follows Quirk et al. (1985) which divided the discourse connectives into seven classes. Besides, the Quirk et al cited in Klimova & Hubackova (2014) did the assessment model to see how the discourse connectives view the connection between two linguistic units. The units concerned may be very large or very small: sentences, paragraphs, or even larger parts of a text at one extreme; at the other extreme, they may be constituents of a phrase realizing a single clause element. The result, the research is found four classes of discourse connective such as listing conjunct, appositional conjunct, resultative conjunct, and contrastive conjunct. The most frequent conjunct used is listing conjunct (*in particular, second, then, finally, furthermore, equally, firstly, in addition, moreover, more specifically, next, thirdly, etc*). Therefore, It might enhance not only students' writing skills but also develop their thinking skills through semantic conjunct used.

Moreover, the study of cohesion and coherence had ever been examined to see the effectiveness of it through using theme-rheme (Dejica & Cozma, 2013). The study was methodological approach in translation, but actually it still correlated with the effort to improve the students' skill in writing. The study has the following advantages: 1) it provides a basis for ST understanding and in this way students become aware of different patterns of textual organization; 2) it facilitates the creation of source or target-

oriented texts and shows how the source text may have different target versions in terms of internal organization, structure and focus, writer's intention, client's requirements or target language preferences. In the fact, it is still inadequate or inconsistent application of translation strategies in above word level may lead to instances of incoherence at the global level of discourse.

Based on the explanation above either researches or theoretically, it is interesting to study more specific on lexical cohesion since it has not been yet to study comprehensively. So, main purpose of the current research is to describe the kinds of lexical cohesion found in the journal article scopus-indexed to see the quality of the text

METHOD

Research Design

The present study used a case study applying descriptive-qualitative approach. The study tried to describe how the text gives the big impact toward the potency of the text which is able to accept by the international journal scopus-indexed. This study used one of the article entitled *A New Control Method for Power based on Dynamic Evolution Control* written by Samosir, a lecturer in Lampung University with H-indexed about 13 Scopus citation. The data were all lexical cohesive devices such as general word, reiteration, and collocation.

The current view to validate the data in this research is using method and source triangulation. Triangulation, using several forms of data collection to study a single phenomenon, is another method for increasing validity. By collecting data from several sources, each individual data point was strengthened (Creswell, 2009). Method triangulation was the triangulation technique related with the

technique of collecting credible data. It can be done by using various methods in collecting data by doing content analysis. After the data collected, it was analyzed by qualitative data analysis which included: (1) domain analysis, (2) taxonomic analysis, (3) compound analysis, (4) cultural themes analysis. (Spradley, 1980)

RESULT AND DISCUSSION

Clasification of Lexical Cohesion

Based on the analysis result which has been done by the research, the research found several numbers of lexical cohesion in source text. There are 1337 data in word form in the text and found five kinds of lexical cohesion emerged. Lexical cohesion was one element which has correlation each other realized in word form or phrase. Those lexical cohesions are: a) repetition (206 data or 86.55 %); b) synonymy (14 data or 5.88 %); c) antonymy (6 data or 2.52 %); d) meronymy (6 data or 2.52 %); and hyponymy (6 data or 2.52 %). The data distribution can be concluded in the following table :

Table 1. Table of Lexical Cohesion Distribution in Source Text

No	Jenis	Jumlah	Prosentase
1	Repetisi	206	86,55 %
2	Sinonimi	14	5,88 %
3	Antonimi	6	2,52 %
4	Hiponimi	6	2,52 %
5	Meronimi	6	2,52 %
TOTAL		238	100

Based on the table above, it can be known that the most of lexical cohesion used is repetition, second rank is synonymi, and the third rank which has same number is antonymy, hyponymy, and meronymy. Every single example and exlanation will be provided in the explanation belows :

Repetition

Repetition is a form of lexical cohesion related with the repetition of the words. The word usage refers to certain lexical item. Repetiton can also be inflection and derivation. The following example of repetition found in the introduction part of the journal article:

“According to the growth of (1) power electronic application, the use of the (2) power (1) inverter is increased. (3) Power (2) Inverter is the most important part in dc to ac conversion equipment such as the uninterruptible (4) power supply (UPS), (1) induction motor drive and (2) induction heating. The main feature of a well-designed (3) inverter is its ability to provide clean and stable ac voltage regardless of a type of load connected to (1) it. (2) It must also have the ability to recover from transients caused by external disturbances as quickly as possible”.

Based on one of the parts of introductory paragraph above, known that there are four words which is undergoing repetition process; There are in word *power*, *inverter*, *induction*, and *it*. Those words are undergoing repetition process both in word form and phrases form such as the word *power* emerged three times in these following phrases: 1) *power electronic application*; 2) *power inverter is increased*; 3) *Power Inverter is the most important part in dc to ac conversion equipment*; 4) *the uninterruptible power supply (UPS)*;

Tere is word *induction* which is used twice in these phrases: (1) *induction motor drive* dan (2) *induction heating*. Pronoun *it* repeated twice in clause *“The main feature of a well-designed inverter is its ability to provide clean and stable ac voltage regardless of a type of load*

connected to *it*". **It** must also have the ability to recover from transients caused by external disturbances as quickly as possible". *It* in the second clause refers to the pronoun *it* in the previous clause which has similar meaning, it is *design inverter*.

Synonymy

Synonymy is lexical cohesion which has similar meaning relationship between one constituent and others. Synonymy is also called lexical equivalency. Pay attention on the paragraph (introduction) belows:

*"In this paper, a new approach for power inverter controller's synthesis based on dynamic evolution control theory is **presented**. The **proposed** dynamic evolution control exploits the non-linearity and time-varying properties of the **system** to make it a superior controller. This control **method** tries to overcome the mentioned problem of linear control by explicitly using the dynamic equation **model** of the inverter for control synthesis.*

*The dynamic evolution control is expected to obtain several advantages such as zero **steady** state error, wide range stability, and robust. The synthesis process is simple and requires a quite low bandwidth, **simple** calculation, and it is **easy** to be realized in digital. So, this method is suitable for digital control implementation. Moreover, the dynamic evolution control is operated at **constant** switching frequency. Therefore, the complexity of power filtering problems is reduced".*

At the bold words above are the examples of synonymy related with the main topic discussion in the article journal. The word *presented* (dihadirkan in Indonesian) which is in verb phrase form (past participle) has meaning relevance with the phrase *proposed* (ditawarkan) which

is in noun phrase *the proposed dynamic evolution control*. The research assumed that the word presented and proposed are still interrelated since both of them refer to one thing about dynamic evolution control theory which is proposed or created by the researcher of journal article.

Other examples are noun *method* will be in line with *technique, way, process, system, scheme, manner, routine, mode, means, approach, style, procedure, and etc* if all of them are traced by using Microsoft Word Thesaurus Dictionary. In the paragraph above, the word *method* related with the word *approach* (pendekatan). Method is work mechanism which has certain system used to conduct a project or work in order achieving the goals expected. The definition based on Kamus Besar Bahasa Indonesia 5th edition. Meanwhile the word "pendekatan" (*approach*) has the meaning "an effort in running research activities to make relationship with the people as research subject and the method to achieve the definition about the research problems.

According to Merriam Webster Offline Dictionary, *method is a careful or organized plan that controls the way something is done*. In addition, the word approach has meaning *to make advances to especially in order to create a desired result*. So, it can be concluded the context *method* in nominal group control method has relationship with the word *system* in the clause *time-varying properties of the system to make it a superior controller*. Seen based on the word *method* and *system*, the word *system* is labeled the first before the word *method*. The next marker which marked the correlation between *method* and *system* were the existence of determinative pronoun in the sentence *this control method*. The

determiner *this* in this context refers to controller system.

Antonymy

Antonymy is lexical cohesion stated that the lexical meaning which has contradictive or contrast meaning between one constituent and others. These are the examples of antonymy which is found by the researcher in the article journal which are taken randomly in research findings and discussion part.

*“Where V_{dc} is the dc **input** voltage, $\alpha = t_{ON}/T$ is duty cycle, i_L is inductor current, V_O is **output** voltage, L is inductor inductance and T is switching period”.*

The word *input* in the phrase *the dc input voltage* above has other contrast constituents in the phrase *output voltage*. Both of them is joining each other in two different physics equation to count dynamic equation of single phase inverter.

Other examples are the word *small* and *large* in the following paragraphs as discussion based on the simulation result of proposed dynamic evolution control performance.

*“The superiority of the proposed controller can be judged by evaluating its performance under **large signal disturbance**. Figure-8 shows the performance of the proposed dynamic evolution control when a **large load disturbance** (from **no-load** to **full load**) is imposed. From the figures, it can be observed that the proposed controller exhibits good transient performance”.*

*“To show the effectiveness of the proposed dynamic evolution control in handling **small-signal disturbance**, a sudden **small load disturbance** (from 20% to 50% load) is imposed to the system. Figure-7 shows the results for proposed controller performance. The*

controller accomplishes to maintain output voltage close to reference voltage”.

Based on the bold words above, explicitly can be seen that there are two words which have contradictive meaning. Both words are the word *small* which is in phrase *small load disturbance* and the word *large* which is in phrase *large signal disturbance* and *large load disturbance*. Beside those words (*small* and *large*), the other words can be identified as antonymy form. They are *no-load* is contrast with the word *full-load*. Based on English version, there are marker that those words contradict each other. They are negative marker *no* and positive marker *full*. In Indonesian version, there are many examples of words which use affixation such as suffix *non-* (*bukan*) to state contrast meaning, for instance: “*mukim*” (stay at certain place for long time) and “*nonmukim*” (tentative at certain place for short time); “*PNS*” (civil servant) with “*nonPNS*” (not civil servant), and others. In the case on word *no-load* above actually has been adequate if it is contradicted with the word *load*. But, by adding word *full* by the original writer, it will be more explicit to strengthen the meaning.

Meronymy

Meronymy is a concept of meaning which refers to whole part from small part of something such as the relationship between the trees, branches, roots, leaves, and other parts. The constituent which has general meaning is called superordinate and the constituent which has particular meaning is called hyponym. Here is the one of the data example found in the conclusion part of the text about meronymy.

*“This paper presents a **dynamic evolution control for single phase power***

inverter. The performance of dynamic evolution control under small and large load disturbance condition has been investigated under simulation test. Simulation results show the dynamic evolution control shown many advantages such as fast response and good transient performance. Hardware results show the controller accomplishes to regulate the converter output voltage keep on steady-state at 120 V, 50 Hz reference”.

The context which is bold above stated that the original writer of the source article describes and repeats the statement that his research describes about the dynamic evolution control as superordinate. It is one of the part of the research object, power inverter with single phase. Based on the trial of power inverter model with single phase, it is obtained many advantages. The advantages are marked by using the word shown many advantages which refers to the advantages obtained. Those advantages are the part of dynamic evolution control as main topic of research subject.

Hyponymy

Hyponymy is lexical cohesion that has meaning lexical relationship hierarchial between one constituent and each other constituents. Here is the research finding of hyponymy in the article:

*“According to the growth of **power electronic application**, the use of the **power inverter** is increased. **Power Inverter** is the most important part in dc to ac conversion equipment such as the **uninterruptible power supply (UPS)**, **induction motor drive** and **induction heating**. The main feature of a well-designed inverter is its ability to provide clean and stable ac voltage regardless of a type of load connected to it. It must also have the ability to recover from transients*

caused by external disturbances as quickly as possible”.

Based on the bold word, it can be known that the noun phrase *power inverter* is a part of *power electronic application*. And power inverter has other parts which is smaller and more specific, it is *uninterruptible power supply (UPS)*, *induction motor drive*, and *induction heating*.

CONCLUSION

Cohesion as described by (Halliday, M.A.K & Hassan, 1976: 4–5) is a semantic concept and part of the system of a language. It is defined by (Thompson, 2014: 147) as the linguistic device: “by which the speaker can signal the experiential and interpersonal coherence of the text, and is thus a textual phenomenon”. While, lexical cohesion (Bloor, T & Bloor, 2004) is concerned with the use of lexical elements in discourse, so they are independent of structure. They are associated in meaning to other elements previously mentioned. In the other words, lexical cohesion is the result of chains of related words that contribute to the continuity of lexical meaning in the text.

Based on the research findings, it can be concluded that there are five kinds of lexical cohesion. They are repetition, synonymy, antonymy, meronymy, and hyponymy. As known in the research findings that the most frequent lexical cohesion which used is repetition. The study concludes that lexical cohesion determines writers’ tones in writing article and this ultimately contributes significantly enough in constructing persuasion and strong desire to persuade editorial boards of the journal to accept the article. It is supported by several research that overuse of repetition shows

intercorrelated in the text (Benbrahim & Ahmad, 1995; Malah, 2016).

This repetition shows that there are lexical chains. These lexical chains are a direct result of units of text being "about the same thing," and finding text structure involves finding units of text that are about the same thing. Hence, computing the chains is useful, since they will have a correspondence to the structure of the text. Determining the structure of text is an essential step in determining the deep meaning of the text.

The general function of cohesive devices is to collaborate paternal links of the text in order to produce a good coherence within the text. On the other words, the function of cohesion is text formation (Klimova & Hubackova, 2014). At each use of cohesion devices, there is certain purpose. The reader can reach to such purpose through using his/her knowledge of the world which is related to this particular topic of discourse.

It seems similar to what Benbrahim and Ahmad (1995) said that an analysis of lexical cohesion, primarily by counting repetitions, synonyms, superordinate terms and paraphrases, leads to the establishment of a network of sentences, some tightly bonded to each other, whilst others have weak bonds or no bonds at all.

The study is not only on a particular aspect of lexical cohesion but also on the systemic functional linguistics in several aspects that need to be studied. One interesting thing to note is that this research focuses on lexical cohesion in general. In this sense, a further direction of research includes a deeper study of the hierarchical organization of vocabulary, establishing hyperonym-hyponym relations are still potential to study.

Given all the conditions described in the results, the study has hopefully

contributed to enlighten on these linguistic aspect while someone writes an academic writing such as journal article. It is need to be master not only for linguists but also extending to writing mechanism which is all above still under discuss and rather contentious. Thus, the output of journal article published in journal Scopus indexed based on the problem triggers and its correlation with the products of researchers' actual writing; especially in developing and using lexical cohesion are still correlated. According to these findings, the authors or researchers with somewhat low interest in the text might not well process the text itself (Ferdosipour, 2015)). Therefore, there is the likelihood for the writer to make his/her writing attractive some much so that the text's degree of understandability and readability could be, consequently, increased.

It has also been highlighted that the findings of this study could be broaden in grammatical cohesion, and also be beneficial to researchers and ESL/EFL learners especially in persuasive and academic writing. Those aspects and factors can be considered to certain paper or journal article whether rejected or accepted in Scopus-indexed journal. However, starting from problems classification stated in the beginning, the breakdown of the specific typologies of lexical cohesion are not analyzed yet. This mini research based on a pilot study in order to support the expert or future research or writer to make good argument in their research, especially developing the paragraph. This research hopefully will be beneficial to a partial re-evaluation of the outcomes and bring the benefit for teaching and learning writing. So, to strengthen and sharpen the study, the future researchers are expected want to research the specific item such as

conjunction, or other aspects in cohesion and coherence.

Acknowledgement

The researchers thank to P3M of State Polytechnic of Jakarta lecturer for funding in doing this research project study. The researchers also thank to other colleagues who had given support and shared the idea in finishing the project.

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