



# Linking Adverbials in Indonesian EFL Students' Essays: A Corpus-Driven Study

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## Abstract

Writing is the activity of arranging and organizing ideas that need some logical connectors to make the ideas cohesively structured. There are several plausible means for cohesiveness, including linking adverbials (LAs). This study examines the LA categories found in EFL students' academic essays and explores how EL students use them. The data were collected from students' essays compiled as a learner corpus, *Learner Corpus of Academic Writing*, comprising 52,404 words. The present study employed *LancsBox* as the corpus tool and *The Louvain Corpus of Native English Essays* as the control corpus to assist the analysis. The study results show that all primary categories of LAs are found in the corpus. However, the subcategory transition to another topic is absent from the corpus. In the frequency of use, causal resultative LAs outnumber all other categories, followed by additive and adversative LAs. As for the least frequent LAs, the study identified sequential types. In comparison to the native writer corpus, it is found that there are shared similarities, including the categories and the subcategories of LAs found in both corpora. Regarding the frequency of use, the most frequent types are relatively similar with different positions, namely causal resultative and additive LAs, while the least frequent type is sequential. These results suggest more considerations in designing writing materials, especially in regard to transition markers belonging to the sequential category.

**Keywords:** academic writing; corpus; linking adverbials; EFL

## Introduction

When learning a new language, one of the important skills to master is writing. Several aspects should be considered to constitute a text, including the semantic unity of the ideas conveyed in the text, so textual continuity is created or called *cohesion* (Flowerdew & Mahlberg, 2007; Grisot, 2018; Halliday & Hasan, 2014;

Yang & Sun, 2012). For creating textual cohesion, alongside coordinators and subordinators, linking adverbials are essential since they indicate the relation between parts of the text (Biber et al., 2021; Lei, 2012; Yin, 2014). Linking adverbials (LAs) connect clauses, sentences, and paragraphs (beyond clauses), while coordinators and subordinators link clauses within sentences (Biber et al., 2021; Liu, 2008). According to Liu (2008), LAs can mark several different semantic relationships of discourse units, such as additive (*that is, likewise*), adversative (*however, on the other hand*), causal/resultative (*as a result, consequently*), and sequential (*first, meanwhile*). This four-way classification system is crucial since it represents the fundamental textual relations and enables the writing to function as a text (Halliday & Hasan, 2014). Liu (2008) underlined two significant reasons for focusing on LAs: (1) the importance of LAs in language use and learning and (2) the inadequate description of LAs in grammar books and textbooks. Thus, LAs are salient features that should be considered in writing (Biber et al., 2021; Lei, 2012; Liu, 2008).

The importance of LAs has also been a part of the discussion in second and foreign language writing (Gao, 2016; Lei, 2012). Previous studies have demonstrated that LAs are crucial in second and foreign-language writing because they help learners build logical links of different units in a text (Ahmad & Way, 2020; Gao, 2016; Leedham & Cai, 2013; Lei, 2012; Wang, 2022). Furthermore, different disciplines or registers might rely on LAs distinctively (Yin, 2016). However, these studies showed that second and foreign-language learners found some difficulty in using LAs. Some studies proved that ESL and EFL learners overused or underused particular LAs in comparison to native writing (Ishikawa, 2010; Lei, 2012; Nizar & Munawaroh, 2019), which can weaken their writing (Ahmad & Way, 2020). In addition, there was also register-inappropriate use, e.g., using colloquial LAs in the academic context (Liu, 2008). Therefore, this study explores the use of LAs in students' writing and compares it to native writing to find out the discrepancies in LAs usage.

Previous studies on LAs have been focused on written and spoken academic contexts. In written academics, those studies can be categorized into the studies of native writing, ESL learners writing, EFL learners writing, the comparison between ESL/EFL learners to native writing, and the comparison of novice academic writers to professional academic writers. To begin with, some previous research on LAs in written academic English focused on single-language data, i.e., native English/ESL/EFL. In the native English context, Liu (2008) reported the findings of the investigation of LAs in five registers (spoken, academic, fiction, news, and others), yield variations in the distribution of LAs. Overall, LAs in fiction are less frequent than in speaking and academic writing, and the news shows the least use of LAs.

Similarly, Pipatanusorn & Wijitsopon (2019) explored the use of LAs in native English writers of various genres in present-day English. This study claimed that LAs occur most frequently in academic writing and least frequently in fiction and media texts, with additive LAs occurring most frequently across text types. The results

emphasize the distinct characteristics of each text type or genre. Regarding academic prose, Techarsatitwong (2015) examined LAs of results in written academic English as compiled in COCA and showed that the most common LA is *thus*, followed by *therefore*, and *hence* respectively. This study also demonstrated the use of *so*, which is frequent in written academic English in the middle position.

Some research has also focused on the discrepancies in LAs usage in the ESL and EFL context. Regarding the ESL context, Appel & Szeib (2018) studied the use of LAs among learners from various L1 backgrounds, which showed that L1 Arabic writers overuse additive LAs adverbials, contrastive LAs are overused by L1 Chinese writers, and appositional LAs are overused by L1 French writers. This study indicates that each linguistic background might have its consequence aligned with the use of LAs. As for the EFL context, Leedham & Cai (2013) showed that Chinese students dominantly use certain LAs, e.g., *besides*, *on the other hand*, and they tend to disregard informality and use LAs in the sentence-initial position.

Earlier research on LAs also compares the use by native speakers and non-native speakers of English. In the ESL context, Dutra et al. (2019) examined the use of LAs of Brazilian ESL learners and English native writers and claimed the differences between them concerning the syntactic position and meaning of the LAs. Whereas in the EFL context, previous studies identified the mismatches of LAs use of native and EFL learners. Ishikawa (2010) reported the discrepancies in LAs usage among native and Asian non-native writers in terms of the quantity of essay writing and the tendency to overuse additive LAs by Asian non-native writers. Similarly, Liu (2013) found that Chinese EFL learners overuse LAs in their speaking and writing, though they use LAs differently in those registers. The study also revealed a higher frequency of adverbials in speaking than in writing. Furthermore, Jamil et al. (2014) proved that L1 Pakistani writers use additive, summative, and contrastive LAs compared to English native writers. Later, Ha (2016) showed differences in LA use between English native writers and L1 Korean writers since L1 Korean writers overused the sequential and additive categories.

In the Asian context, Nizar & Munawaroh (2019) showed a relatively similar distribution of LAs between native writers and Indonesian EFL learners. However, the latter overused additive LAs and underused causal LAs. Like Nizar & Munawaroh, Ahmad & Way (2020) demonstrated that Malaysian learners only utilized a limited set of LAs in their essays and tended to overuse additive LAs. On the contrary, Lumbangaol (2022) reported a lack of LAs in students' writing due to their low writing proficiency in English. Similarly, in the Japanese context, Nakayama (2021) claimed that Japanese learners tend to overuse sentence-initial LAs and underuse sentence-medial/final LAs. The comparison of English native use of LAs to non-native writers in the Asian context was also made for textbooks. Phoocharoensil (2017) revealed that the LAs used in the Thailand EFL textbooks differ from those in the corpora, e.g., *Corpus of Contemporary American English*. LAs in the corpora seem more informative based on the frequency and authentic academic English. In addition, the use of LAs of results in the textbooks does not cover all possible

common uses found in native-speaker corpora.

LAs have been analyzed based on the perspective of professionalism. Lei (2012) examined LAs in EFL Chinese dissertations and professional writers and identified 33 LAs overused by doctoral students, and some of them were misused. Meanwhile, there are 25 LAs underused by doctoral students. The study also revealed that doctoral students relied more heavily on fewer LAs than professional writers. Cho (2020) compared the LAs used by master students and professional writers. The study showed that master students overused 23 LAs and underused 7 LAs. Also, there was some misuse regarding some LAs, e.g., *on the other hand* with *in contrast* or *on the contrary*.

Some of the aforementioned previous studies have been conducted by focusing on native or second/foreign language data only, and some were done by comparing second/foreign language data to native language repertoire. In the Indonesian context, LA research has been less notorious (Lumbangaol, 2022; Nizar & Munawaroh, 2019) and should be done more frequently to comprehensively describe the learners' language development and mastery. This research specifically focuses on academic writing because this genre is more complex than other genres or registers (Biber & Gray, 2016), and LAs are the common features in academic prose (Biber, 2006; Biber et al., 2016; Biber & Gray, 2016). This study investigates LAs to answer the following questions: (1) What are LAs used by EFL learners in academic writing? and (2) How are the LAs used by EFL learners? Furthermore, this research employs a corpus-based approach meaning that the language data is large which can support a more comprehensive analysis. By conducting a corpus study on the use of LAs, the results can map the learners' language development, especially related to LAs. These can inform writing instructors and materials writers to provide better exposure to the use of LAs.

### **Method**

This is mixed-method research because there are qualitative data (sentences containing LAs) and quantitative data (frequency, percentage, token). This study has several steps: corpus design, data collection (corpus construction, LAs identification), and data analysis.

### **Participants**

The study's participants are sixth-semester students of the English Education Department at Universitas Ahmad Dahlan enrolled in the *Academic Writing* course. The rationale of the participant selection: the students have completed previous writing courses and learned basic writing materials and techniques. In addition, the course syllabus aligns with the study's needs since the outcome is an academic essay.

### **Research Instrument**

The instruments in this study are *Language Background Questionnaire* (LBQ) and a writing task. LBQ provides the linguistic backgrounds of the participants related to

the use of the L1 and L2. The background is necessary to describe the profile of the learners whose writing will be compiled as a *learner corpus* in the present study. This study adopts Flege et al.'s (Flege et al. 1999) LBQ. The second instrument is a writing instruction to collect students' academic writing. Writing instruction was developed to collect students' written production from several topics related to education and technology for the learner corpus ranging from 1500-2000 words. The learner corpus design is generally modified from (Granger, 2008, 2012), which is presented in figure 2.

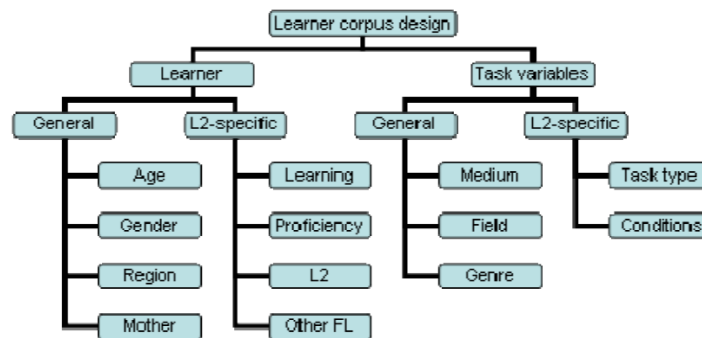


Figure 1. Learner corpus design

Based on the design, the focal points are learners and task variables. Thus, the design of the learner corpus in this study is displayed in table 1.

Table 1. Learner corpus design

Learner		Task variables	
General	L2-specific	General	L2-specific
Age: 19-21	Learning context: FL	Medium: written	Task type: non-exam
Gender: Female, male	Proficiency: Intermediate, B1 written reports, and essays	Field: education, technology	Conditions: timed
Region: Indonesia	L2: Indonesian	Genre: Academic	
Mother: local language(s), Indonesian	Other FL: n/a		

**Data Collection and Identification of Linking Adverbials**

The data collection procedure involves the distribution of writing assignments to the participants with several topics they can select. The academic essay should be written in 1500-2000 words. The writing assignment will be timed and submitted online in a *Google Drive* folder. The compiled texts were cleaned for the exact

measurement of corpus size and the accuracy of query results and collected as a learner corpus named *Learner Corpus of Academic Writing* (LCAW) with 52,404 words. The corpus files were converted into *.txt* format and loaded into a corpus tool, *LancsBox* (Brezina et al., 2020).

Regarding the identification, this study utilizes Liu's (2008) list comprising 110 LAs. All 110 LAs were the search keyword to identify the LAs in the learner corpus and the *KWIC* feature in *LancsBox* was used. However, one LA might carry multiple meanings, thus, the searches were followed up with a manual check to ensure the identified units are LAs and not a conjunction. This is also explained by Liu (2008) as an important step to validate the data.

### **Data Analysis**

The analysis focuses on semantic types of LAs in the students' academic writing and the comparison to native corpora to answer the research questions. The analyses include the classification of semantic functions and the frequency of use. The present study employs Liu (2008)'s classification of semantic functions. The analysis will be confirmed by employing inter-rater agreement to diminish bias in classifying LAs. This step was commonly done in the corpus-based analysis (Oktavianti & Prayogi, 2022; Wang, 2022). Lastly, the results will be compared to those in native corpora of students' essays, *Louvain Corpus of Native English Essays* (LOCNESS) (Granger, 1998), which comprises university-level essays of 324,304 words.

### **Results**

This section presents the types of LAs found in the LCAW. The present study identified all major categories of LAs based on Liu (2008)'s classification; they are emphatic, apposition, adversative, causal resultative, and sequential LAs.

#### **Linking Adverbial Categories in LCAW**

The followings are all LA categories found in the learner corpus.

##### **1. Additive LAs**

The present study identified all subcategories of additive LAs, namely emphatic, apposition, and similarity comparative LAs.

###### **a. Emphatic**

The examples of emphatic LAs found in LCAW are *besides*, *furthermore*, *moreover*, and *in addition*, as follows.

- (1) *Besides*, teachers should be ambitious and professional to support the process of teaching and learning to their students and enhance students' competence.
- (2) *Furthermore*, some students who are from rural background do not have access to the Internet or require smartphones.
- (3) *Moreover*, the applications on their phones, like Instagram, TikTok, Twitter, Facebook, Snapchat, can distract their focus while studying.

(4) *In addition*, teachers who have creative thinking skills can also motivate their students to be more creative in dealing with various areas of life.

b. Apposition LAs

Apposition LAs are also found in LCAW, e.g., *in other words*, *for example* and *namely*; below are some examples from the corpus.

(5) *In other words*, less monetary investment, but the results can be better than the other options.

(6) *For example*, if you study abroad and want to get a job, online education is a good choice.

(7) There are also other factors that become obstacles in implementing online learning, *namely* health factors.

c. Similarity comparative LAs

Another additive type identified in the corpus is similarity comparative LAs, such as *likewise* and *similarly*, as shown below.

(8) *Likewise*, people who do not have the opportunity to continue their education because of limited funds, they still have the opportunity to learn through the online learning system.

(9) *Similarly*, the Facebook organ does not initiative visibly shared new online registration to all friends in an individual's network, encouraging social conformity.

2. Adversative LAs

All types of adversative LAs can be identified in LCAW. Below are examples of each subcategory: proper adversative and contrastive adversative.

a. Proper adversative

Some examples of proper adversative (*while* and *however*) LAs are presented below.

(10) *While* it is indisputable, there is still plenty of schools which still apply corporal punishments.

(11) *However*, the benefits of adding the 21st-century skills to your curriculum are great.

b. Contrastive adversative

The second subcategory of adversative, contrastive adversative LAs are also found in LCAW, as presented below.

(12) *In fact*, a lot of contents are presented on social media with various themes.

(13) *Actually*, I think that this online learning method is considered effective and helpful.

c. Correction

The third subcategory of the adversative LAs is the correction type (e.g.,

*instead* and *rather*) which can be seen in examples (14) and (15).

(14) *Instead*, it should be about declaring your approach to using technology.

(15) *Rather* than missing important class sessions due to weather conditions, students can always attend by participating in discussion boards or chat sessions and watching lectures or reading materials.

d. Dismissal

This subcategory occurs restrictedly (e.g., *despite*), as shown in example (16).

(16) *Despite* all the disadvantages, a new influencer Fadil Jaidi has become popular on social media.

3. Causal/Resultative LAs

LAs of the causal resultative category are also found in LCAW, which is divided into two subcategories: general causal and conditional causal. Some examples are shown below.

a. General causal

General causal LAs found in LCAW include *as a result*, *consequently*, *therefore*, and some others.

(17) *As a result*, using an online education platform allows a better work balance and study, so there is no need to give up.

(18) *Consequently*, those unavailing things that the students do will ruin their mindset and critical thinking.

(19) *Therefore*, every educational institution continues to improve the quality of skills for every educator

b. Conditional causal

Conditional causal LA identified in LCAW is *then* as exemplified below.

(20) *Then*, we also have to ascertain whether the economy can be profitable or even detrimental

4. Sequential LAs

Lastly, there are some sequential LAs identified in LCAW, consisting of nearly all subcategories, namely enumerative/listing, simultaneous, and summative LAs. The examples are as follows.

a. Enumerative/listing

The first sequential subcategory is enumerative, which shows a greater number of type representations. Some examples are written in (21)—(25).

(21) *Firstly*, be flexible in time and place because online learning system is different from ordinary schools.

(22) *Secondly*, it can trigger cyberbullying.

(23) *Finally*, digital minimalism is how we use technology wisely and consciously to help our activities.



- (24) *Lastly*, an English teacher must have collaboration skills so they can work with many people within and outside the country.
- (25) *Next*, replace applications that have been deleted or restricted to use and move to other activities, such as reading comics, painting, or other social activities.

b. Simultaneous

The second subcategory of sequential LAs, simultaneous LAs, are limitedly found in LCAW.

- (26) *Meanwhile*, the cons are many people consider this activity to be a place to flex.
- (27) *At the same time*, the second most users are from 20 to 24 years old.

c. Summative

Summative subcategory examples are seen in examples (28)—(30).

- (28) *In conclusion*, if we can study optimally with the materials given by the lecturers, surely we can get the same knowledge as in face-to-face learning.
- (29) *In short*, people will be attracted if the viral content is what is useful to them.
- (30) *To sum up*, social media has become so addictive to many users from various ages.

It is evident that nearly all categories of LAs are found in the learner corpus under study, LCAW. However, there is one missing/absent subcategory, which is the transition to another topic. This subcategory of LAs belongs to the category of sequential LAs. It is surprising to see the absence of this subcategory since the corpus was compiled from university-level students' essays. Nonetheless, the result might indicate a lack of LA mastery of the learners that should be revisited and taken into account.

***The Use of Linking Adverbials by EFL Learners***

After discussing the findings of LAs types/categories in the learner corpus, this section focuses on the frequency of use and the distribution of each LA in LCAW. Table 2 presents the frequency of use individually.

*Table 2. Frequency of LAs in LCAW*

Category	LAs	Token Frequency	Percentage
<b>(1) Additive</b>			
Emphatic	additionally	1	0,11
	again	1	0,11
	also	6	0,67
	and also	4	0,44
	not only... but also...	10	0,00
	but also	1	0,11
	as well	5	0,55
	besides	20	2,22

	in addition	37	4,11
	in addition to	13	1,44
	further	3	0,33
	furthermore	5	0,55
	moreover	8	0,89
	not to mention	1	0,11
	of course	59	6,55
	too	32	3,55
	Subtotal	206	21,75
Apposition	that is	1	0,11
	in other words	4	0,44
	for example	46	5,11
	for instance	3	0,33
	namely	27	3,00
	Subtotal	81	8,99
Similarity Comparative	likewise	2	0,22
	Similarity	1	0,11
	Subtotal	3	0,33
<b>Subtotal Additive</b>		<b>290</b>	<b>31,52</b>
<b>(2) Adversative</b>			
Proper Adversative	at the same time	3	0,33
	while	43	4,77
	however	50	5,55
	nevertheless	1	0,11
	though	22	2,44
	Subtotal proper adversative	119	13,21
Contrastive Adversative	actually	27	3,00
	in fact	10	1,11
	in reality	2	0,22
	on the other hand	6	0,67
	Subtotal contrastive adversative	45	4,99
Correction	instead	11	1,22
	on the contrary	3	0,33
	rather	12	1,33
	Subtotal correction	26	2,89
Dismissal	after all	2	0,22
	despite	3	0,33
	despite that	1	0,11
	Subtotal dismissal	6	0,67

<b>Subtotal adversative</b>		<b>196</b>	<b>21,75</b>
<b>(3) Causal Resultative</b>			
General Causal	as a result	4	0,44
	because of	5	0,55
	consequently	1	0,11
	hence	1	0,11
	so (sentence-initial)	49	5,44
	so	197	21,86
	therefore	45	4,99
	thus	9	1,00
	Subtotal general causal		
Conditional Causal	then	9	0,98
	Subtotal conditional causal	9	0,98
<b>Subtotal Causal Resultative</b>		<b>320</b>	<b>34,52</b>
<b>(4) Sequential</b>			
Enumerative/listing	first	18	2,00
	firstly	5	0,55
	first of all	2	0,22
	second	14	1,55
	secondly	6	0,67
	third	8	0,89
	thirdly	1	0,11
	finally	5	0,55
	last	2	0,22
	lastly	7	0,78
	last but not least	2	0,22
	next	2	0,22
	then	18	2,00
	and then	2	0,22
	Subtotal enumerative	92	10,21
Simultaneous	at the same time	1	0,11
	meanwhile	1	0,11
	Subtotal simultaneous	2	0,22
summative	In conclusion	11	1,22
	In short	3	0,33
	To sum up	6	0,67
	Subtotal summative	20	2,22
<b>Subtotal sequential</b>		<b>114</b>	<b>12,65</b>

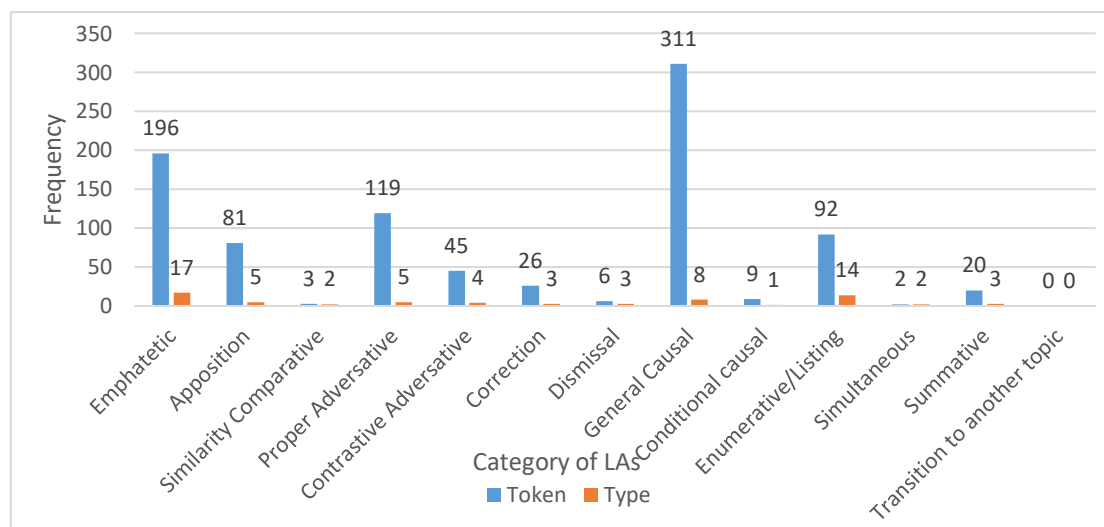
Based on Table 2, it is clear that various LAs found in the corpus and the frequency indicate that the students already make use of LAs in writing their essays. Table 3 presents the token frequency and percentage of each linking adverbial type.

*Table 3. Frequency of LA type in LCAW*

No	Category of LAs	Token	Percentage
1	Causal	320	34,78
2	Additive	290	31,52
3	Adversative	196	21,30
4	Sequential	114	12,39

Table 3 demonstrates that the most frequent type found in students' essays is causal resultative LAs (34,78%), followed by additive (31,52%) and adversative (21,30%). Meanwhile, the least frequent type is sequential LA, with 12,39%. Causal resultative adverbials outnumber all types of LAs in the learner corpus under study.

This present study identified some significant gaps in the token-type ratio regarding token and type comparison, as shown in figure 2.



*Figure 2. Token and Type Frequency of LAs in LCAW*

Figure 2 displays the comparison of tokens and types of LAs in LCAW. Some significant TTR (Type-Token Ratio) scores are based on the graph, such as general causal LAs. This LA type has 8 types with 311 tokens meaning that the TTR is 2,57%. The low percentage of TTR shows the low variety of the words under this category. Another category with a pretty noticeable TTR percentage is emphatic and proper adversative, with 8,67% and 4,2%, respectively. Furthermore, the similarity comparative subcategory is negligible in terms of the token frequency and type frequency. Although the additive category is quite frequent in general, the *similarity comparative* subcategory is included as one of the least frequent LAs in LCAW. These

findings show that, even though the students have used the LAs in their writing, there is a problem in regard to the variants of the LAs indicating the restricted repertoire of LAs.

This study also compares the frequency of LAs found in LOCNESS as the control corpus. Table 4 displays the token frequency and percentage of each primary type of LAs in the corpus.

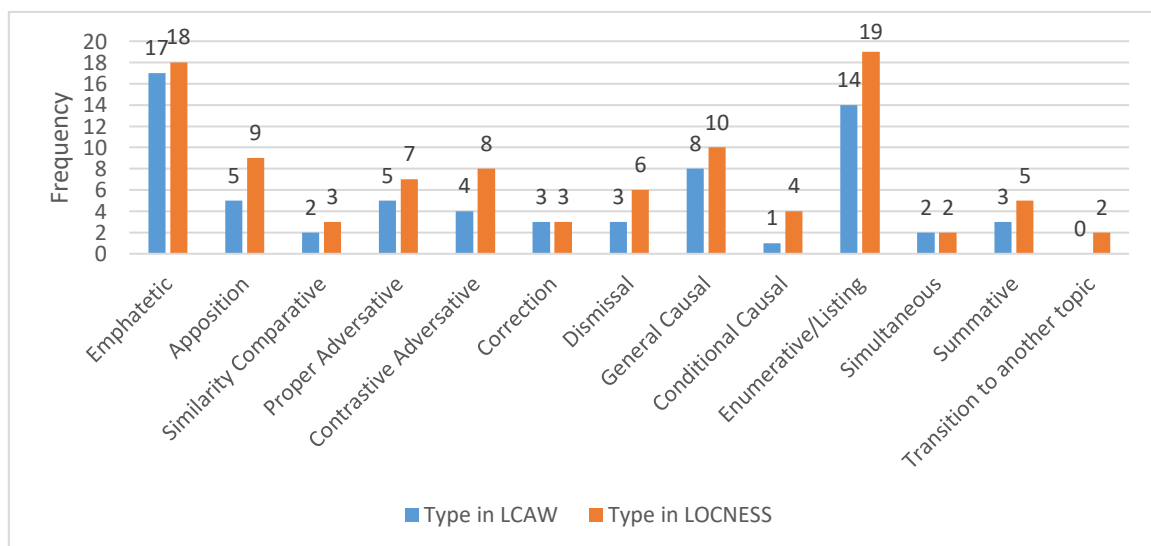
Table 4. LAs in LOCNESS

No	Type of LAs	Token Frequency	Percentage
1	Adversative	1808	37,95
2	Causal	1318	27,67
3	Additive	1189	24,96
4	Sequential	449	9,42

Based on Table 4, the most frequent type found in LOCNESS is adversative type (37,95%), followed by causal resultative (27,67%), additive (24,96%), and the least frequent is sequential type (9,42%).

In comparison to LCAW, there are some points to underline. Table 3 presents the frequency of LAs in LCAW and proves that the most frequent type is causal resultative (34,78%). This result differs from that in LOCNESS because LOCNESS exhibits the use of adversative as the most frequent one (37,95%), and causal resultative occupies the second place with 27,67%. Additive type in LCAW occupies the second position (31,52%), while in LOCNESS it occupies the third position (24,96 %). However, LCAW and LOCNESS shared the same results for the least frequent types, i.e., *sequential* LAs.

As for the type distribution of LAs in LCAW and LOCNESS, figure 2 displays the comparison.



*Figure 3. Type frequency of LAs in LCAW and LOCNESS*

Figure 3 shows that many types have similar numbers in the category and subcategory of LAs, either in LCAW or LOCNESS, e.g., *emphatic, general causal, and simultaneous*. However, certain types have a significant gap in type, e.g., *apposition, contrastive adversative, and enumerative*. The transition to another topic subcategory is not found in LCAW, but there are 2 types representing this subcategory in LOCNESS. In other words, transition to another topic subcategory is absent in LCAW, which should be revisited and considered pretty seriously. However, in a more general sense, sequential LAs are less familiar for foreign learners and native writers, as proven by LCAW and LOCNESS.

### **Discussion**

The study's results demonstrate the tendency of certain use of LAs in the academic context. Students in this study were identified to use causal resultative, emphatic, and adversative LAs compared to the other categories. The current study highlights the importance of specific LAs categories, such as causal resultative, additive, and adversative, and those LAs missing from the corpus (i.e., transition to another topic).

Regarding the findings from other relevant studies, this study can confirm the importance of a particular LA type, i.e., additive. The findings show that additive LAs are the highly frequent LAs (although they are not the most frequent in the present study) following some previous research, e.g., Ahmad & Way (2020), Appel & Szeib (2018), Ha (2016), Jamil et al. (2014), Nizar & Munawaroh (2019). These studies show that people connect ideas in the discourse by utilizing addition or additive markers. However, the current study shows that the additive type is the second most frequent LAs, following causal resultative LAs. This phenomenon is surprising, but considering the texts compiled in this corpus, the widespread use of causal resultative LAs is sensible to provide robust arguments.

This study also proves the use of adversative LAs as the third most frequent type in students' writing, which is in line with the study of Appel & Szeib (2018), Ha (2016), and Jamil et al. (2014). Adversative LAs are important to express contrary opinions, facts, comparisons, and corrections that might be necessary for an academic context. As proven by Liu (2008), academic prose uses more of this LA type than spoken language and fiction registers. However, according to Lei (2012), adversative LAs are the most problematic connectors since they might perform multiple functions and students tend to use them in inappropriate registers. In regard to the less frequent LAs, Ishikawa (2010) found that sequential LAs tend to be underused by EFL learners, which is also relevant to the finding of this study. The present study identifies sequential LAs as the fourth most frequent LAs type. This can be related to the nature of EFL learners with limited exposure to the target language, especially regarding academic language. Many studies have proven the lack of specific linguistic features in academic prose in the EFL context that should be considered more seriously (Ahmad & Way, 2020; Bychkovska & Lee, 2017;

Nakayama, 2021; Oktavianti & Sarage, 2021).

The findings of the current research are also contradictory to some previous studies. For example, Nizar & Munawaroh (2019) claimed that causal LAs are underused by the learners, which does not correspond to the results of this study showing that causal resultative LAs are the most frequent LAs in students' essays. Another thing to consider is the use of adversative LAs. Ahmad & Way (2020) pointed out that adversative LAs are the least frequent LAs, which contradicts this study's result claiming that adversative LAs occupy the third position (not the last one). This might be plausible due to some aspects, including the level of learners' proficiency and the text types of the corpus.

The results of this study also complement those of the previous ones, i.e., similarity and sequential LAs. Regarding similarity comparative, this subcategory has the lowest frequency in LCAW and LOCNESS, indicating that this subcategory is less crucial in students' writing (EFL learners or native writers). As for the absent subcategory, transition to another topic is absent in LCAW. At the same time, it is found in LOCNESS, showing that this subcategory is not familiar to the EFL learners or the learners do not have sufficient knowledge of the category.

Based on the study findings, there are some points to underline concerning LAs teaching and learning. Students should be more aware of the category and variants of LAs since sufficient knowledge of LAs can help improve writing quality. Furthermore, the ideas can be connected more flawlessly and logically. Thus, the teachers should emphasize some categories to the learners, namely sequential LAs and similarity LAs. The missing subcategory should be taught and intensively introduced to the learners, so this category can be part of the learners' linguistic repertoire.

## **Conclusion**

This study shows that students have utilized LAs to create logical connections in their writing. Overall, the EFL learners in this study have some knowledge of LAs and how to use them in their writing. However, some points must be considered, including the variants of the LAs. It is proven by the restricted type of particular LAs and the absence of the transition to another topic subcategory. It is then crucial to revisit the existing teaching materials so the students can be equipped with sufficient knowledge of LAs.

In comparison to the native corpus, LOCNESS, it is evident that there are some differences in the frequency of LAs category and the type comparison also exhibits the fact of some limited variants of LAs in the EFL students' writing. Unfortunately, the present study merely focuses on the LAs categories and subcategories and their frequency of use. The study overlooks other variables of study as the functions of LAs, the patterns of use, the register contexts, etc. Therefore, future research should be able to analyze more aspects, and it is also necessary to collect more data (larger corpus size). The study of LAs and other discourse elements is very potential to conduct, and the findings might contribute robustly to language teaching and

learning.

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