THE COMPARISON OF THE CONJUNCTIONS USED IN ABSTRACTS OF ENGLISH AND MATHEMATICS STUDENTS OF UNIVERSITAS QOMARUDDIN

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Abstract

The goal of this study was to identify the types of conjunctions in abstracts of English and mathematics thesis written by undergraduate students at Universitas Qomaruddin's English and mathematics departments. It demonstrates the similarity of conjunction usage in abstracts. This study uses a descriptive qualitative research design to look at 50 abstracts drawn from 25 English thesis abstracts and 25 mathematics thesis abstracts. By using the conjunction taxonomy developed by Halliday and Matthiessen (2014), the conjunctions in the abstract are categorized and then analyzed. The analysis's findings displayed that all abstracts use the three types of conjunctions—elaboration, extension, and enhancement. In the English department, in elaboration type found 8-word items with 5 variants. Extension type found 214-word items with 7 variants. Enhancement type found 87 words with 14 variants. However, the elaboration type found 12-word items with 2 variants in the mathematics department and extension type 244-word items with 5 variants. Enhancement type found 69-word items with 14 variants. The use of conjunctions in abstract of English and mathematics thesis shows many similarities to the selection and the amount of its use. These abstracts contain a few specific conjunctions but none of the others. Extension conjunctions—particularly those that are positive additives and use the word item "and"—are frequently used in both types of abstracts. The use of conjunctions varies, according to the study's findings. The incorrect use of conjunctions demonstrates the difficulty with writing that EFL learners have. The use of conjunctions in both types of abstracts is similar, demonstrating that students are speaking the same language. For that reason, it is expected that students can apply more variations in their academic writing.

Keywords: *abstract writing, academic writing, cohesion, conjunction*

Introduction

English is a globally recognized language that is extensively utilized in several nations across the globe. The mastery of English in all skills holds significant importance for students The four primary abilities encompassed in language acquisition are listening, speaking, reading, and writing. These skills exhibit interconnectedness. The present study

will concentrate on the domain of written communication. The act of writing is the sole means through which individuals may discover and articulate their thoughts, concerns, and experiences. Furthermore, writing serves as a means for students to articulate their ideas onto paper (Mustikawati, 2019).

According to Gregg & Steinberg (2016) and Hyland (2005), writing is a cognitive activity by which individuals articulate their thoughts and ideas. In order to effectively convey their message in writing, individuals must possess a diverse range of vocabulary. Additionally, students, in this case, structure their ideas into coherent paragraphs, so transforming them into a cohesive textual composition. In addition to that, writing has academic and non-academic genres which also influence the way students should compose their piece of writing (Choemue & Bram, 2021; Ghanbari et al., 2016). As one model that students of university have to deal is to write an undergraduate thesis abstract.

Abstract writing is critical in undergraduate theses since it acts as the study's introduction, providing a complete review of its aims, methodology, findings, and significance. The abstract serves primarily as a strategic tool for potential readers, presenting them with a brief overview of the research and assisting them in deciding whether to read the complete text (Hadi et al., 2020; Mazidah, 2019; Mazidah & Masruroh, 2022; Pandey, 2020). In addition, in general abstracts also allow readers to swiftly assess the study's relevance to their personal interests and field of study. They serve as a key component in academic databases and search engines, enhancing the visibility and accessibility of the research within scholarly communities. Thus, mastering the art of abstract writing not only enhances the clarity and precision of one's research communication but also amplifies its impact and reach in the academic sphere.

Since it consists of the grammatical principles of English writing, there are a number of challenges for students to overcome. Students must also understand the structure of English writing and the selection of words, particularly conjunctions, that will be utilized in their writing. According to Adetoro (2014), an abstract is a concise, objective summary of the essential content of a book, article, speech, report, dissertation, or other work that presents the main points in the same order as the original, but has no literary value on its own. With abstractions, the writer may not need to see or use the original document because the abstract may provide him with sufficient information or serve as a substitute.

Cohesion is the relationship between an element to another element in discourse or text. Cohesion is "the pattern of relations between structures and lexical items which combine together to form a text"(Conrad et al., 2012). Grammatical cohesion plays a pivotal role in shaping the structure and coherence of texts, allowing readers to navigate through complex linguistic landscapes seamlessly. A comprehensive framework for understanding cohesion, highlighting the significance of reference and conjunction in achieving textual unity is also proposed(Halliday & Hasan, 2014). This study builds upon their theoretical foundations to explore the intricate interplay between these cohesive devices and their impact on the overall coherence of texts.

Cohesion, which can be word, sentence, paragraph, or in the whole text level, has an important role in writing. Its form can be the word-level means in one sentence there are one or more cohesive devices. For example "*I and you go to campus*". There two types of cohesive devices in that sentence, '*I* and *you*' function as a personal reference, while 'and' functions as additive conjunction. The sentence-level means there is a relation between two or more sentences. For example "*Hana eats the rice. She eats with her family in the kitchen*". '*She*' and '*her*' in the second sentence refer back to 'Hana' in the first sentence. Based on the examples, cohesion is the tool in making the relationship between the sentences.

In addition, writing extended texts requires the learners' awareness of another important element, namely cohesion, which shows how semantic relationships it set up by overt lexical and syntactic features (Halliday & Hasan, 2014). It means that cohesive is a condition where the discourse is being interconnected because of linguistic factor. Discourse analysis is also interested in how people organize what they say in the sense of what they typically say first, and what they say next, and so on in a conversation or in a piece of writing (Paltridge, 2014:04). Be they lexical or grammatical, these devices have a very strong effect on discourse, since they help listeners or readers to perceive the textual meaning of individual sentences.

In this research, the researchers take undergraduate thesis abstracts as the subject of the study. According to Adentoro (2014) an abstract is a brief objective summary of the essential content of a book, article, speech, report, dissertation or other works that present the main points in the same order as the original but has no independent literary value. In creating a thesis abstract, students should pay attention to the contents. The main components of the abstract are normally background position, aim, and thesis of the article, method of research, and results of research (Anon, 1977; Bailey, 2021; Drury et

al., 2023). An abstract is full of important information. There are several ideas that should be written clearly and completely in order to accomplish the general structure of the abstract. Therefore, students should be able to apply conjunctions in organizing their abstracts.

Conjunctions are used as the theoretical framework in this study to analyze and interpret the data (Halliday & Matthiessen, 2013). Conjunctions help readers make sense of the text as they connect the information in sentences and paragraphs. Conjunction as one type of English cohesion has aroused researchers' interest. First, the utilization of conjunctions in argumentative essays written by Libyan undergraduates majoring in English at Omar Al-Mukhtar University was examined (Hamed, 2014). The result showed that the student of Libyan EFL undergraduates use of conjunctions such as additives (*moreover, and, furthermore*), adversatives (*on the other hand, but, in fact*) and causals (*so, because*) inappropriately in their writing. As of the four subcategories of conjunctions, the use of adversatives was the most problematic to the participants, followed by additives, and causal. The findings of his study verified previous studies that *English Foreign Language* (EFL) learners have difficulty conjunctions in their writing. However, their researches do not examine the utilization of conjunctions in abstracts of academic writings. The present study observes the use of conjunctions in undergraduate thesis abstracts.

There have also been studied in relation to abstracts of academic writings, for example, Ketabi & Jamalvand) 2012) identified conjunction devices in English international law texts and its Farsi translation. The finding showed that both *English International Law texts* (ELTs) and *Farsi Translation Texts* (FTTS) share more similarities than differences in using conjunctions. The common cohesive devices are maintained in Farsi translation for precision, clarity, and logicality. In the similarities on the overall conjunction devices, additive, adversative and causal in ELTs are used nearly as frequently as those in FTTs and can be attributed to the informative function and stylistic features of law texts. Then about differences between ELTs and FTTs in the use of conjunction devices is in terms of their occurrence frequencies. Frequency of additive, adversative and comparative conjunction in FTTs is more than in FTTs.

There are other studies that have studied the use of conjunctions in abstracts. *Conjunctions in Indonesian Undergraduate Thesis Abstracts* was examined too (Kurniati, 2019). Her study identified conjunction in linguistics and literature thesis abstracts in an undergraduate thesis written by undergraduate students in an Indonesian University. The

finding showed that using conjunctions in linguistics and literature theses abstracts shows many similarities in the selection and number of uses of conjunctions. The accuracy of using conjunctions also varies and the most commonly found is positive additives. The similarities are shown in the ways they are used and the total number of their uses. In the ways conjunctions are used, both kinds of abstracts use level of types of conjunctions, both linguistics and literature thesis abstracts use elaborating, extending, and enhancing conjunctions. Next, Purba, Safnil, and Pulungan (2017) examined a comparative study of types of conjunctions used in the results and discussion section of students' RAs (Research Article Students') and Teflin journal articles (JAs). His study identifies the types of conjunctions used in students' RAs and TEFLIN JAs. The researchers find that there is a significant difference between conjunctions used in students' RAs and TEFLIN JAs. The result showed that the most common conjunction used in students' RAs was 'and', while the most common conjunction used in TEFLIN JAs was 'that'(Purba et al., 2017). The type of conjunctions that most often appears in RAs is coordinating conjunctions, while the type of conjunctions that most often appears in TEFLIN JAs is subordinating conjunctions.

Based on the reasons and motivations above, it is necessary to conduct research of the undergraduate thesis of English and mathematics undergraduate students at Qomaruddin University to investigate the use of these conjunctions. This study examines the use of conjunctions in undergraduate thesis abstracts written by undergraduate students of the English and Mathematics program at Qomaruddin University. Here the researchers wonders whether the theses of the two different majors have in common the writing of conjunctions in their abstracts.

The researchers selected undergraduate thesis abstracts from the English and mathematics departments at Qomaruddin University as the subject of this study. This decision was motivated by the researchers' affiliation with the faculty of education, specifically the English education program. Additionally, as a foreign language learner, the researchers aimed to investigate the accuracy of word choices, particularly conjunctions, in the abstracts of English and mathematics undergraduate theses. The researchers also sought to determine whether these abstracts exhibited similarities or differences in the usage of conjunctions, considering the distinct meanings and functions associated with different words. The researchers selected Qomaruddin University as the research site to assess the writing proficiency of its students and offer recommendations for enhancing writing instruction. Hence, doing this research was of significant

importance.

Methods

This research used a descriptive qualitative design. Descriptive qualitative is research that uses a natural setting, intending to interpret the phenomena that occur and is carried out by involving various existing methods (Moleong, 2019). Qualitative data are collected in the form of words or pictures rather than numbers (Fraenkel et al., 2012). The data of this research was conjunctions found in 50 undergraduate thesis abstracts of 25 students from the English Education and Teaching program and 25 students from the Mathematics Education and Teaching program from Qomaruddin University Gresik in 2019-2020. This research focuses on analysing the use of conjunctions in the undergraduate thesis abstract to be studied and it presents the result using simple tables and research descriptions which aims to identify, to analyse, and to compare based on Halliday and Hasan's theory.

There are four data collection techniques, namely observation, interview, documentation, and combination (Sugiyono, 2020). In particular, the techniques used in this research were documentation techniques or document utilization techniques. The document used in this research was the undergraduate thesis abstract of the Qomaruddin University undergraduate students 2019-2020.

Data collection is a process that takes place throughout the study using a set of instruments that have been prepared to obtain data information through note-taking techniques. Here, what it prepares is data or things that are considered importantly related to aspects of the analysis in using conjunctions.

The note-taking technique is a technique or method used to record the data found in a data recording note. After the researchers collected the data, the data were analysed by using qualitative methods.

The steps taken by Researchers in collecting data were following.

- Researchers read the entire 50 undergraduate thesis abstracts intensively.
- Researchers counted the number of conjunctions with the **AntConc** application.
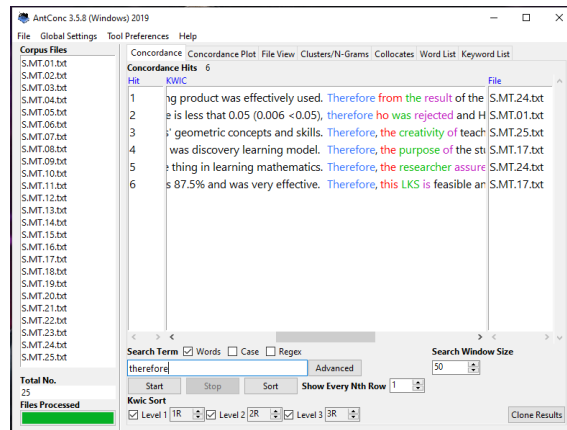
Figure 1. A search for a conjunctive item using AntConc Application

- Researchers analysed various kinds of conjunctions using Halliday and Matthiessen's (2014) taxonomy.
- Researchers carried out the analysis by comparing the results that had been found to find out the similarities in the use of conjunctions.
- The researchers selected and classified the words in the thesis abstract based on the type of conjunction based on the theory of Halliday and Matthiessen (2014).
- After analyzing using the **AntConc** application, the researchers recalculated the words manually to validate any missing words.
- After getting an analysis of the number of conjunction words in the abstract, the researchers analyzed by making a table to make it easier to make a comparison between the two undergraduate thesis abstracts to find out whether there were similarities in applying conjunctions.
- The last process in analyzing data was a conclusion. The researchers made conclusions about the data to answer research questions based on the data findings.

Findings and Discussions

1.   Elaboration

One type of the conjunction is elaboration. Elaboration means one clause that expands another by elaborating on it (or some portion of it) by restating

specifying in greater detail, commenting, or exemplifying. There are two categories of elaborating relation, such as apposition and clarification. The overall range is the same as that of paratactic elaboration, but the category of apposition used here groups' exposition and exemplification together (Halliday & Matthiessen, 2014:615).

One example of this type is apposition, a word or phrase which explained other preceding phrases or clauses. In this type of elaboration some element is re-presented, or restated, either by example, the 'e.g.' relation, or by exposition, the 'i.e.' relation. The item of expository is *"that is (to say)"*, *"in other words"*, *"to put it another way"*, and then *"I mean (to say)"* (Halliday & Matthiessen, 2014:615). The results of the researchers' findings on apposition types can be seen in Table 1 below.

Table 1 Word item subtypes of apposition

Apposition		English	Mathematics
Expository	In other words	√	-
	That is (to say)	√	√
	I mean (to say)	-	-
	To put it another way	-	-
Exemplifying	For example	-	-
	For instance	√	-
	Thus	√	-
	To illustrate	-	-

In the type of elaboration, the researchers only found 2 abstracts from the English department that used this subtype of expository, included the words found only 2-word items "*in other words*" and "*that is*" where each word found only 1 word item. Meanwhile, the researchers found about 7 abstracts from the mathematics department that used this type, and the word they used was only "*that is*" as many 12-word items.

An example of the expository with the item "that is" by researchers in the

abstract of the English department:

"Classroom action research is a study that is recommended to identify problems that will be faced in learning activities which is followed up by completion and also aims to improve the quality of the teaching process." (S.BI.13)

The used of the word item "*that is*" in the quotation (2) is appropriate because it explained what class action research means, but the sentence would be better if the conjunction "*that is*" is omitted so that the sentence becomes: "*Classroom action research is a recommended research to identify problems…*"

Besides the type of expository, there is also a type of exemplifying. The next item from exemplifying is "*for example*", "*for instance*", "*thus*", and "*to illustrate*". Below is an example of the expository with the item "*thus*" by a researcher in the abstract of the English department:

"(6) The teacher can get the feedback and the most frequent of errors by conducting analysis on grammatical error. (7) Thus, in teaching grammatical rules, the teacher can choose or match the more interesting and effective strategies. (8) As the result, the error can be decreased. (9)" (S.BI.05)

The conjunction '*thus*' applied in (4) failed to mark the relation in the excerpt. It is because of the incorrect sentence structure. When S7 and S8 are closely examined, their relationship is inverted; S7 is supposed to be in S8. If S8 is stated before S7 and they are connected by this, the abstract would be more coherent.

Another type of elaboration is clarification. Clarification is to provide more information or a clearer explanation to make something understandable or clear. Here, the elaborated element is not merely restated but rather reinstated, summarized, made more precise, or otherwise clarified for the discourse. There are seven subtypes in clarification (*corrective, dismissive, distractive, resumptive, particularizing, verificative* and *summative*), realized by different sets of conjunction.

In this subtype in clarification, the researchers just found one abstract and one item from English department with the word item "*in fact*" in verificative subtype, but the researchers did not find in mathematic department. It follows from this that conjunction is not necessary when writing abstracts. But a text must

have a means of connecting clauses or sentences.

An example of the use of verificative conjunction with the word item "*in fact*" in abstract of English department:

"In fact, there were still many difficulties faced by the students especially in comprehending English reading text" (4) (S.BI.04)

The conjunction "in fact" in excerpt (6) is well applied. It is used to show a verificative relationship between S3 and S4 in an abstract way. The conjunction "*in fact*" connected sentences–to be able to master in English language, the students must learn it from the basic level. Therefore, students must have fairly good language skills -and there were still many difficulties faced by the students especially in comprehending English reading text.

From the description above, it appeared that there is only one conjunction found in the English abstract and none of them are found in the mathematical abstracts. This showed that their introduction to conjunctions is still not very broad so as not to apply certain conjunctions.

2.   **Extension**

Next, type of the conjunction is extension. The term "extension" refers to how one clause goes beyond another by introducing a new element, making an exception, or providing an alternative. Conjunctions that connect complex clauses and give rise to extension meanings are connectors that are only adding or can be variations. The addition is either positive "*moreover*", "*in addition*", "*and*", "*also*", negative "*nor*" also adversative "*but*", "*yet*", "*on the other hand*", and "*moreover*".

One type of extension is an *addition*. Addition conjunction acts to structurally coordinate or connecting words by added to the presupposed item. Addition divided into positive "*and*", "*also*", "*moreover*", "*in addition*" and negative "*nor*". The results of the Researchers' findings on addition types can be seen in table 4.3. below.

Table 3 Word item subtypes of addition

Addition	English	Mathematics

	And	√	√
Positive	Also	√	√
	Moreover	√	√
	In addition	√	√
Negative	Nor	-	-
	But	√	√
	Yet	√	-
Adversative	On the other hand	-	-
	However	√	-

In this type of addition, all abstracts use this type of conjunction either abstract English or mathematic department. The most widely used of this type is the "*and*" conjunction and the least used is the "*moreover*" conjunction. In the type of addition found by the researchers in the English language department, the researchers found items of the word "*and*" 190 words, "*also*" 9 words, "*moreover*" 2 words, and "*in addition*" 5 words. Then, in the mathematic department, the researchers found items of the word "*and*" 218 words, "*also*" 12 words, "*moreover*" 5 words, also "*in addition*" 5 words.

Below is an example of the addition with the item "*and*" by a researcher in the abstract of the English department:

"What aspects are the most and least difficult that faced by the fifth-grade students of MI Tarbiyatus Shibyan? The objective of this study was to find out the students' difficulties in comprehending English reading text and to find out what aspects are the most and the least difficult that faced by the fifth-grade students of MI Tarbiyatus Shibyan.(6)" (S.BI.04)

The conjunction "*and*" in (6) adds a point to the previously mentioned information. It added the reasons about aim of the study. The first purpose is to find out the students' difficulties in comprehending English reading text and the second purpose is to find out what aspects are the most and the least difficult that faced by students. So, the used of "*and*" is considered very well.

The next type after addition is variation. This variation means that related between clause and topics. In this variation type is divided into 3 subtypes, namely "*replacive*", "*alternative*", and "*subtractive*". The Researchers explained the

results of what types are found in the abstract in Table 4.

Table 4 Word item subtypes of variation

	Variation	English	Mathematics
Replacive	On the contrary	-	-
	Instead	-	-
Subtractive	Apart from that	-	-
	Except for that	-	-
Alternative	Alternatively	-	-

In this variant type, there are several variation subtypes, such as replacive with the word items "*on the contrary*" and "*instead*", subtractive with the word items "*apart from that*" and "*except for that*", alternative with the word item "*alternatively*". From the results presented by the researchers, the authors did not used this type in their abstracts, both in English or mathematic department. This suggests that not all abstracts used these types of conjunctions, only a few conjunctions they used in their abstracts. In addition, there were 2 possibilities that this type was not found in the abstract. First, this type of conjunction was not needed in the abstracts so the author did not use this type. Second, the authors lacked knowledge of these types of conjunctions, especially these types of variation-type conjunction. Because of that, the writer did not use this type.

3. **Enhancement**

Besides elaboration and extension type, there is also an enhancement type. Enhancement is the term used to describe when one clause clarifies the meaning of another by mentioning time, cause, place, manner, or condition. This type of enhancement has more subtypes than the previous 2 types and is more complex. This type of enhancement has several subtypes such as Spatio-temporal: temporal which is divided into simple, complex, and simple internal. Manner is divided into comparison and means. Causal-conditional is divided into general and specific, and lastly, there is a subtype of matter that is divided into positive and negative.

The first subtype of enhancement is Spatio-temporal: temporal. Spatio-temporal: temporal is the relation between two successive sentences. This type of Spatio-temporal has quite a lot of kinds of subtypes, such as from simple type

there are subtypes following, simultaneous, preceding, conclusive. Complex type with subtype immediate, interrupted, repetitive, specific, durative, terminal, punctiliar. Lastly, there is a simple internal type with subtypes following, simultaneous, preceding, conclusive. The results of the Researchers' findings on Spatio-temporal types can be seen in Table 5 below.

Table 5 Word item subtypes of spatio-temporal: temporal

Spatio-temporal: Temporal			English	Mathematics
		Then	√	√
	Following	Next	-	√
		Afterwards	-	-
	Simultaneous	Just then	-	-
		At the same time	-	-
Simple		Before that	-	-
	Preceding	Hitherto	-	-
		Previously	-	-
		In the end	-	-
	Conclusive	Finally	-	-
		At once	-	-
	Immediate	Thereupon	-	-
		Straightaway	-	-
		Soon	-	-
	Interrupted	After a while	-	-
		Next time	-	-
Complex	Repetitive	On another occasion	-	-
		Next day	-	-
	Specific	An hour later	-	-
		That morning	-	-
		Meanwhile	√	√
	Durative	All that time	-	-

Simple Internal	Terminal	Until then	-	-
		Up to that point	-	-
	Punctiliar	At this moment	-	-
	Following	Next	-	√
		Secondly	√	-
	Simultaneous	At this point	-	-
		Here	-	√
		Now	√	√
	Preceding	Hitherto	-	-
		Up to now	-	-
	Conclusive	Lastly	-	-
		Last of all	-	-
		Finally	-	-

In this type of spatio-temporal, researchers found little used of the type of conjunction that students used in abstract English and math department. In the English department' abstracts, researchers found the used of conjunctions with the subtype "simple: following" with the word item "*then*" 4 words, subtype "durative" using only the word item "*meanwhile*" only 1 word. Subtype "simple internal: following" with the word item "*secondly*" only 1 word. as well as the subtype "simple internal: simultaneous" with the word item "*now*" only 1 word. While in abstracts of mathematics department, the used of type "simple: following" with the word item "*then*" 4 words, "*next*" 3 words. The durative subtype used 6 words of the word "meanwhile". And the subtype "simple internal: following" with the word item "*next*" 3 words. The latter is a subtype "simple internal: simultaneous" with the word item "*now*" only 1 word, "*here*" is also only 1 word.

For example of the used of following conjunction with the word item "*then*" in abstract of English department:

"Then, the revised units were tried out. The second try our showed that the three revised units were appropriate for the students." (S.BI.18)

The conjunction "*then*" is used to mark the temporal relationship between the result of try-out and the revised tried out in the example (14). This is well applied to describe the second try-out.

For example of the used of durative conjunction with the word item "meanwhile" in abstract of English department:

"Meanwhile, in reading vocabularies was discovered 67 errors or 93.06% of substitution, 5 errors or 6.94% of insertion, yet no one error in omission." (3) (S.BI.17)

In the use of the conjunction "*meanwhile*" was well used. The conjunction "*meanwhile*" here was used to provide a comparison by connecting between sentences.

The next type after spatio-temporal is manner. Manner gives the additional information that explains how something is done. In this type, there are fewer manner subtypes than spatio-temporal, such as comparison which is divided into positive and negative, and means. The results of conjunctions in the abstract found by Researchers are presented and discussed in the Table 6 below.

Table 6 Word item subtypes of manner

Manner			English	Mathematics
Comparison	Positive	Likewise	-	-
		Similarly	-	-
	Negative	In a different way	-	-
		Thus	√	√
Means		Thereby	-	-
		By such means	-	-

From the results presented in the table above, we could see the results found by Researchers in the abstract of the English and mathematics department on the type of manner conjunction. Researchers only found word items "*thus*" on this type. In the English department, Researchers found word items "*thus*" 2 words, while in the mathematics department Researchers only found 1 word on the word item "thus".

For example, of the use of means conjunction with the word item "*thus*"

in abstract of English department:

"Thus, this research was qualitative research. (4) The data of this research was grammatical error in narrative writing." (5) (S.BI.01)

The conjunction "*thus*" applied in (18) fails to mark means relationship in the excerpt (18). After a carefully examined, the S4 and S5 relationships are reversed. If S5 is stated before S4 and connected with "*thus*", the abstract would be more coherent.

The third subtype of enhancement is causal-conditional. In discourse, the relation of cause figures prominently as a cohesive device. Some cause expressions are general, others relate to result, reason, or purpose. This type has quite a lot of subtypes as in the spatio-temporal subtype: temporal. Various subtypes include general and specific. In specific type is subdivided into result, reason, purpose, conditional: positive, conditional: negative, concessive. The researchers found in abstracts of English and math department to find out what subtypes and word items will be presented and discussed in the table below.

Table 7 Word item subtypes of causal-conditional

Causal-conditional			English	Mathematics
General		So	√	√
		Then	√	√
		Therefore	√	√
		Consequently	-	-
		Hence	-	-
Specific	Result	Because of that; for	-	-
		In consequence	-	-
		As a result	-	-
	Reason	On account of this	-	-
		For that reason	-	-
	Purpose	For that purpose	-	-
		With this in view	-	-
		Then	√	√

Conditional: positive	In that case	-	-
	In that event	-	-
Conditional: negative	Under the circumstances	-	-
	Otherwise	-	-
	If not	-	-
concessive	Yet	√	-
	Still	√	√
	Though	-	-
	Despite this	-	-
	However	√	-
	Even so	-	-
	All the same	-	-
	Nevertheless	√	-

Based on the results presented by the Researchers in the table above, we can know that the author much uses causal-conditional subtypes. In the English abstract, the researchers found a "general" subtype with 18 words of the word "so", "then" for 4 words, and "therefore" for 5 words. In type "specific: conditional positive" with the word item "then" 4 words. "specific: concessive" with the word item "yet" found 2 words, "still" 9 words, "however" 3 words, and "nevertheless" only 1 word. While abstract in mathematics department, Researchers found a subtype of "general" with the word item "so" 19 words, "then" 4 words, and "therefore" 6 words. In type "specific: conditional positive" with the word item "then" found 4 words. In addition, the subtype "specific: concessive" only found one item of the word "still" 3 words.

For example of the use of general conjunction with the word item "so" in abstract of English department:

"Another word, the percentage of the effect increased 26,36% from the total of pre-test and post test score. So, there was any significant effect between students' writing skill achievement before and after taught by using Flashcards as leaning media." (S.BI.16)

The conjunction "so" in example created a cohesive causality relationship

between the clauses it binds to. The clause introduced by "so" is the purpose of what has been mentioned before. The presence of "so" among these clauses makes clear to the reader, that the clause following "so" is intended for what has been mentioned before.

The last subtype of enhancement is matter. Here cohesion was established by reference to the 'matter' that has gone before. As noted earlier, many expressions of matter are spatial metaphors, involving words like point, ground, field; and these become conjunctive when coupled with reference items (Halliday and Matthiessen, 2014: 547). In matter type has 2 subtypes namely positive and negative. Subtypes matter less than in manner types. For further explanation of the types and word items found by the researchers in the abstract is described below.

Table 8 Word item subtypes of matter

	Matter	English	Mathematics
Positive	Here	-	√
	There	√	√
	As to that	-	-
Negative	In that respect	-	-
	In other respects	-	-
	Elsewhere	-	-

In the type of matter, the researchers found two words items of the positive subtype in the abstract. In English abstracts, it was found 32 items of the word "*there*". Of the 25 abstracts, only 8 abstracts do not use this word item. In addition, It is also found more varied words in the abstract mathematics department. The word item "*here*" was found to be only 1 item and only 1 abstract used this word item. Besides the word item "*here*", the researchers also found 13-word items "there" and 8 abstracts used this word item.

For example of the used of matter conjunction with the word item "*there*" in the abstract of English department:

"Using descriptive statistic (mean score, standard deviation t-test, and t-table) the test will be given trough pre-test and post-test. The result of the data indicate that,

there was significant difference between students' pre-test and post-test in experimental class and control class." (S.BI.20)

Overall, among the 50 abstracts, the researchers found 14 subtypes conjunctions taxonomy proposed by Halliday and Matthiessen (2014) in the abstract of English and mathematic department, such as types of conjunction in elaboration, with subtypes apposition; expository and exemplifying, clarification; verificative. Types of conjunction from extension, with subtypes addition; positive and adversative, types of conjunction from enhancement from spatio-temporal: temporal in the subtypes simple; following, complex; durative, simple internal; following, simultaneously, subtypes manner; means, causal-conditional; general, specific; conditional: positive and concessive, matter; positive.

Table 9 Total Conjunction in type of Elaboration

		English		Mathematics	
		Items	**Variants**	**Items**	**Variants**
Elaboration	Apposition	7	4	12	2
	Clarification	1	1	-	-
	Total	**8**	**5**	**12**	**2**

In the type of elaboration, at the subtype of apposition in English abstract, Researchers found 7 items with 4 variants, while in mathematics abstract were found 12 items with 2 variants. For clarification subtypes, in English abstracts was found only 1 item with 1 variant. While in mathematics abstract, Researchers did not find this type.

To get back to the point with the results that the researchers had explained, in the elaboration type, the apposition subtype was found the most in the abstracts of the English and mathematics department. In addition, in previous research by Hamed (2014) also had similarities. Its findings also confirmed that in the clarification subtype especially in the word item "in fact" was the most difficult conjunction for students. It also had similarities with the findings of Researchers in abstract English and mathematics department, in the type of clarification only 1 abstract out of 50 abstracts that used this type.

Table 10 Total Conjunction in type of Extension

		English		Mathematics	
		Items	Variants	Items	Variants
Extension	Addition	214	7	244	5
	Variation	-	-	-	-
	Total	**214**	**7**	**244**	**5**

In this type of extension, we can see the results in the table. In extension type, there were 2 subtypes, namely addition, and variation. In using abstracts, the most widely used conjunction was addition type, as in English abstracts were found 214 word-items and 7 variants. Meanwhile, in the mathematical abstracts were found 244 word-items 5 variants. For sub-type variations, Researchers did not find any word items or variants, this could happen because of two factors: first, the authors did not need that type of conjunction for conjunctions in their abstract. Second, the author lacked understanding of various variants type conjunctions, so the authors were less aware and did not use the type of conjunction.

Table 11 Total Conjunction in type of Enhancement

		English		Mathematics	
		Items	Variants	Items	Variants
Enhancement	Spatio-temporal	7	4	18	6
	Manner	2	1	1	1
	Causal- conditional	46	8	36	5
	Matter	32	1	14	2
	Total	**87**	**14**	**69**	**14**

While in this type of enhancement, we can see the results listed in the table above. In enhancement type, there were 4 types, namely spatio-temporal, manner, causal-conditional, and matter. Researchers found each type of enhancement type in the abstract studied. In the abstract of English department, in the spatio-temporal type there were 7-word items with 4 variants, manner type found 2-word items only 1 variant, causal-conditional found 46-word items 8 variants, matter type found 32-word items only 1 variant. While in mathematics department, in the spatio-temporal type found 18-word items with 6 variants, manner type only found 1-word item with 1 variant, a causal-conditional type found 36-word items 5 variants, matter type found 14-word items 2 variants.

From the results that the researchers had described, we could find out in

the type of enhancement, the subtype most widely used in abstracts in both English and mathematics were the causal-conditional type. The overall number used of conjunctions found by the researchers was higher than in other types, while the least used type was the manner type with the number of variants only 1 found in the abstract.

Of the three types of conjunctions that researchers have described, it can be concluded that there are more similarities in using conjunctions in abstract English and mathematics department. This finding also confirmed previous research (Purba, et.al, 2015) which examined students' RAs (RAS) and TEFLIN journal articles (JAs) and (Kurniati, 2019) which examined the used of conjunctions on an abstract linguistic and literary thesis that found more similarities in their findings. Similarities were found more in extension types, especially in positive additives with the word item "and". In their studies found that conjunction was mostly used among the four grammatical cohesive devices and those additive conjunctions were most dominantly applied. This has similarities with the results the researchers obtained on abstracts of English and mathematics department students.

Finally, there were more similarities than differences in the ways conjunctions being used by both English and mathematics thesis abstracts. These findings confirmed the previous study (Ketabi & Jamalvand, 2012), which examined conjunction devices in English international law texts and its Farsi translation, it was stated that finding many similarities in the used of conjunctions, especially in additive conjunctions which more frequently used.

Conclusion

Based on the analysis of the whole research problems that have been presented above, there are several things that can be concluded. First, the use of conjunctions varies in terms of their suitability to the abstract. There is an inappropriate use of conjunctions showing that conjunctions in writing are problematic for foreign language learners. More specifically, using conjunctions to compose abstracts is a challenge for undergraduate students of English and

mathematics at Qomaruddin University.

Second, the researchers found that the use of conjunctions in abstracts of students English and mathematics department who graduated in 2016-2018 used more types of "*extension*" conjunctions, especially "*addition positive*" with the word "*and*" items by 76% to 87%. Whereas the least common type of conjunction found in the elaboration type especially the "*clarification*" type with the word item "*in fact*" only 1% to 0%.

Third, the similarity in using conjunctions in abstracts is more dominant than differences in abstracts. Both types of abstracts show the same way of using conjunctions and the number of conjunctions applied to abstracts are about the same. This confirms that English and mathematics students' understanding in conjunctions is almost the same.

Researchers provide suggestions to lecturers, especially lecturers in the English education department to emphasize not only accuracy but also alternatives or conjunction options that students can use in their writing so that the use of conjunctions in writing can be more varied. Suggestions of Researchers for students, especially the English education department are expected to use various conjunctions in their papers or academic writing. Students should pay attention to the accuracy of the use of conjunctions to help their academic writing and be able to read more to enrich references to writing and even reference their undergraduate thesis later.

This research in discourse type in undergraduate thesis abstract has not been conducted in the faculty of teaching and educational department at Qomaruddin University. For that reason, the researchers hope that this research can provide references for readers and students of the English Language Education Study Program or other departments interested in this study.

In addition, the researchers suggest that other researchers interested in this research in examining discourse could examine all kinds of cohesive devices in an abstract thesis. So, it can increase knowledge about the use of cohesive devices.

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