



**THE ANALYSIS OF CONJUNCTIONS IN THE
HARD AND SOFT DOMAINS OF SCOPUS
INDEXED JOURNALS USING THE FUNCTIONAL
THEORY**

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DEPARTMENT OF ENGLISH LANGUAGE AND
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OF SCOPUS INDEXED JOURNALS USING THE FUNCTIONAL THEORY**

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THESIS APPROVAL PAGE

I certify that in my opinion, the thesis submitted by Mohammad Muslim Suilim ARRASHID titled “THE ANALYSIS OF CONJUNCTIONS IN THE HARD AND SOFT DOMAINS OF SCOPUS INDEXED JOURNALS USING THE FUNCTIONAL THEORY” is fully adequate in scope and quality as a thesis for the degree of Master of English Language/Applied Linguistics.

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This thesis is accepted by the examining committee with a unanimous vote in the Department of English Language and literature as a Master of Science thesis., 2022

<u>Examining Committee Members (Institutions)</u>	<u>Signature</u>
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The degree of Master in English Language/Applied Linguistics by the thesis submitted is approved by the Administrative Board of the Institute of Graduate Programs, Karabuk University.

Prof. Dr. Hasan SOLMAZ
Director of the Institute of Graduate Programs

DECLARATION

I hereby declare that this thesis is the result of my work and all information included has been obtained and expounded following the academic rules and ethical policy specified by the institute. Besides, I declare that all the statements, results, materials, not original to this thesis have been cited and referenced literally.

Without being bound by a particular time, I accept all moral and legal consequences of any detection contrary to the aforementioned statement.

Name Surname: Mohammad ARRASHID

Signature :

FOREWORD

I would like to express my endless gratitude to my supervisor Assist. Prof. Dr. Nayef JOMAA (Ph.D.) for the useful knowledge he has provided, the support, guidance, inspiration, patience, and motivation he has given me to finish this thesis.

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DEDICATION

This thesis is dedicated to my late father, family, friends, and all my teachers that are supported me to continue my study.

ABSTRACT

Conjunctions are one of the significant cohesive devices for relating words, clauses, groups, and paragraphs as well as adjusting the meanings of a text. Despite the fact of an excessive number of studies indicating the importance of the current issue (conjunctions), limited studies utilized the Systemic Functional Linguistics (SFL) in analyzing the use of conjunctions within the text. The present study explored the role of conjunctions utilized in the hard domain published articles like chemistry, mathematics, medicine, and physics, as well as the soft domain published articles like education, linguistics, philosophy, and social science. A corpus is comprised of 80 articles (published in the years 2017 to 2021) gathered from the distinguishable website Scientific Journal Rankings (SJR) taking Halliday's (2014) taxonomy of cohesion model base for the current study to be analyzed qualitatively. The findings showed that conjunctions especially extending and elaborating conjunctions are used in the soft domains research articles more frequently than what is found in the hard domain articles, whereas the enhancing conjunctions tend to be utilized in the hard domain articles bigger than the articles belong to the soft domain. Besides, in bulk, Education research articles came in the first rank in using conjunctions in comparison to other soft domain systems. As for the hard domain, the research articles that belonged to Medicine recorded identified superiority by using conjunctions, in general, over the other hard domain disciplines. The findings of the current study can be useful to the researchers, teachers, and students.

Keywords: Academic writing, Conjunctions, Hard Domain, Soft Domain, Genre Analysis, Functional Theory

ÖZ

Bağlaçlar, bir metnin anlamlarını ayarlamının yanı sıra sözcükleri, tümceleri, grupları ve paragrafları ilişkilendirmek için önemli birleştirici araçlardan biridir. Mevcut konunun (bağlaçların) önemini gösteren çok sayıda çalışma olmasına rağmen, metinde bağlaçların kullanımını çözümlenmede Sistemik İşlevsel Dilbilimden (SFL) sınırlı sayıda çalışma yararlanmıştır. Bu çalışma, kimya, matematik, tıp ve fizik gibi sabit alanda yayınlanan makalelerde ve eğitim, dilbilim, felsefe ve sosyal bilimler gibi yumuşak alanda yayınlanan makalelerde kullanılan bağlaçların rolünü araştırdı. Bir derlem, mevcut çalışmanın nitel olarak analiz edilmesi için Halliday'in (2014) uyum sınıflandırması modelini temel alan, seçkin Scientific Journal Rankings (SJR) web sitesinden toplanan 80 makaleden (2017 ila 2021 yıllarında yayınlanmış) oluşur. Bulgular, özellikle genişletici ve detaylandırıcı bağlaçların, yumuşak alan araştırma makalelerinde, sabit alan makalelerinde bulunanlardan daha sık kullanıldığını, oysa artırıcı bağlaçların, sabit alan makalelerinde, makalelerden daha büyük olan sabit alan makalelerinde kullanılma eğiliminde olduğunu göstermiştir. yumuşak alan. Ayrıca, toplu olarak, Eğitim araştırma makaleleri, diğer yumuşak alan sistemlerine kıyasla bağlaçları kullanmada ilk sırada yer aldı. Sabit alana gelince, Tıp'a ait araştırma makaleleri, genel olarak bağlaçları kullanarak diğer sabit alan disiplinlerine göre üstünlük tespit etti.

Mevcut çalışmanın bulguları araştırmacılar, öğretmenler ve öğrenciler için faydalı olabilir.

Anahtar Kelimeler : Araştırma Makaleleri, Bağlaçlar, Sabit Etki Alanı ,Yumuşak Alan, Tür analiz , Fonksiyonel Teori

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Anahtar Kelimeler	Araştırma Makaleleri, Bağlaçlar, Sabit Etki Alanı, Yumuşak Alan, Tür analiz, Fonksiyonel Teori

ABBREVIATIONS

C	: Conjunctions
CD	: Cohesive Devices
SFL	: Systemic Functional Linguistics
EFL	: English as a Foreign Language
ESL	: English as a Second Language
LAs	: Linking Adverbials
Pos.	: Positive
Neg.	: Negative
Compa.	: Comparative
Spa.Tem.	: Spatiotemporal
Simu.	: Simultaneous
Prec.	: Preceding
Conc.	: Conclusive
Spec.	: Specific
Dura.	: Durative
Cond.	: Conditional
Compl.	: Complex
Conce.	: Concessive
Gen.	: General
Expo.	: Expository

Exam. : Exemplifying

Corr. : Corrective

Distru. : Destructive

Dism. : Dismissive

Par. : Particularizing

Summ. : Summative

Ver. : Verificative

SUBJECT OF THE RESEARCH

Exploring the use of conjunctions in the hard and soft domain research articles in Scopus Indexed Journals using the Functional Theory.

PURPOSE AND IMPORTANCE OF THE RESEARCH

There are limited studies concerning the use of conjunctions according to the Functional Theory. The current study will comprehensively contribute to the studies on conjunctions of research articles by identifying the use of conjunctions in the research articles of both hard and soft domain disciplines. The findings of this study can be useful for researchers, teachers, learners, and students.

METHOD OF THE RESEARCH

The present study used a qualitative approach employing Halliday's taxonomy of cohesion (2014) in classifying the conjunctions.

HYPOTHESIS OF THE RESEARCH / RESEARCH PROBLEM

Limited studies have been conducted on the use of conjunctions using the Functional Theory especially on the academic writings like research articles in the Scopus Index Journals, therefore, the present study will try to bridge this research gap.

POPULATION AND SAMPLE

The current study analyzed 80 research articles selected from both hard and soft domains limited to the open access journals only (Scientific Journal Rankings) for the period between 2017 to 2021.

SCOPE AND LIMITATIONS / DIFFICULTIES

The current study is limited to Halliday's taxonomy of cohesion (2014) in analyzing conjunctions of 80 research articles in two domains: hard and soft domains.

CHAPTER ONE: INTRODUCTION

1.1. Introduction

Academic writing is the process of creating a well-structured accomplished product taking into consideration the clear unity shared between words and ideas. Murray (2005) expresses academic writing as a group of contracts for writing thesis or publishing papers. Besides, this creation is needed to be situated in the appropriate contexts such as universities, colleges, high schools, conferences papers, research papers, writing books, academic journals, publications, dissertations, and theses. Unlike other kinds of writings, personal and creative, academic writings are recognized for being formal. . It is important to notify that academic writing is also a “second language” to native English students (Hyland, 2016), and a comparative analysis of essays written by L1 and L2 students, if not used properly, might indirectly create a false conception and incorrect idea of good writing based on practices of L1 English students (He, 2020). The writers are required to focus on organizing complete sentences away from the images of abbreviations or contradictions (Kudus, 2020). In a similar vein, academic writings are characterized with interwoven structure, clear diction, noticeable punctuation marks, and correlated referencing to be directed towards a specific audience (i.e., researchers, lecturers, college students, advanced learners, and teachers). The aspects of academic writings stand for searching relevant information, well connected clear ideas, and interlinked structure and style in an acceptable semantic manner beyond summarizing beneficial texts for academic purposes. Moreover, urging and longing to read such kinds of writings will improve the proficiency of readers in more than one field of knowledge like learning a language, developing facts in varied scientific and literary ranks, and getting highly regarded social positions through scientific arguments and conferences. In this scene, academic writings occupy the top position behind accurate organization provided by affirmed evidence. Irvin (2010) stated that academic writing is an evaluated configuration requiring the researcher to demonstrate knowledge and show proficiency with certain skills in thinking and interpreting.

Cohesion is vigorously considered the cornerstone in the process of evolving the unifying academic writings within its elements: words, phrases/ groups, and clauses and handling it comprehensively and more precisely to the reader. It acts a vital role in

the process of creating a whole meaningful text by linking the pieces of text correctly (Mahlberg, 2006) depending on its varied devices. Halliday and Hasan's theory of Cohesion has been practiced extensively for different sides of language teaching (Fu, 2020). In addition, Halliday and Hasan in *Cohesion in English* (1976) indicate that cohesion refers to correlations of meaning existing within the text. cohesion is recognized through the use of specific devices known as cohesive devices (CD). Furthermore, The publication of the book *Cohesion in English* participate has a significant increase in the number of studies negotiating the issue of cohesion and its categories (Widiati, 2020) especially the current study topic (conjunctions).

In writing articles, students should construct clear relationships among one sentence and the most important factors for the sake of creating a good text. Moreover, students should connect statements properly and in a comprehensible way. On the other hand, good articles include explicit connections among their different parts, thus what is being said, what has already been saying and what is going to be said are connected in the most fluent, and proper way. Readers should connect sentences by using cohesive markers to follow the writer's intended meaning. Due to this fact, conjunctions, one of the cohesive devices, particularly have the focal outcome in connecting words, phrases, and sentences within the text and performing the ideas in a suitable semantic configuration. In other words, conjunctions are semantic relations in which the conjunctive element signals how the immediately forthcoming segment of text is systematically combined to the preceding segment (Keshmirshekanb et al, 2019).

1.2. Problem Statement

Conjunctions are considered noticeable signs as grammatical cohesive devices in linking paragraphs, sentences, and words (Halliday & Hasan, 1976; Cook, 1989; Geva, 1992, Heino, 2010; Martinez, 2015; Uzan, 2017; Namaziandost et al., 2019) even though they are not theorized to be cohesive variables themselves (Halliday & Hasan, 1976; McCarthy, 1991). These conjunctions are positioned within the grammatical cohesive devices for aiding rhetoric and cataphoric ascription inside the text (Halliday & Hasan, 1976; McCarthy, 1991; Ghasemi, 2013; Mohammed, 2015; Uzan, 2017). Halliday and Hasan (1976) suggested conjunctions in four collections depending on their functions to additive, adversative, causal, and temporal (Martnez, 2015; Uzan,

2017; Namaziandost, Nasria, Keshmirshekan, 2019). Additive conjunctions include words like *and, also, likewise, moreover, as well as, both...and, not only...but also, but, or, nor, either...or, neither...nor* and *otherwise*. The class of adversative conjunctions includes items such as *but, although, however, even though, nevertheless, and whereas*. Amid the casual conjunctions are, *therefore, consequently, as a result, and for this reason*. Temporal conjunctions include elements like *next, after that, at once, up to now, soon, at last, when, finally, and then*. (Anath, 2005; Patanasorn, 2010; Ahangar, Taki, Rahimi, 2012; Park, 2013; Arabi, Ali, 2014; Hamed, 2014; Mohammed, 2015; Martinze, 2015; Mohamed, 2016; Darweesh, Kadhim, 2016; Uzun, 2017; Ucar, Yukselir, 2017; Namaziandost, Nasria, Keshmirshekan, 2019). These collections are used respectively to raise further information to the text, show opposing data, combine causes and results and point out actions that occur at the same time (Uzan, 2017).

A lot of studies over 30 years have detected the existence of a relationship between using conjunctions and the value of writing level (Zhang, 2010; Martinez, 2015). In this regard, Ting (2003) states that the importance of conjunctions becomes clear in the task of creating a coherent text. Thus, the existence of coherence can participate in text equality. Zamel (1983) indicates that absence or ignoring the use of conjunctions with a text leads to ambiguity and difficulty at the same time in the cause of making coherent series of ideas due to conjunctions role to stimulate the reader to conclude the following ideas. Researchers of pedagogical writing recommend that using the conjunctions appropriately is considered a skill for students in the task of learning to write (Cook, 1989; McCarthy, 1991; Hamed, 2014).

Jin (2001) highlights that skillful writers are inclined to utilize more conjunctions in their writings (Uzan, 2017). In a similar vein, Crossley et al. (2014) mention that the use of conjunctions is positively related to essay or article value. (Ferris, 1994; Norment, 1994; Song Meihua and Xia Weirong, 2002; Liu and Brain, 2005; Zhang, 2010; Yang and Sun, 2012; Martinez, 2015; Uzan, 2017; Chanyoo, 2018; He, 2020), competency in second language writing (L2) (McCarthy, 1991; Lorenz, 1998) and that conjunctions participate obviously in organized patterns of governmental documents. (Trebets, 2009). Lai (2008) states that active learners properly use conjunctions yet inactive learners do not (Mohamed, 2016). On the same path, Kiany and Khezrineshad (2001) indicate that high and middle-skilled learners tend to utilize conjunctions more than lower-skilled learners (ibid).

On the other hand, some researchers have found no relation between the use of conjunctions and coherence in writing improvement (Johnson, 1992; Granger & Tyson, 1996; Xu, 1999; Castro, 2004; Zhang, 2010; Alarcon & Morales, 2011; Darweesh & Kahdem, 2016; Malki, 2016; Chanyoo, 2018). Besides, the use of conjunctions stands for a problematic zone to the non – native English writers encounter (Crewe, 1990; Yeung, 2009, p. 331; Anderson, 2014; Güneş, 2017; Ucar & Yukselir, 2017)). Also, the main problem is shown by overuse, underuse, or misuse of conjunctions (Field&Yib, 1992; Zhang, 2000; Chen, 2006; Lei, 2012; Gao, 2016; Güneş, 2017; He, 2020). Moreover, using conjunctions has been proved to be tricky even for the native speakers of English. For instance, Nippold, Schwarz, and Undlin (1992) concluded that American university students were masters in conjunctions by reading, but they faced troubles in the task of writing.

To bridge this gap, there is a need to study the usage of conjunctions through the perspective of Systemic Functional Linguistics that concentrates on the text with the frame of context in the published articles in both hard and soft domains in their variant knowledge branches. Hence, the intent behind this study by investigating the role behind using conjunctions through analyzing the published articles is to create a useful simple guide to the teachers, researchers, and learners to the explicit apparent meanings of conjunctions as well as the implicit conjunctive relations under the use of the same conjunctions.

Conjunctions are one of the significant cohesive devices for relating words, clauses, groups, and paragraphs as well as adjusting the meanings of a text. Despite the fact of an excessive number of studies indicating the importance of the current issue (conjunctions), limited studies have used Systemic Functional Linguistics (SFL) in analyzing the use of conjunctions within the text. , i.e. conjunctions will be analyzed in the light of three main categories: **elaborating** in which conjunctions restate the statement, in other words, specify in greater illustrations, comment, or exemplify. Elaborating conjunctions are sub divided into two sub-categories: **appositive**, e.g., (in other words, for example), **clarifying**, e.g., (in particular, briefly). **Extending** conjunctions add some new characteristics, give an exception to it, or offer variables. They are divided into three sub-categories: additive, e.g., (and, also, moreover), adversative, e.g., (but, yet, however), and varying, e.g., (or, on the other hand). **Enhancing** conjunctions that qualify the sentence with some indirect feature of time,

place, cause, or situation. They are sub-divided into four sub-categories: **matter**, e.g.(here, there, in other respects), **manner**, e.g., (likewise, in the same manner, by such means), **spatiotemporal**, e.g., (next, then, soon), and **causal-conditional**, e.g., (so, nevertheless, therefore). The present study will explore the role of conjunctions utilized in the hard domain published articles under the subjects like chemistry, mathematics, medicine, and physics. On the same path, the current study will focus on the occurrence of conjunctions in the soft domain published articles in education, linguistics, philosophy, and social science. To address this aspect, a corpus will be comprised of 80 articles (published in the years 2017 to 2021) gathered from the distinguishable website Scientific Journal Rankings (SJR).

1.3. Research Question

The research discusses the following issues:

1. What are the types and meanings of conjunctions used in the research articles of the hard domain?
2. What are the types and meanings of conjunctions used in the research articles of the soft domain?
3. To what extent do the frequencies of conjunction categories vary between the hard and soft domains of published articles?

1.4. Research Objectives

This study aims at addressing the following research objectives:

- 1- To explore the types and meanings of conjunctions used in the research articles of the hard domain.
- 2- To explore the types and meanings of conjunctions used in the research articles of the soft domain.
- 3- To identify the similarities and differences in the use of conjunctions in the hard and soft domains.

1.5. Significance of the Study

It is obvious from the problem statement of the recent study that two distinct attitudes are hanging on the state of conjunctions in writing forms. Firstly, more using conjunctions leads to a more skillful writing style (Jin, 2001; Uzan, 2017). Secondly, no valuable coloration was noticed with the interference between using conjunction and the proficiency of writers (Castro, 2004; Darweesh & Kahdem, 2016). This study aims to convey the significance behind using conjunctions as one of the relative cohesive devices and their effects upon the words, phrases, and paragraphs. Also, the findings of this study will stimulate the researchers to get better recognition of the utilization of conjunctions in academic writing.

The current study participates in aiding teachers, researchers, and learners to a better understanding of conjunctions and their aspects, functions, and solutions to problematic zone the students may encounter through using conjunctions. Furthermore, the outcomes of the study have been related to the previous studies that discover the importance of utilizing conjunctions to gain respected information. As a result, the teachers may get an advantage from this study to fulfill learning and educational aspects. It is very likely to inspire teachers and practitioners to continuously search for better understanding to enhance the learners' ability to use CDs appropriately (Nindya, 2020). Hence, writers should consider the subject of applying CDs in their writing as valuable as the worth of understanding and comprehension level of texts. Otherwise, suppose CDs are not used appropriately and sufficiently in the text, the readers might need a longer time to understand the ideas (Haliday, 1976) and may misunderstand the writer's aimed message behind his/ her writings. (Iseni et al., 2013). To be approved, Rostami et al. (2016) declared that the teachers need to give sufficient and appropriate exercise for the learners regarding the use of conjunctions. By doing such exercises, the learners will be aware of the issue of whether he/she has enough deal of knowledge and if he/she has difficulties in doing these exercises. This procedure can stimulate them to go further into the use of conjunctions in their writings. Moreover, the learners' limited use of conjunctions might be affected by the learners who tend to apply the concept of cohesion that they are convinced how to apply it appropriately.

1.6. The domain of the Study

The present study will explore the role of conjunctions utilized in the hard domain research articles as chemistry, mathematics, medicine, and physics. On the same path, this study will focus on the occurrence of conjunctions in the soft domain research articles as education, linguistics, philosophy, and social science. To dig into this aspect, a corpus will be comprised of 80 published articles in the years 2017 to 2021 gathered from the identifiable website entitled Scientific Journal Rankings (SJR) of the branches both hard and soft domains aforementioned taking Halliday's taxonomy of cohesion (2014) model base for the current research to be analyzed qualitatively relying on Systemic Functional Linguistics (SFL).

1.7. Definitions of Terms

1.7.1. Systemic Functional Linguistics (SFL)

Founded by the works of Halliday, is a very helpful descriptive and interpretive configuration for displaying language as a strategic, meaning-making resource (Eggins, 2004).

1.7.2. Conjunctions

Conjunction cohesive relation that refers to a limitation to which is followed systematically connected to the part has gone before. (Halliday & Hasan, 1976).

Martinez (2015) states that conjunctions take part in making sense of the text as well as become the useful side for the reader and researcher through connecting statements and paragraphs.

Dooley and Levisohn (2001) define conjunctions as a semantic relation that limits the explicit details of a text to be comprehended.

1.7.3. Academic Writings

Hinkel (1997) considered that academic writing represented texts concentrating on the evaluated confirmed styles such as argumentative essays, whereas Sun (2009)

identified academic writing as postgraduate thesis introductions beside Feng & Zhou (2007) who added undergraduate thesis abstracts as figures of academic writing.

1.7.4. ESL (English as a Second Language)

Simpson (2011) illustrates that non-native variation who spend long ages under colonization [e.g. Singapore, India, Nigeria, Bangladesh, Ghana, Kenya, Malaysia, Pakistan, and Philippians].

1.7.5. EFL (English as a Foreign Language)

Simpson (2011) refers to the citizens inhabited in countries like China, Japan, Egypt, Caribbean Countries, Indonesia, and Saudi Arabia who performed verities of language.

1.8. Summary

The present study intends to find out the forms and meanings of conjunctions, as well as their effect on the style of the published articles, belonging to the hard and soft domains based on the SFL perspective. Moreover, the same study investigates the reasons and the purposes that stood behind acting the conjunctions in these articles the way they do.

In Chapter Two, the study will review the literature related to the topic of the study by showing the previous studies asserting the importance beyond utilizing conjunctions and its clear relation to the articles or essays performance. On the other hand, the same chapter will discuss some studies demonstrating that no touchable coloration between using conjunctions as a cohesive device and the academic writings such as essays or articles construe.

CHAPTER TWO: LITERATURE REVIEW

2.1. Introduction

This literature review examines the function of conjunctions as one of the grammatical cohesive devices through presenting previous studies showing the conjunctions significant in facilitating text comprehension. In addition, Theoretical frameworks on the nature of connectives will be presented followed by a table of conjunctions as well as a pilot study as a kind of comparison between hard and soft domains articles that examined their function in the construction of coherent relations. This comparison reveals a perspective to account for how using more conjunctions operates to achieve an advanced level of cohesive effects. Furthermore, this chapter reviews the importance of academic writings, related definitions for such as cohesion, coherence, conjunctions, and their meanings out of three different taxonomies like Halliday's (1976), Biber's (1999) taxonomy, and the employed taxonomy of the recent study Halliday's (2014) taxonomy of cohesion from the perspective of Systemic Functional Linguistics (SFL).

2.2. Importance of Academic writing

As aforementioned in Chapter One, Academic writing is a system of writing that is formed objectively. Besides, it concentrates on providing information with reliable and credible data and evidence. It is a guide toward constructing the body of knowledge on a topic or field of study. In the current study, the importance of academic writing through its coherent semantic and structure parts come to be obvious as well as gradual steps towards the unified text. Concerning the concept, researchers must develop their writing abilities through academic writing despite the difficulties they encounter in the way of this intent such as writing anxiety. One of the figures for improving the scholar's writing is using conjunctions as one of the cohesive devices. Martinez (2015) proved the productive relationship between conjunction frequencies and writing performance, especially among Spanish fourth and third-grade students despite the difficulties they faced.

EFL learners face many obstacles trying to learn and practice language skills. One of the most difficult language skills that the students consider as a challenge in the

way of developing the knowledge concerning foreign language and record progress in it is writing (Xiao & Chen, 2015) that is considered the hardest skill for nonnative EFL learners because, "writing is based on a multidimensional mental production like foundation, knowledge, experience, creative associative power, expression ability" (Aydn, 2015: p: 18). According to Hughey (1983), writing is an essential form of communication for people, a tool for critical thinking and problem solving, helping the individual to self-renew and to control the environment.

Thus, writing is an extended process. As the writing skill of the individual develops, the transfer of knowledge, the consideration of the thoughts, and the arrangement are made more effective (Akyol, 2006). Writing is identified as the skill which represents the most difficult one since it needs constant practice as well as reading good sources. In addition, it has been found in the previous research that while inquiring non-native tutors about how they can improve in the skill, the response to this issue appears difficult because he or she cannot still communicate through writing (Shirazi & Mousavi Nadoushani, 2017). In this regard, writing in English as a non-native speaker has influences on the ability of the writer in conceptualizing the writer-reader relationship in the different cultural contexts since communicating ideas employing the written language can be considered as building the relationship between the author and the reader.

To that intent, academic writing practices constitute central processes through which students learn the conventions of their disciplines to meet the expectations of their academic communities. The definitions composed by the scholars in the literature reflect different dimensions of academic writing: a tool to get credibility in the academic community, a representation of disciplinary-based academic knowledge, and interaction with readers. As for Hyland (2009), academic discourse is "ways of thinking and using language which exist in the academy" (p. 1). Irvin (2010) defines academic writing as "the form of evaluation that asks you to demonstrate knowledge and show proficiency with certain disciplinary skills of thinking, interpreting and presenting" (p. 8). Besides, Hyland (2011) assured that effective academic writing skills are represented by requirements for success at university because academic systems heavily use them as a form of assessment.

For Burke (2010), it refers to “what academics do most, through publishing, communicating, and contributing to their knowledge” (p. 40). In general, academic writing is characterized by complex grammatical structures, interred pendant ideas expressed in hierarchical structures, embedding, and nesting of clauses and phrases. As a result, academic writing causes difficulties for non-native speakers of English for a variety of reasons.

Hyland (2009) highlights the difficulties that nonnative students face while writing academic texts. One of these difficulties is the lack of experience, novice academic writers have some emotional handicaps of writing. They are so concerned with linguistic conventions that they cannot convey the truth of propositional content, which makes them doubt their knowledge about the topic. On the other hand, for experienced writers, these conventions are just a means to represent the content recursively. To cope with the difficulties mentioned above, academic writing courses should be implemented carefully regarding the materials, the dimensions of academic writing and the assessment techniques, and most prominently the particular needs of postgraduate students attending the course. Hence, needs analysis is a prerequisite for conducting an academic writing course.

Brown (1995) describes needs analysis as the process of gathering information to implement a curriculum that meets the needs of learners. The style of writers in this specific form of writing is shaped by the linguistic norms of disciplines and cultures. For many non-native students of English, these norms are challenging, which forces them to be more cautious in representing the content and their presence. Additionally, they are so concerned with the organizational issues and establishing writer-reader interaction that they may not be able to supplement propositional information effectively. Therefore, academic writing courses should touch on its specific dimensions of it. One of the most significant requirements of these courses is to identify the needs of students and implement a program based on the negotiation between the needs of students and the expectations of academic communities.

Academic writing is now a well-researched area in the literature because English is the lingua-franca of the international academic world and it is a must for academics to be competent in writing in English. As a result, English has become the

medium of instruction for both graduate and post-graduate studies in many countries. Especially, post-graduate students attend academic writing courses to improve their academic knowledge and skills. These skills include sentence structure (i.e. how to arrange words in a sentence), organization (i.e. how to arrange ideas in a paragraph), and, of course, grammar and punctuation (Hogue, 2008: 2). Thus, there is a need for continuous research and revealing creativity in the subject, which requires advanced writing skills (Aydn, 2017). Tarnopolsky and Kozhushko (2007) refer that “this type of writing is hard to teach and learn because the level of standardization of texts to be written is much lower than in the written texts that were referred to above as belonging to practical writing category”.

Monippally and Pawar (2010: 29) state that academic writing “needs to fulfill certain requirements such as communicating the significance of the research question, adequately describing the research process, describing the research outcome, and describing the implications of the research and research outcome”.

Academic writing is often written about comparing two points, discussing a solution, introducing a project, summarizing information, reporting research or experiment (Bayat, 2014). “Therefore, the very nature of academic writing is also different from many practically-oriented or socially-oriented writing tasks. This is because academic writing tasks require you to look beneath the surface for underlying principles, theories, and concepts that can offer mainstream as well as alternative explanations for common practices, processes, and procedures” (Bowker, 2007: 3). The distinguishing features of academic writing from other literary genres can be listed as a topic choice, access to sources of information/preparations for research/thinking, language used, flow of narration (information organization), and ethics. To comprehend the necessities of academic writing courses in this international academic world, it may be beneficial to get a clear picture of what academic writing means.

The issue could be caused by several factors and among these factors is the non-Proficiency or lacking knowledge in coherence impedes the development of mature writing among university undergraduates. In other words, academic writing skills have to be learnt because the issue is not just about putting thoughts into words. Rather, academic writing involves logic, credibility, conviction, clarity, precision,

cohesion, and organization. Hence, a good piece of academic writing should be well-supported and demonstrate critical thinking (Hei & David, 2015).

Academic writing intends to enunciate research findings in a certain discipline within the scientific world. “Academic writing is the objective description of the research findings in a scientific field. The intended audience of academic writing, which aims to publicize the contribution of a newly conducted research to the scientific world, is composed of individuals who work in the relevant domain” (Altunkaya, 2019, p. 133).

Academic writing is a genre resorted to by individuals who could comment within the scope of a discipline and depends on various principles. The individuals who engage in the act of academic writing first need to have a thesis, and further, they need to have adequate preliminary knowledge in the particular domain about their thesis, to have good knowledge on and to acknowledge previous work in the relevant research domain, and to ground their writing on a scientific basis.

Academic reading, listening, and writing are among the basic learning skills in higher education. Academic writing is regarded as a difficult and complex task since it is regarded as a wide process of learning to use many aspects of writing. EFL students lacking the ability to master all those aspects of writing suffer many problems when they try to express their messages in written English (Xiaoxiao, 2010).

Furthermore, academic writing is a complex process, because it requires learners to generate ideas, select and use appropriate language and vocabulary in addition to organizing information through drafting, revising, and editing (Rusinovci, 2015). Pre Service teachers should acquire academic writing skills in the Turkish Language II course based on the faculty of education, freshmen year second semester higher education curriculum. Various studies on the acquisition of this skill indicated several acquisition problems. Frenc (2016) reported that especially freshmen struggled with and failed due to their "poor writing skills" based on the statements of related faculty members; thus, coping with unaccustomed higher education academic writing applications was vital for the achievements, skills acquisition, and development of freshmen students.

Murray and Thow (2014) reported that there are several methods for the act of writing; however, academic writing is a deliberate act; and therefore, it is rather a behavior. As described in the common definition of education, academic writing education entails a deliberate change in behavior in the desired direction to ensure that the students acquire adequate academic writing skills. Various studies (Gardner, 2014; Arneback, Englund & Solbrekke, 2016) reported that academic writing experiences in teacher training were strongly influenced by the education of the students, their previous writing experiences, and their views as teacher candidates. The writing rules for all sections of an academic text and ethical principles in academic writing should be instructed in detail for the pre-service teachers to acquire academic writing skills.

Moreover, Murray (1987) reported the stages of the academic writing process as pre-writing, planning, drafting, reflection, peer and teacher review, editing, additional research and generation of ideas, final reading, and publication. Similar stages are included in the Turkish Council of Higher Education Teacher Training Curriculum as section topics. The Turkish Council of Higher Education suggests that the students should acquire necessary academic writing skills through the Turkish Language II course in the Teacher Training Undergraduate Programs (2018).

Teachers spend periods and effort to meet the students' needs in academic writing tasks. Despite the teachers' efforts, the students seem to continue suffering writing problems, as they are not only learning a foreign language but also trying to learn how to compose successfully. However, teachers and instructors working at universities can make informed decisions when teaching academic writing.

Highlighting the focus on that zone, some studies conducted concerning academic writing stated that academic writing requires good critical thinking. Hamied (2017) managed a study to clarify the importance of academic writing and its relationship with critical thinking. The outcomes of the study suggested that the lecturer should incorporate explicit teaching and cooperative learning activities to reduce the students' difficulties and develop their academic writing and critical thinking capacity.

Furthermore, Abdullah (2021) conducted a study expressing the usage of conjunctions in expository essays presented by EFL fourth-year undergraduate

students in the English Language at the Department of English language and literature, Hashemite University in Jordan. The results of this study confirm earlier studies showing English learners as a foreign language are having difficulty in using conjunctions in their writing. Also, the study recommends that grammatical cohesive devices and their function should be explained to the students through explicit teaching, not as separated grammatical items but as discourse semantic resources of text creation. (Ong, 2011) report that writing is the most difficult language skill for non-native speakers since the writing process involves, a critical, rational, and systematic process of thinking, which makes it difficult for a writer to decide what he wants to write.

In addition, Grabe and Kaplan (1998) point out that composition skills are needed to modify data or the language itself in academic writing. At this stage, writing is a learning process that helps students to manage their vocabulary and to create well-organized ideas in a written form. Not only does the capacity of academic writing to form grammatical sentences, but students also need the capacity to build coherent text using conjunctions. Heino (2010) considers connection ties are the most important cohesive device since they bind sentences and paragraphs in different units and enable the reader to get the message.

Thus, conjunctive elements are the most common types of cohesion in grammar and composition. They describe the coherent association between clauses or parts of the text to demonstrate a significant relationship between them. These conjunctions help students to write their essays by helping signals between different phrases as well as connecting concepts in separate paragraphs. Thus, students need to employ the conjunction according to their aim since it is important in linking and creating significant ideas (Ghasemi, 2013).

The findings suggest that the EFL learners need to master the mechanics of text connection through conjunctions and recommend extra efforts concerning the part of teachers to make more classroom practices to enhance the proficiency of the learners' level. Cohesive devices are the main constituents that contribute to the overall writing quality in terms of creating connections actualizing transitions and linking ideas as well as sentences. As they connect paragraph phrases and clauses, these connecting

devices also have the same significance as coherent devices. The logical relationships between propositions and signal text structure are created by conjunctions.

Conjunctions are known as cohesive devices that are very critical. Research literature has been studied to show that masterful and less competent readers vary in the degree to which they use implicit logical relationship symbols (i.e. conjunctions) in text and in the degree to which they conclude implicit relationships (Of, In, & Chinese, 2016). Mature reading and efficient writing are skills of significant importance for academic achievement for EFL students. Still, at the advanced level of English language research, this feature often remains an elusive target. Most of the EFL learners regulate the grammar of the foreign language not enough to develop an appropriate tie among the larger units of the language. Apart from the knowledge of semantics and syntax of the target language, they seem incompetent to create logical coherence in the compositions of the target language (Santana, 1974).

Sibtain (2021) has already proved the worth of conjunctions in their research studies. Further, Banjo in Jowitt (1991) reports that the general complaint is that the level of proficiency of the English language in both in and outside the educational discipline has been failing and with it the general level of education. Many factors attribute to this failure. Evaluators often find that foreign learners who have mastered syntactic structures are still unable to compose coherent themes, term papers, theses, and dissertations (Shah, 2021). Conjunctions have been shown to play an important role in the development of discourse by adult EFL learners, but not the sufficient degree to develop extended discourse (Mohammed, 2015).

In addition, the degree of subject matter expertise is expressed in the applicable and correct usage of connectors in writing. It was conducted with a selected specialization in the employment of connectives during the Turkish ELT Department environment (Karahana, 2015).

On the other hand, Mohammad (2014) also worked linking markers such as conjunctions in the writings of EFL learners and found significant relevance among four types of conjunctions discussed by Halliday and Hassan (1976) conjunction test to retain coherence in writing (Mohammed, 2015). Current research is very much inspired by the aforementioned research works, in which researchers investigated the

uniformity and regularity of connected devices, the occurrences and frequencies of connected devices, and explored the texture of the text through conjunctive items.

The comparison between the frequencies and concordance of these connecting markers has made explicit evidence that the more comprehensibility of text depends on the proper usage of the conjunctions. The interpretation was based on the underpinning theory propounded by Halliday (2014), where he claims that the presence of explicit conjunctions is one of the principal variables in text discourse. The research was also carried out to examine the use of conjunctions in the hard and soft domain research articles by Halliday's taxonomy of cohesion (2014).

Besides, this research focused to investigate the occurrences and frequencies of conjunction devices to show the similarities and the differences between these articles. As a result, the appropriate use of conjunctive markers plays an important role to make a text textured. The outcomes, therefore, reveal as proved by the previous researchers such as Ventola and Mauranen in Bloor (2002), Mohammed (2008), Meisuo (2016), Bahaziq (2016) that the non-native foreign language users need to master the mechanism of connecting devices, particularly, the appropriate use of conjunctions to maintain the text unity and make it more comprehensible. They need to be acquainted with the importance of connective devices as propounded by Halliday and Hassan (1976 & 2004) which was identified to be the most comprehensive model of cohesion (Abu-Ayyash, 2019) to develop the texture of the text.

The educationists and policymakers should revise the syllabus contents with the incorporation of such contents as appropriate use of conjunctions in mature writing for the development of writing skills among EFL learners. The beginner EFL students are not properly taught conjunctions and the roles they play in sustaining text cohesion. The discrepancy between L1 and L2, as well as the culture-bound characteristics linked with the two, may be the second explanation for incorrect conjunction use. If conjunctions aren't used frequently and appropriately in the first language and other coherent elements contribute to the text's texture, EFL learners may commit mistakes in noticing the difference when writing in the target language.

Conjunctions exist in the writings of non-native EFL writers, but they are not always found in the appropriate places where they should be, therefore they are not

easily recognized in the first place buried or suggested within the lines of text, as the study's title indicates. It is the responsibility of EFL teachers to improve students' awareness of the proper use of conjunctions at the appropriate time and place so that their usage resembles that of native English speakers. In any academic writing, students need to construct grammatically correct sentences and use appropriate vocabulary.

The best variable to employ connection among words, sentences, as well as paragraphs, is a conjunction that joins sentences in a paragraph. It is also indispensable that the learners use conjunctions accordingly to make ideas connected as conjunctions are the most obvious clues for restricting the interpretation of a semantic relation to be well understood logically (Dooley & Levinsohn, 2001). Conjunctions are used to signal the logical connections between ideas. Also, conjunction is a word to connect words, phrases, clauses or sentences, and so on. Aarts (2001) states that conjunctions are a closed class of words that have a linking function.

Talking about the value of writing reinforces the grammatical structures among the students, and it also facilitates them to be adventurous with the language and involves with the language (Raimes, 1983). Professional students are required to construct sentences correctly and cohesive text through the appropriate use of conjunctions. Conjunctions indicate rational associations in a text and assist the reader to join diverse components and paragraphs to create a logical sense of the text (Heino, 2010). Hence, conjunctions are considered to be some of the most significant cohesive devices used in academic writing.

On the other hand, no association has been established in the use of conjunctions in writing improvement (Granger & Tyson, 1996). ESL learners found the use of conjunctions problematic in their writing. Post Halliday & Hasan's (1976) publication, many studies were conducted on cohesion analysis. Most of these studies analyzed the grammatical cohesion function in texts mainly based on conjunctions. However, conjunction serves to connect two or more aspects of the language. Whereas Patridge (2000) defines that the term conjunction refers to words such as and, but finally, then and in conclusion that joins phrases, clauses, or sections of a text in ways that express their logical-semantic relationship (p.135).

To improve students' writing, it is essential to have an awareness of the appropriate use of connectives. The writing skill should be taught in a very different way to master the skill. The teachers should adopt special procedures for teaching conjunctions to equip their learners with the required knowledge to get command over the use of conjunctions. The teachers should instruct their learners in using linking words appropriately. Hence, the students may achieve a balance in using various types of conjunctions. The use of learners' first language may result from a negative transfer. Though, it leads to the overgeneralization of linking words in the second language writing production. The learners produced connectives in their writing involuntarily lacking the proper intellectual capacity of its intended use.

The results exhibit the professional students' academic writing that the efficiency of their writing was poor. There are many factors such as lack of trained teachers at the advanced level, teaching methods, and syllabus. The research has found that the use of conjunctions in academic writing would play a crucial role to articulate a message intelligibly.

To that end, the present study focused on the use of different kinds of conjunctions among professional undergraduate students. Students' overuse of conjunctions made their writing more simple and monotonous. As the students' views that they were familiarized themselves with the more use of conjunctions. At this juncture, the student's previous knowledge about the language plays a major role in language efficiency and performance. Further, the research needs to carry out to investigate the learners' performance in the usage of conjunctions at an advanced level.

To bridge that gap towards a well-formed writing style, employing cohesive devices in academic writing to university students is the most significant to connect ideas, enhance and develop their academic writing. It has been observed that there is a lack of using cohesive devices in writing. It is also noticed that using cohesive devices has a positive effect on students' writing. The awareness of the importance of writing as a productive skill, since the present EFL curriculum has given it great Attention in whole levels, basic, secondary, and university level.

In the Context of Sudanese universities, students need to write English and practice English academic writing with correct grammar cohesively and coherently,

this requires using cohesive devices in academic writing to communicate effectively in writing, Halliday and Hasan (1976) state that Cohesive devices establish cohesive relations within a text and bind ideas together. So the influence of cohesive devices on academic writing is insignificant and considerable since they provide text with various kinds of grammatical and lexical devices which make written discourse cohesive and coherent. The awareness of the importance of writing as a productive skill, since the present EFL curriculum has given it great Attention in whole levels, basic, secondary, and university level.

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2.3. Definitions

2.3.1. Cohesion

According to Halliday and Hasan (1976), cohesion refers to the relations of meaning that exist inside the text, and is expressed through the stratal organization of the text. Besides, the illustration of some parts depending on others within the same text can't be achieved but with using of cohesion (Chanyoo, 2018). Taboada (2004) and Yule (2008) define cohesion as the hidden coloration between parts of the text itself. Carter (1998) and Uzan (2017) add that cohesion is typically happening as the parts of the text are connected dependently and linguistically on others of the same text.

Cohesion: Mohamed (2016) considers cohesion as an important textual element both in creating well-formed texts and interpreting the element that is illustrated to readers. In the same path, Poudel (2018) clarifies that cohesion leads to a better understanding of what the writer or composer wants to convey as well as related

preceding ideas with what follows. In addition, Chanyoo (2018) identifies cohesion as a semantic functional means rather than formational which takes care of cluster sense.

2.3.2. Coherence

is generally the contextual appearance of the utterances in the text. More specifically, it is the contextual fitness of the text that contributes to understanding the meaning or message. According to Taboada (2004), “Coherence is the hanging together of the text with relation to its context of situation or culture” (p. 158). Yule (2008) views that coherence is a whole text that is organized well, and it is not something that exists in words or structures, but something that exists in people. Coherence is the result of the interpretation of the meaning of the text, and it depends on the relation between the audience and the text. It is the occurrence of the ideas contextually in an orderly sequence.

2.3.3. Conjunctions

Cook (1989) defines conjunctions as fundamentals of a text that remark the colorations upon words and sentences.

Conjunctions: Ghasemi (2013) elucidates conjunctions as cohesive devices utilize to combine the various parts of a text based on the meaning or purpose of the sentences. Such devices are beneficial for the learners in essay writing as they help to signal new or distinguished points in between sentences and also to connect ideas in various paragraphs. Thus, it is important to ensure the use of conjunctions according to their purpose because it plays a vital role in connecting and establishing meaningful ideas.

Conjunctions: “The cohesive system of CONJUNCTION has evolved as a complementary resource for creating and interpreting the text. It provides the resources for marking logico-semantic relationships that obtain between text spans of varying extent, ranging from clauses within clause complexes to long spans of a paragraph or more” .(Halliday; 538- 539).

2.4. Theories and Taxonomies of Conjunctions

Conjunctions have been stood for many semantic alternatives by distinctive researchers like ‘cohesive conjunctions’ (Halliday & Hassan, 1976, 2014), ‘conjuncts’ (Zamel 1983), ‘logical connectors’ (Quirk & Greenbaum, Leech, & Svartvik, 1985), ‘linking expressions’ (Raimes, 1987), ‘linking adverbials’ (Biber, Johansson, Leech, Conrad, and Finegan, 1999, 2002), ‘connective adverbs’ (Huddleston & Pullum, 2002), ‘discourse connectives’ (Blakemore, 2002), ‘discourse connectors’ (Cowan, 2008) (Hamed, 2014). Further, Sinclair (2005) assumed them in two sets as lexical and phrasal LAs. Besides, Carter and McCarthy (2006) set out a taxonomy making the conjunctions in groups entitled additive, concessive, contrastive, inference, listing, meta-textual, resultive, summative, and time adverbials. A part of these, Liu (2008) categorized them into four groups additive, adversative, causal/resultive, and sequential (Güneş, 2017).

Uzan (2017) stated that the most recognized classification of conjunctions is the one shaped by Halliday and Hasan (1976) where conjunctions are positioned in four main types according to their semantic functions as an **additive** (and, also, likewise), **adversative** (but, although, however), **causal** (therefore, consequently, as a result) and **temporal** (next, after that, at once).

Many modifications have witnessed the concern of conjunctions. For example, Biber et al. (1999, 2002) reclassified conjunctions, in their Longman Grammar of Written and Spoken English (LGWSE), into six groups relying on their semantic divisions: **apposition** (e.g., for example, for instance, namely), **contrast/concession** (e.g., in contrast, alternatively, though), **enumeration/addition** (e.g., first of all, next, finally, lastly), **result/inference** (e.g., consequently, thus, as a result), **summation** (e.g., in sum, to conclude, all in all) and **transition** (e.g., incidentally, by the way) (Uzan, 2017).

In addition, Ucar and Yukselir (2017) spotted the light upon Quirk’s classification to the “logical connectors” into seven categories: **listing** (first, second, third), **summative** (altogether, overall, in conclusion), **appositional** (namely, thus, in other words), **resultative** (hence, so, therefore), **inferential** (else, otherwise, then),

contrastive (on the other hand, instead, however) and **transitional** (incidentally, meanwhile, by the way).

2.5. Previous Studies

Writing has proved nowadays to be at a great degree of importance behind scientific and educational aspects as well as social useful circumstances (Urbanova & Oakland, 2002: 31). Before that, writing comes in the second step after speaking but the situation has changed especially when Pulgram (1951) and Berry (1958) started to research written language. Since that time, writing records a noticeable tendency towards the learning process and to create coherent text directed to the reader full of information with limited sentences, conjunctions achieve that purpose in increasing the reader's comprehension. In the current section, the researcher will present the preceding studies concerning the useful role of conjunctions in writing particularly academic writings.

Noori (2015) conducted a study employing a systemic functional linguistics approach to analyze the textual Themes of some dissertations and theses written by Iraqi learners. Amid the findings, some pieces of evidence showed that using conjunctions and conjunctive adjuncts is higher than using relatives. This leads to the fact that conjunctions and conjunctive adjuncts contribute to increasing the readers' understanding levels beyond creating logical relations among the text. Relying on Halliday's arrangement of conjunctions and conjunctive adjuncts, the results noted utilizing enhancement is larger than elaboration and extension (Alrajhi, 2020).

Martinez (2015) managed a study comparing the use of conjunctions and the resulting errors by Spanish EFL learners through their argumentative essays. The findings appeared that more errors in using conjunctions related negatively to the writing quality level (Nindya, Waidiati, 2020).

Hamed (2014) explored the role of conjunctions used in argumentative essays which were written by fourth-year undergraduate Libyan students enrolled in English Foreign Language. The basis he elected was Halliday and Hasan's (1976) taxonomy of cohesion. The outcomes of his study indicated the inappropriate use of conjunctions was scored highly. Also, the study showed that the adversative conjunctions

represented a real obstacle faced the learners, then additives and causal were in the second step (Martinez, 2015)

Liu and Braine (2005) conducted a study searching the cohesive devices in the Chinese undergraduate students' fifty argumentative essays relying on Halliday and Hasan's (1976) classification. The results revealed a significant relationship between the number of conjunctions and the quality of writing. On the contrary, Ting's (2003) findings revealed that conjunctions stood in a tenuous area for English writers with Chinese mother tongue after scrutinizing students' (80) compositions qualitatively as well as quantitatively and deduced that students' compositions possessed more errors in using additive and adversative than temporal and causal conjunctions. (Hamed, 2014).

Narita, Sato, and Sugiura (2004) investigated the use of connectors by advanced Japanese EFL essays comparing them with equivalents of English natives. In addition, they drew a comparison between the Japanese learners and advanced Chinese, French and Swedish learners' usage of twenty-five conjunctions depending on Biber, Johansson, Leech, Conrad, and Finegan. (1999) and Quirk et al. (1985) taxonomies. The findings signaled that *first, and, of course,* and *and* were overused. On the other side, a case of underuse of *then, yet* and *instead* is clear. The study appeared that the influence of the mother language stayed intermediate on the conjunctions used by the learners.

The same Ting's results as is deduced by Abdalwahid (2012) since managing a study to recognize the use of conjunctions by fourth-year English EFL Libyan students' argumentative essays taking Halliday and Hasan's (1976) theory. He assured that conjunctions are challenging aspects for the students due to their first language, starting with an additive by the use overly, passing through adversative, causal, and temporal (Hamed, 2014)

Gholami et al. (2012) drew the Iranian authors' use of conjunctions in both biomedicine and applied linguistics written papers. In both biomedicine and applied linguistics, nineteen original articles published in 2008 – 2011 were selected to compare and analyze the kinds and frequency of conjunctions. An accountably prominent difference was noticed in the types as well as the use of conjunctions in the chosen articles. On top of that, the conjunctions used in biomedicine articles were more

frequent than they in applied linguistics. This result clarified that biomedical articles achieved a degree of interest by using conjunctions. (Keshmirshekanb et al, 2019)

Gao (2016) has conducted a comparison between English natives' research articles and Chinese natives' ones in Computer Science, Linguistics, Management, and Physics concerning the use of linking adverbials. Findings showed no clear difference in the use of linking adverbials between the two groups except that Chinese natives tended to lessen additive and adversative use as compared to English natives. (Günes, 2017)

Tazegül (2015) matched the use of 'on the other hand' by Turkish doctoral students' academic writings with the native's academic writings belonging to Corpus of Contemporary American English. The outcomes showed that Turkish doctoral students are inclined to overuse 'on the other hand' rather than what is found in ENSs. On the same path, Uçar and Yükselir (2017) examined the use of conjunctions especially 'thus' by the Turkish advanced learner of English and the English native. Results indicate that Turkish advanced learners underuse 'thus' even though the appropriate use in their writings. (ibid)

Concerning the previous studies in illustrating the significance of using conjunctions in academic writings, the recent study clarifies the role of conjunctions in the hard and soft research articles by using Systemic Functional Linguistics (SFL). The study analysis (80) articles belong to various knowledge disciplines. The outcomes of the study show the high score of extending conjunctions over both enhancing and elaborating categories in both hard and soft domains.

2.6. Theoretical (Conceptual Framework)

As mentioned in the first chapter, Halliday's and Hassan's taxonomy (1976) classified the conjunctions - taking into consideration the semantical functions - into four categories: **additive conjunctions** contain *and...too* and *and...not* which are used to conjoin text units similar semantic path. **Adversative conjunctions** contain, *however*, *though*, *although* and *nevertheless*, that introduce information emphasizing spot corrections and contrasts that show the preceding information. The other category is **causal conjunctions** retains *so*, *thus*, *hence* and *therefore* that are used to introduce

information that comes to a result or as a natural consequence of the previous text. The last but not least, **temporal conjunctions** are found as *then, afterwards, after that* and *subsequently* are employed to relate two text units according to sequential, simultaneous, and last coloration (Uzun, 2017).

The current study has employed Halliday's taxonomy of cohesion (2014) where discussed conjunctions from the perspective of systemic functional linguistics (SFL) since it is "comprehensive" for being related with language in whole (Halliday & Matthiessen, 2004). Besides, SFL is adopted simply to illuminate how people understand and exchange meanings in context broadly since languages are not designed but rather evolved systems that cannot be explained simply as the sum of their parts like the traditional compositional way of approaching grammar (Halliday & Matthiessen, 2004). So the intent behind using Halliday's functional grammar "has been to construct a grammar for purposes of text analysis: one that would make it possible to say sensible and useful things about the text, spoken or written" (Halliday 1994).

The system of conjunctions derived from the functional grammar that bases the logical semantic relations between words, clauses, and paragraphs consist of **three** primary types: **elaborating**, **extending**, and **enhancing**. The types are classified into **nine** immediate sub-types, for example, **elaborating** is classified into two subtypes: **appositive** and **clarifying**. The conjunctions gathered according to the Functional Grammar are (118) to be analyzed according to the theory as will be shown in Table (1). Some of the conjunctions exist in two different semantic positions, like:

- 1) **Thus** is found in (Elaborating appositive exemplifying) and (Enhancement means)
- 2) **Then** is found in (Enhancement causal general) and (Enhancement conditional position)
- 3) **Yet** is found in (Extension addition adversative) and (Enhancement conditional concessive)
- 4) **However** is found in (Extension addition adversative) and (Enhancement conditional concessive)

5) **Here** is found in (Enhancing simple simultaneous) and (Enhancing matter positive). These are presented with their meanings in the table below in Table 1.

Table 1. *Types of conjunctive colorations besides their meanings and examples (Halliday, introduction to Functional Grammar, 2004)*

Primary types	Immediate sub-types	Meanings	Examples of items	
Elaboration	Apposition	Expository	In other words, that is (to say), I mean(to say), to put in another way	
		Exemplifying	For example(instance), to illustrate, thus	
	Clarification	Corrective	Or rather, at least, to be more precise	
		Distractive	By the way, incidentally	
		Dismissive	In any case, anyway, leaving that aside	
		Particularizing	In particular, more especially	
		Resumptive	To resume, as I was saying, to get back to the point	
		Summative	In short, briefly, to sum up, in conclusion	
		Verificative	In fact, as a matter of fact, actually, indeed	
Extension	Addition	Positive	And, moreover, furthermore, in addition, also	
		Negative	Nor	
		Adversative	But, yet, however, on the other hand	
	Variation	Replacive	Instead, on the other hand, on the contrary	
		Subtractive	Apart from that, except for that	
		Alternative	Alternatively, or (else)	
Enhancement	Spatiotemporal: temporal	Simple	Following	Then, next, secondly, my next point is, afterwards, first [including

				correlatives first... then]
			Simultaneous	Just then, at the same time, here, now
			Preceding	Before that, hitherto, previously, up to now
			Conclusive	In the end, finally, lastly, last of all
		Complex	Immediate	At once, thereupon, straightway
			Interrupted	Soon, after a while
			Repetitive	Next time, on another occasion
			Specific	Next day, that morning, an hour later
			Durative	Meanwhile, all that time
			Terminal	Up to that point, until then
	Punctiliar	At this moment		
	Manner	Comparison	Positive	Likewise, similarly
			Negative	in a different way
		Means	Thus, thereby, by such means, in the same manner	
	Causal	General	So, then, therefore, consequently, hence, because of that, for	
		Specific	Result	In consequence, as a result
Reason			On account of this, for that reason	

			Purpose	For that purpose, with this in view
	Conditional	Specific	Positive	Then, in that case, in that event, under the circumstances
			Negative	Otherwise, if not
			Concessive	Yet, still, though, nevertheless, despite this, however, even so, all the same
	Matter	Positive	Here, there, as to that, in that respect	
		Negative	In other respects, elsewhere	

2.7. Summary

It has been discussed in chapter II the orientation of the present study through reviewing the related literature on the discussion of the concept of Systemic Functional Linguistics (SFL) as the ground base for this research. In the next chapter, chapter III, the research will discuss the research design as well as the procedures followed in analyzing data of the recent study passing how the Systemic Functional Linguistics approach and 80 published articles of various branches belong to both hard and soft domains constructed through using conjunctions.

CHAPTER THREE: METHODOLOGY

3.1. Introduction

In this chapter, chapter three, the study will discuss several issues concerning the methodology including the research procedures, the research design, the sampling, the data collection, the data analysis, the pilot study, and trustworthiness

3.2. Research Design

This study will employ a qualitative approach in analyzing and evaluating the role of conjunctions and they are used within the hard and soft domains published research articles of Scopus Index Journals taking Halliday's taxonomy of cohesion (2014) as a base for analyzing conjunctions in addition to using the Systemic Functional Linguistics (SFL). Creswell (2014) shows the advantage beyond using qualitative study in relying on data analysis as well as including comments by the researcher concerning their performance. In the same path, Merriam (1988) defines a qualitative approach as developing the design with conveyed findings since the researcher deals with a human data resource to rebuild it. In this case, the main instrument used for collecting data in a qualitative approach is the researcher himself/herself rather than another inanimate mechanism (Eisner, 1991). Eisner (1991) added that the standards for judging qualitative approach are that researcher looks for credibility depending on coherence and understanding through verified processes rather than outdated measures.

3.3. Population

Under this section, the study will clarify the manifestation of the journals and articles gathered from Scientific Journal Rankings (SJR). All the journals and research articles have shared the point of being obtained from the gate of (open access only). Also, the date of the publication of the article started from the year 2017 passing gradually through 2018, 2019, and 2020 till the year 2021. The following two separated hard and soft domains tables that coordinated with some knowledge branches will illustrate the titles of the journals and articles numbers as well as the date of publication of each selected research article.

Table 2. Hard Domain Research Articles

Discipline	Journal	Number of articles	Date of publication
Chemistry	Journal of Cheminformatics	10	2020 - 2021
Medicine	Critical Care	2	2021
	Journal of Extracellular Vesicles	5	2020
	Patient Education and Counseling	3	2018 - 2019
Mathematics	Austrian Journal of Statistics	1	2020
	Applicable Analysis and Discrete Mathematics	2	2021
	Algorithms	2	2021
	Theory and Applications of Graphs	4	2021
	International Journal of STEM Education	1	2020
Physics	The European physical journal C	3	2021
	Molecular Physics	5	2020
	Physical review	2	2021

Table 2 describes the hard domain disciplines, as well as the selected research articles, belong to these disciplines and their number. The articles have been analyzed to identify the used conjunctions based on Halliday's Functional Theory.

Table 3. Soft Domain Research Articles

Discipline	Journals	Number of articles	Date of publication
Education	Communications in Information Literacy	3	2020
	Journal of Curriculum Studies	1	2018
	Educational Review	1	2019
	Studies in Continuing Education	1	2018
	Journal of Technology Education	1	2020
	International Journal of Science Education	3	2021
Linguistics	The Southeast Asian Journal of English Language Studies	10	2017 - 2018 - 2019
Philosophy	Cosmos and History: The Journal of Natural and Social Philosophy	1	2021
	Koersjournal	1	2021
	Research ethics	4	2021
	IDO movement for culture. Journal of Martial Arts Anthropology	2	2021
	Educational Philosophy and Theory	1	2020
	Library Philosophy and Practice (e-journal)	1	2021
Social science	Morbidity and Mortality Weekly Report	9	2020
	Sociological science	1	2020

Table 3 describes the soft domain disciplines, as well as the selected research articles, belong to these disciplines and their number. The articles have been analyzed to identify the used conjunctions based on Halliday's Functional Theory.

3.4. Data collection

The research articles belonging to both hard and soft domains are collected from Scientific Journal Rankings (SJR). The procedure started with log-in SJR. The homepage of SJR has main options: 1) All subject areas 2) All subject categories 3) All regions/countries 4) All types and 5) publication date (year). Under the main options, there are three options. One of these options is (only Open Access Journals) that the current study collects all the articles from it then analyzes them. As for the main options, the researcher shifts between the first and second options to get the hard and soft disciplines. The third option witnesses no change. The fourth option fixes to (journals) and last but not least the final option that shows the date of publication which is limited between 2017 and 2021.

3.5. Data analysis

Since the aim of the study is to identify and focus the role of conjunctions semantically within the research articles as well as evaluate the differences of the conjunctions between the hard and soft disciplines from the perspective of Systemic Functional Linguistics (SFL) by analyzing the research articles, the procedure to be taken place to achieve this intent is the same as the previous literature studies related to the same rubric by using of conjunctions and their noticeable roles in academic writings such as doctoral thesis or students and learners' argumentative essays. The task of analyzing the appointed research articles has started by reading the selected article sentence by sentence and highlighting each conjunction. Then, each article is represented by a table consisting of four columns. In addition, the researcher classified the identified conjunctions and positioned them in special tables according to Halliday's taxonomy of cohesion (2014), i.e. classifying conjunctions according to their semantic functions into three main categories: **elaborating** (e.g., in other words, for example, in particular, actually), **extending** (e.g., and, however, on the other hand, or) and **enhancing** (e.g., similarly, next, therefore, nevertheless). These designed tables depending on Microsoft Office Word 2013, are categorized into four columns: items of the articles, conjunctions, number of conjunctions, and meanings of the conjunctions. After that, the top frequent conjunctions of each article are extracted in terms of

percentage at the end of each article. The outcomes of both hard and soft domains research articles are discussed in Chapter Four.

3.6. Findings of the Pilot Study

This part of the study converses some articles belonging to various disciplines of both hard and soft domains to be analyzed through the use of conjunctions according to the Systemic Functional Linguistics (SFL). Half of these articles are distributed respectively for the hard domain are divided among Physics (2), Medicine (1), Mathematics (1), and Chemistry (1). On the other hand, the articles belong to the soft domain as Education (1), Linguistics (1), Philosophy (1), and Social science (2). The portions of using conjunctions starting with articles belonging to the hard domain as mentioned before are calculated by the use of each conjunction of the selected articles, i.e. the number and meanings of conjunctions used in abstract, introduction, methodology, conclusion, etc. Hence the following tables will illustrate this process.

Table 4. Conjunctions used in Physics

Conjunctions	Number of conjunctions	Meanings of conjunctions
And	312	Extending additive positive
Even	6	Enhancing conditional concessive
Despite	3	Enhancing conditional concessive
Also	20	Extending additive positive
If	19	Enhancing conditional concessive
However	15	Extending adversative
Or	8	Extending varying alternative
Briefly	1	Elaborating verifying summative
For this purpose	1	Enhancing causal purpose
Thus	4	Elaborating appositive exemplifying
But	16	Enhancing adversative
For example	3	Elaborating appositive exemplifying
Especially	1	Elaborating clarifying particularizing
In fact	1	Elaborating clarifying verificative
Nevertheless	5	Enhancing conditional concessive
Hence	3	Enhancing causal general
Though	1	Enhancing conditional concessive
As a result	2	Enhancing causal specific
For	1	Enhancing causal general
At least	2	Elaborating clarifying corrective
This means that	1	Elaborating appositive expository
In contrast to	4	Extending varying replacive
At least	1	Elaborating clarifying corrective
Here	3	Enhancing simple simultaneous
Therefore	5	Enhancing causal general
Furthermore	1	Extending additive positive
Then	5	Enhancing conditional positive
Later	1	Enhancing complex specific
In addition	1	Extending additive positive
For our purpose	1	Enhancing causal purpose
Moreover	2	Extending additive positive
For instance	1	Elaborating appositive exemplifying
In summary	1	Elaborating clarifying summative

Table 4 shows the findings of the frequencies of the conjunctions used in this article is (455) distributed as shown in percentage for each remarked conjunction: **and** 68, 57% **however** 5, 67% **also, if** 8, 56% **but** 3, 51%. These results clarify the superiority of extending conjunction over the other categories; enhancing and elaborating. However, the lowest used conjunctions in this discipline varied among **briefly, for this purpose, especially, in fact**, etc., remarked 0, 21% for each.

Table 5. Conjunctions used in Medicine

Conjunctions	Number of conjunctions	Meanings of conjunctions
And	74	Extending additive positive
In addition	3	Extending additive positive
But	2	Enhancing adversative
Or	7	Extending varying alternative
Thus	4	Elaborating appositive exemplifying
To illustrate	1	Elaborating appositive exemplifying
At least	5	Elaborating clarifying corrective
Especially	1	Elaborating clarifying particularizing

Table 5 shows that the number of conjunctions used in this article is (97) distributed as shown in percentage for each remarked conjunction: **and** 76, 28% **or** 7, 21% **at least** 5, 15%. The lowest conjunction rate in this field is represented by **to illustrate** and **especially** by scoring 1, 03% for each.

Table 6. Conjunctions used in Mathematics

Conjunctions	Number of conjunctions	Meanings of conjunctions
And	98	Extending additive positive
Or	22	Extending varying alternative
Also	9	Extending additive positive
However	1	Enhancing adversative
If	5	Enhancing conditional positive
Otherwise	2	Enhancing conditional negative
To illustrate	1	Elaborating appositive exemplifying
In addition	1	Extending additive positive
Furthermore	2	Extending additive positive
Otherwise	1	Enhancing conditional negative
Therefore	1	Enhancing causal general
Despite	1	Enhancing conditional concessive
Though	1	Enhancing conditional concessive

Table 6 shows that the number of conjunctions used in this article is (147) distributed as shown in percentage for each remarked conjunction: **and** 66, 66% **or** 14, 96% **also** 6, 12%. As for the conjunctions used at the least level are: **however**, **to illustrate**, **in addition**, etc. which remarked 0, 68% for each.

Table 7. Conjunctions used in Chemistry

Conjunctions	Number of conjunctions	of Meanings of conjunctions
Or	15	Extending varying alternative
And	121	Extending additive positive
Therefore	1	Enhancing causal general
In addition	3	Extending additive positive
However	8	Enhancing adversative
But	1	Enhancing adversative
Also	7	Extending additive positive
Then	2	Enhancing conditional positive
If	3	Enhancing conditional positive
Actually	1	Elaborating clarifying verificative
Because	1	Enhancing conditional positive
Similarly	1	Enhancing manner comparative
On the other hand	1	Enhancing adversative
At least	1	Elaborating clarifying corrective
Especially	2	Elaborating clarifying particularizing
Even	2	Enhancing conditional concessive
Nor	1	Extending additive negative
Instead	1	Extending varying replacive
Finally	3	Enhancing simple conclusive
Here	1	Enhancing simple simultaneously
Moreover	1	Extending additive positive
First	1	Enhancing simple following

Table 7 shows that the number of conjunctions used in this article is (178) distributed as shown in percentage for each remarked conjunction: **and** 67, 97% **or** 8, 42% **however** 4, 49%. The lowest conjunction rate remarked various kinds of conjunctions like: **therefore**, **but**, **actually**, etc. which scored 0, 56% for each.

Table 8. Conjunctions used in Education

Conjunctions	Number of conjunctions	Meaning of conjunctions
And	93	Extending additive positive
Nevertheless	4	Enhancing conditional concessive
But	18	Extending adversative
Despite	5	Enhancing conditional concessive
First	2	Enhancing simple following
Second	2	Enhancing simple following
Also	20	Extending additive positive
Furthermore	4	Extending additive positive
Or	33	Extending varying alternative
For example	8	Elaborating appositive exemplifying
Moreover	11	Extending additive positive
However	17	Extending adversative
There	1	Enhancing matter positive
Thus	14	Elaborating appositive exemplifying
For these reasons	2	Enhancing causal reason
Because	6	Enhancing causal general
If	29	Enhancing conditional positive
Even	14	Enhancing conditional concessive
At least	1	Elaborating clarifying corrective
Therefore	6	Enhancing causal general
For instance	3	Elaborating appositive exemplifying
Instead	5	Extending varying replacive
For	1	Enhancing causal general
Later	1	Enhancing simple following
Up to that point	2	Enhancing complex terminal
Though	8	Enhancing conditional concessive
To sum up	1	Elaborating clarifying summative
In this case	1	Elaborating clarifying dismissive
As a result	1	Enhancing causal result
Especially	1	Elaborating clarifying particularizing
Then	4	Enhancing conditional positive
However	3	Enhancing adversative
In this respect	2	Enhancing matter positive
So	1	Enhancing causal general
Actually	1	Elaborating clarifying summative
Any way	1	Elaborating clarifying dismissive
On the other hand	1	Extending adversative
In addition	1	Extending additive positive

Table 3.7 shows that the number of conjunctions used in this article is (328) distributed as shown in percentage for each remarked conjunction: **and** 28, 35% **or** 10, 06% **if** 8, 84%. The lowest conjunction percentages remarked through **at least**, **in addition**, **anyway**, etc. that showed 0, 30%

Table 9. Conjunctions used in Linguistics

Conjunctions	Number of conjunctions	of Meanings of conjunctions
And	187	Extending additive positive
Thus	2	Elaborating appositive exemplifying
Or	53	Extending varying alternative
Because of	3	Enhancing causal general
However	6	Extending adversative
Later	1	Enhancing simple following
Despite	3	Enhancing conditional concessive
Also	24	Extending additive positive
Instead of	1	Extending varying replacive
Especially	1	Elaborating clarifying particularizing
On the other hand	3	Extending adversative
Hence	1	Enhancing causal general
But	6	Extending adversative
Despite	5	Enhancing conditional concessive
Instead	2	Extending varying replacive
Likewise	1	Enhancing manner comparative
For example	5	Elaborating appositive exemplifying
Though	2	Enhancing conditional concessive
Similarly	1	Enhancing manner comparative
For that purpose	1	Enhancing causal purpose
So	1	Enhancing causal general
To illustrate this	1	Elaborating appositive exemplifying
For instance	1	Elaborating appositive exemplifying
In addition	1	Extending additive positive
Even	2	Enhancing conditional concessive
In this case	1	Elaborating clarifying dismissive
Especially	1	Elaborating clarifying particularizing
At least	1	Elaborating clarifying corrective
In other words	1	Elaborating appositive expository
First	2	Enhancing simple following
Second	2	Enhancing simple following
Actually	2	Elaborating clarifying summative
Consequently	1	Enhancing causal general

Table 9 shows that the number of conjunctions used in this article is (326) distributed as shown in percentage for each remarked conjunction: **and** 57, 36% **or**

16, 25% **also** 7, 36%. The lowest scored remarked conjunctions are: **consequently**, **in this case**, **later** that record 0, 30% for each.

Table 10. Conjunctions used in Philosophy

Conjunctions	Number of conjunctions	of Meanings of conjunctions
And	176	Extending additive positive
Also	11	Extending additive positive
Or	35	Extending varying alternative
Even	5	Enhancing conditional concessive
Hence	1	Enhancing causal general
So	1	Enhancing causal general
Before that	4	Enhancing simple preceding
But	23	Extending adversative
Instead	2	Extending varying replacive
In this way	1	Elaborating clarifying distractive
However	9	Extending adversative
In contrast to	1	Extending varying replacive
Especially	1	Elaborating clarifying particularizing
Otherwise	1	Elaborating clarifying destructive
Though	1	Enhancing causal concessive
In this way	1	Elaborating clarifying distractive
Thus	7	Elaborating appositive exemplifying
For example	4	Elaborating appositive exemplifying
Because	6	Enhancing causal general
Before that	1	Enhancing simple preceding
On the other hand	1	Extending adversative
If	2	Enhancing conditional positive
Later	1	Enhancing simple following
Then	1	Enhancing conditional positive

Table 10 shows that the number of conjunctions used in this article is (297) distributed as shown in percentage for each remarked conjunction: **and** 59, 25% **or**

11, 78% **but** 7, 74%. The conjunctions that score the lowest percentages in this discipline are **then, on the other hand, otherwise**, etc. which score 0, 33% for each.

Table 11. Conjunctions used in Social Science

Conjunctions	Number of conjunctions	Meanings of conjunctions
And	288	Extending additive positive
However	10	Extending adversative
Here	4	Enhancing matter positive
Also	14	Extending additive positive
If	9	Enhancing conditional positive
Therefore	6	Enhancing causal general
Hence	5	Enhancing causal general
For example	5	Elaborating appositive exemplifying
Moreover	2	Extending additive positive
Thereby	1	Enhancing manner means
Up to now	1	Enhancing simple preceding
Or	21	Extending varying alternative
Furthermore	3	Extending additive positive
At least	2	Elaborating clarifying corrective
Nevertheless	1	Enhancing conditional concessive
Even	1	Enhancing conditional concessive
Especially	3	Elaborating clarifying particularizing
Because of	8	Enhancing causal general
For instance	2	Elaborating appositive exemplifying
Thus	3	Elaborating appositive exemplifying
But	6	Enhancing adversative
Instead	1	Extending varying replacive
Now	1	Enhancing simple simultaneous
For this reason	1	Enhancing causal reason

Table 11 shows that the number of conjunctions used in this article is (398) distributed as shown in percentage for each remarked conjunction: **and** 72, 36% **or** 5,

27% **also** 3, 51%. The lowest remarked conjunctions in this field are: **for this reason**, **now**, **nevertheless**, etc. that scored 0, 025 % for each.

3.7. Trustworthiness (Validity, Reliability, and Credibility)

The current study has included reliability and credibility for the sake of controlling the shape of the researcher's work as it adopts a qualitative approach. In this section, trustworthiness comes to reveal both concepts. In addition, the study has implemented a procedure to collect facts about conjunctions used in the hard and soft domains research articles published in the Scopus Index Journals. Leech and Onwuegbuzie (2007) stated that the procedure of analyzing data is an important act in the light of the qualitative method. Hence, the procedure contained analyzing remarked conjunctions in the aforementioned articles according to Functional Theory. To confirm trustworthiness, a pilot study has been conducted by the researcher by selecting randomly (10) articles that belonged to varied eight disciplines divided equally under hard and soft domains. The findings of the pilot study clarified to a recognized extant the superiority of soft domain articles in using conjunctions more than what is found in the hard domain articles. The pilot study was examined by an expert in the field. He recommended making a chart to manifest the differences beyond using the kinds of conjunctions. Finally, he honestly led the researcher to support his findings with examples with the intent of enhancing the results of three research objectives that would be discussed in Chapter Four.

3.8. Summary

The procedures taken in Chapter Three started with the research design, data collection, and data analysis. Besides, the study handles a primary view concerning the more frequencies of conjunctions in the research articles of both hard and soft domains. Towards Chapter Four, the findings will be discussed according to three research questions passed in Chapter One.

CHAPTER FOUR: FINDINGS

4.1. Introduction

The current study will discuss the main findings in the case of responding to three research questions. The procedure devoted to achieving this purpose is *Word count*. The findings will be represented as follows: Findings of the research question (1) and Findings of the research question (2). After that, The researcher will compare the findings of the two research questions to get the response for the research question (3) in calculating which discipline used conjunctions more than the other one. However, the study analyzed the hard domain articles and position them in the appendix (1), whereas the articles that belong to the soft domain will be placed in the appendix (2).

4.2. Main findings

4.2.1. Findings of the Research Question (1)

The total of the utilized conjunctions remarked through (40) selected research articles belong to the hard domain is (6717) disturbed as follows: Mathematics (1886), Medicine (1702), Chemistry (1513), and Physics (1616). Under this section, the current study will view the procedure of analyzing conjunctions depending on Halliday's taxonomy of cohesion (2014) that classifies the conjunctions semantically into three categories: **extending**, **enhancing**, and **elaborating**. Extending conjunctions refers to conjunctions that add some new characteristics, give an alternative to it, or offer additional variables, e.g. (and, or, however). Extending conjunctions are divided into three categories: **additive**, **adversative** and **varying**. Furthermore, additive and varying extending have sub-categories as follows:

1. Additive extending is divided into: positive like (and, in addition) and negative like (nor).
2. Varying extending are divided into: replacive like (in contrast to, instead), subtractive like (apart from that), and alternative like (or).

The following table clarifies the categories and sub-categories of the extending conjunctions beside their frequencies and percentages of every discipline belonging to the hard domain.

Table 12. Extending conjunctions in the hard domain

Disciplines	Extending						Frequency and percentage
	Additive		Adversative	Varying			
	Positive	Negative		Replacive	Subtractive	Alternative	
Chemistry	988	3	76	3	-	127	24,02 %
Medicine	1216	2	145	2	-	211	31,68 %
Physics	950	-	108	8	-	74	22,91 %
Mathematics	961	-	70	3	-	43	21,65 %
Total	4115	5	399	16	-	455	4990

Table 12 shows that the frequency of additive positive conjunctions come in the first range of all the disciplines belonging to the hard domain with the superiority of medicine among other branches while other categories vary from one discipline to another, for example, adversative conjunctions come in the second position after additive positive ones in both physics and medicine, while alternative varying conjunctions remarked progress in number over adversative conjunctions in both chemistry and mathematics. In addition, the lowest frequencies of conjunctions are clear in the use of both additive negative and varying replacive while varying subtractive conjunctions have no presence in all the selected articles belonging to the hard domain. The following examples are chosen from the selected articles to elucidate the use of all extending conjunction types.

“DTINet [12] **and** NeoDTI [13] were **also** designed **and** developed as graph-based deep learning” (**Chemistry**, article no. 9)

“**Furthermore**, remaining mixtures **and** fragments with less than four heavy atoms were removed” (**Chemistry**, article no. 8)

“**Moreover**, these changes are preserved when the model is saved **or** exported” (**Chemistry**, no. 7)

“**In addition** to its separation power, recent studies [26–28] demonstrated the potential of GC × GC in chemical risk assessment” (**Chemistry**, article no. 5)

“Detailed coding **and** descriptive analysis of 185 video recordings from the EPaC study” (**Medicine**, article no. 10)

“Such systems are **also** recognized in biology” (**Physics**, article no. 7)

“We review the connection between the spectrum of the AO overlap matrix **and** the occupied **and** virtual density matrices” (**Physics**, article no. 6)

“Paths with a chord, **and** wheels with a chord” (**Mathematics**, article no. 7)

“**In addition**, it has been shown, that mathematics anxiety **also** correlates with other variables” (**Mathematics**, article no. 7)

“MS matching accuracy is neither easily predictable **nor** quantifiable” (**Chemistry**, article no. 2)

“We are not aware of any previous demonstration that co-isolated contaminants are active in signaling, **nor** that their activity can be misattributed to EVs” (**Medicine**, article no. 6)

“**However**, the child class methods can be overridden, allowing unlimited model customization” (**Chemistry**, article no. 7)

“**Yet**, the popularity of microRNAs prevails” (**Medicine**, article no. 4)

“**However**, by differentiating u concerning p , we find that the minimum value of u occurs at $(n) 1=kp = 1((k+1) t$ ” (**Mathematics**, article no. 8)

“The one-gluon exchange potential is attractive for ant triple-state **but** repulsive for sextet one” (**Physics**, article no. 3)

“**On the other hand**, data being generated either experimentally or computationally can serve as a foundation for computational studies” (**Chemistry**, article no. 10)

“sRNA-seq, **on the contrary**, does not require previous knowledge on the sequence to detect” (**Medicine**, article no. 4)

“The $a_1(1420)$ is no axial-vector meson resonance but such triangle singularity **instead**” (**Physics**, article no. 1)

“**On the other hand**, (7) can be also rewritten as” (**Mathematics**, article no. 3)

“**Alternatively**, if one thinks of S as being a bit of irregular surface terrain with ridges and valleys, then a closure operator fills in the valleys until the terrain is uniformly smooth” (**Mathematics**, article no. 5)

“anti-CD63 **or** anti-CD81 detection antibodies **or** a mixture of all three antibodies” (**Medicine**, article no. 3)

“Slight bond stretches **or** twists led to quite different mass spectral similarity scores” (**Chemistry**, article no. 2)

“Latin hypercube sampling [47], **or** straight uniform random sampling, are applicable” (**Physics**, article no. 4)

Concerning **enhancing** conjunctions which qualify the sentence with indirect characters of the time, place, cause, or situation, e.g. (so, nevertheless, therefore). The following table elucidates the categories and subcategories of the enhancing conjunctions as well as the frequencies and percentages of them in every discipline that belongs to the hard domain. Besides, the current study relies on abbreviation of some categories, like (**Pos.** = Positive), (**Neg.** = Negative), (**Compa.** = Comparative), (**Foll.** = Following), (**Simu.** = Simultaneous), (**Compl.** = Complex), (**Spec.** = Specific), (**Dura.** = Durative), (**Gen.** = General), (**Conc.** = Conclusive), (**Conce.** = Concessive). Moreover, the same abbreviations have been achieved in soft domain research articles.

Table 13. Enhancing conjunctions in the hard domain

Disciplines	Enhancing														Frequency and percentage
	Matter		Manner		Spa. Tem.					Causal		Conditional			
	Pos.	Neg.	Compa.	Means	Simple			Compl.		Gen.	Spec.	Pos.	Neg.	Conce.	
					Foll.	Simu.	Conc.	Spec.	Dura.						
Chemistry	23	3	5	1	18	5	11	6	-	111	3	42	1	24	18,04%
Medicine	13	1	5	1	18	-	9	3	-	68	-	54	-	23	13,90%
Physics	21	-	10	1	24	5	11	2	-	87	2	80	-	36	19,90%
Mathematics	18	1	15	2	26	4	16	-	-	106	-	443	18	36	48,85%
Total	75	5	35	5	86	14	47	11	-	372	5	619	19	119	1412

Table 4.2 shows differences in frequencies among the categories of the enhancing conjunctions of the varied hard domain disciplines. First, conditional positive conjunctions, like (then, if, in that case) hold the first position in frequency and percentage among all the selected articles starting with mathematics followed by physics, medicine then chemistry. Second, general causal conjunctions, like (so, therefore, hence, because, etc.) come in the first range among the articles of chemistry followed by mathematics, physics than medicine. On the other hand, the lowest conjunction frequencies have been scored in: matter negative conjunctions, like (in other respects, elsewhere), manner means conjunctions, like (in the same manner, thereby) and causal specific, like (on another occasion), while complex durative conjunction, like (all

that time) has no remarked signs in all the selected articles. The following examples are chosen from the selected articles to elucidate the use of all enhancing conjunction types:

“**Here**, a “1D” convolutional operation for linear structures is interpreted as scanning the input structure” (**Chemistry**, article no. 9).

“In vitro, the studies cited **here** that managed to solve discrepancies in the level of expression detected between platforms have one thing in common” (**Medicine**, article no. 4)

“**Here**, the links of the interior have been made bolder” (**Mathematics**, article no. 5)

“Since **then**, this model has been investigated in several possible arrangements” (**Physics**, article no. 10)

“**Then**, 1 N NaOH was added to the solution at a final concentration of 450mN” (**Medicine**, article no. 5)

“Unless stated **otherwise**, we will restrict to our discussion to the nontrivial 2-trees” (**Mathematics**, article no. 5)

“It, therefore, appeared that sample recovery after concentration was biased in favor of non-EV factors” (**Medicine**, article no. 6)

“This mild singularity is not strongly affected by the medium **because** the intermediate particles are not very affected themselves” (**Physics**, article no. 1)

“**First**, the protein data were applied to a one-dimensional convolutional neural network (1D-CNN)” (**Chemistry**, article no. 9)

“This triangle with heavy quarks is **even** less affected itself than the case of K.KK” (**Physics**, article no. 1)

“**Similarly** one can obtain its three-momentum form” (**Physics**, article no. 3)

As for elaborating conjunctions in which conjunctions restate the statement, in other words, specify in greater illustrations, comment, or exemplify, e.g. (in other words, for example, thus). The following table illustrates the categories and subcategories of the elaborating conjunctions as well as the frequencies and percentages of them in every discipline that belongs to the hard domain. Also, the study utilizes some abbreviations indicating some subcategories, like (**Expo.** = Expository), (**Exem.** = Exemplifying), (**Corr.** = Corrective), (**Distru.** = Destructive), (**Dism.** = Dismissive), (**Par.** = Particularizing), (**Res.** = Resumptive), (**Sum.** = Summative), (**Ver.** = Verificative)

Table 14. Elaborating conjunctions in the hard domain

Disciplines	Elaborating									Frequency and percentage
	Appositive		Clarifying							
	Expo.	Exem.	Corr.	Distru.	Dism.	Par.	Res.	Sum.	Ver.	
Chemistry	9	40	4	-	-	10	-	4	5	21,42%
Medicine	2	27	4	-	-	10	-	10	3	16,66%
Physics	5	55	2	-	1	20	-	4	18	31,25%
Mathematics	14	68	4	-	-	8	-	-	9	30,65%
Total	30	190	14	-	1	48	-	18	35	336

Table 14 shows that appositive exemplifying conjunctions, like (for example (instance), to illustrate, thus) are the most used among the hard domain disciplines starting with mathematics followed by physics, chemistry then medicine. The second conjunction frequency is clarifying particularizing conjunctions, like (in particular, more especially) found in physics at the top rang followed by chemistry, medicine then mathematics. The lowest conjunction percentage is pointed in clarifying dismissive, like (in any case, anyway) while clarifying destructive and resumptive conjunctions

have no share in the selected articles. The following examples clarify the use of elaborating conjunctions in the research articles:

“LHCb also observed a board structure” (**Physics**, article no. 3)

“Thus, we here explored whether human saliva affects ZIKV infectivity”
(**Medicine**, article no. 3)

“Thus, in principle, QCEIMS can compute spectra for any given compound structure” (**Chemistry**, article no. 2)

“Indeed, the use of residuals as a suitable diagnostic measure under the suitable model with boxplot turns out to be a good choice in detecting the outlying cells” (**Mathematics**, article no. 1)

4.2.2. Findings of Research Question two

The total of the utilized conjunctions remarked through (40) selected research articles belong to the soft domain is (9600) disturbed as follows: Education (2865), linguistics (2629), Philosophy (1721), and Social science (2385). The same procedure taken to analyze the conjunctions in the hard domain articles is committed to illustrate the conjunctions in the soft domain articles. For example, conjunctions have been analyzed according to Halliday’s taxonomy of cohesion (2014) that classifies the conjunctions semantically into three categories: **extending**, **enhancing**, and **elaborating**. The following table clarifies the use of extending conjunctions in each soft domain discipline as well as illustrates the categories and subcategories of the extending conjunctions.

Table 15. Extending conjunctions in the soft domain

Disciplines	Extending						Frequency and percentage
	Additive		Adversative	Varying			
	Positive	Negative		Replacive	Subtractive	Alternative	
Education	2002	5	186	14	-	253	30,15%
Linguistics	1890	2	119	32	-	203	27,53%
Philosophy	1110	1	129	5	-	168	17,32%
Social science	1433	1	118	22	-	465	24,99%
Total	6435	9	552	73	-	1089	8158

Table 15 shows that frequencies of additive positive conjunctions come in the top position of all the soft domain branches with the superiority of education followed by linguistics, social science than philosophy. In the second range, the varying alternative conjunctions record the highest position in social science followed by education, linguistics the philosophy. The third rank is clear for the adversative conjunctions starting with more frequency in education followed by philosophy, linguistics than social science. The lowest recorded conjunctions are noticed in both varying replacive and additive negative conjunctions while varying subtractive recorded no occurrence in the selected articles. The following examples are chosen from the selected articles to elucidate the use of all extending conjunction types.

*“This new argument is introduced via a preposition **and** has a benefactive/goal Interpretation” (Linguistics, article no. 6)*

*“**In addition**, they were asked to construct different sentences using various verbs” (Linguistics, article no.6)*

*“The final phase account of I-applicative can be predicted **also** from quantifier scope” (Linguistics, article no. 6)*

“Furthermore 73% of respondents reported that their violation experience was pariahioner” (Philosophy, article no. 6)

*“The interviews which were relevant to the ethical issues are **also** drawn upon” (Philosophy, article no. 3)*

*“Important social influencers such as parents **and** teachers can **also** contribute to girls’ disconnect from science” (Education, article no. 8)*

“Moreover, biodiversity education should not only focus on organisms that are closer to humans” (Education, article no. 9)

“In addition, false-positive anti-HCV tests have been reported to occur” (Social science, article no. 4)

*“For each recipient, a licensed **and** age-appropriate vaccine should be used” (Social science, article no. 5)*

Concerning **enhancing** conjunctions which qualify the sentence with indirect characters of the time, place, cause, or situation, e.g. (so, nevertheless, therefore). The following table elucidates the categories and subcategories of the enhancing conjunctions as well as the frequencies and percentages of them in every discipline that belongs to the soft domain. Besides, the current table relies on the same abbreviations as table 4.2 committed.

Table 16. Enhancing conjunctions in the soft domain

Disciplines	Enhancing														Frequency and percentage
	Matter		Manner		Spa. Tem.					Causal		Conditional			
	Pos.	Neg.	Compa	Means	Simple			Compl.		Gen.	Spec.	Pos.	Neg.	Conce.	
					Foll.	Simu.	Conc.	Spec.	Dura.						
Education	5	-	6	3	27	6	14	1	1	75	2	78	1	58	26,38%
Linguistics	8	-	10	4	21	-	8	-	7	120	8	54	1	37	26,47%
Philosophy	9	1	7	2	13	3	2	-	1	72	-	58	2	34	19,42%
Social science	2	-	3	2	39	1	8	-	2	92	-	119	7	16	27,71%
Total	24	1	26	11	100	10	32	1	11	359	10	309	11	145	1050

Table 16 shows differences in frequencies among the categories of the enhancing conjunctions of the varied soft domain disciplines. First, causal general conjunctions, like (because of, so, therefore) hold the first position in linguistics, social science, while conditional positive conjunctions, like (then, in that case) scored the highest frequency in both education and social science. Second, general causal conjunctions, like (so, therefore, hence, because, etc.) come in the second rang in both education and social science, while conditional positive conjunctions and conditional concessive conjunctions, like (yet, nevertheless, even) are remarked as the second level of frequency in both philosophy and

education respectively. On the other hand, the lowest conjunction frequencies have been scored in: matter negative conjunctions, like (in other respects, elsewhere) and causal specific, like (on another occasion) and that result is the same score as in table 4.2. Moreover, unlike table 4.2 all the categories of enhancing conjunctions are remarked among selected articles that belong to the soft domain. The following examples are chosen from the selected articles to elucidate the use of all enhancing conjunction types:

“**Finally**, I suggest a way in which the problems I identify in the previous section could be resolved” (**Philosophy**, article no. 9)

“**Therefore**, the question is in what concrete way neuroscience can or should work as evidence for educational practice” (**Philosophy**, article no. 9)

“**As a result** of the opioid epidemic, an increasing number of deceased donors have detectable HCV RNA” (**Social science**, article no. 3)

“**If** the data were amenable to pooling, effects were estimated via meta-analysis” (**Social science**, article no. 1)

“**Second**, both liminality and reflective practice can be seen as processes characterised by unpredictability” (**Education**, article no. 6)

“**Lastly**, all of these levels are embedded in global and political-sociocultural environments” (**Education**, article no. 4)

“**Nevertheless, despite** the ever-growing interest in embracing communicative approaches toward teaching” (**Linguistics**, article no. 5)

“Academic writing is the core of postgraduate studies **because** it is the means for communicating the findings and arguments to the readers” (**Linguistics**, article no. 9)

As for elaborating conjunctions in which conjunctions restate the statement, in other words, specify in greater illustrations, comment, or exemplify, e.g. (in other words, for example, thus). Table 4.6 illustrates the categories and subcategories of the elaborating conjunctions as well as the frequencies and percentages of them in every

discipline that belongs to the soft domain. Besides, the table will imitate the same abbreviations made in table 4.3.

Table 17. Elaborating conjunctions in the soft domain

Disciplines	Elaborating									Frequency and percentage
	Appositive			Clarifying						
	Expo.	Exem.	Corr.	Distru.	Dism.	Par.	Res.	Summ	Ver.	
Education	8	100	9	-	-	4	-	1	6	32,65%
Linguistics	-	63	2	-	-	13	-	3	24	26,78%
Philosophy	20	47	7	-	-	11	-	-	19	26,53%
Social science	7	21	16	-	-	9	-	-	2	14,03%
Total	35	231	34	-	-	37	-	4	51	392

Table 17 shows that appositive exemplifying conjunctions, like (for example (instance), to illustrate, thus) are the most used among the soft domain disciplines starting with education followed by linguistics, philosophy, then social science. The second conjunction frequency is clarifying particularizing conjunctions, like (in particular, more especially) found in linguistics at the top range followed by philosophy, education than social science. The lowest conjunction percentage is pointed in clarifying summative, like (in short, briefly, in conclusion) while clarifying destructive, dismissive and resumptive conjunctions have no share in the selected articles. The following examples clarify the use of elaborating conjunctions in the research articles:

“**For instance**, this may vary depending on the type of a target population they deal with” (**Linguistics**, article no. 10)

“For example, the students do not have encouragement to state their opinion about the current issue” (Linguistics, article no. 7)

“In fact, the students’ writing in the aspect of content, organization, vocabulary, grammar, and mechanics is not acceptable” (Linguistics, article no, 7)

“For example, Scopus measures the performance of research articles using SciVal” (Philosophy, article no, 10)

“We sought a solution to them; that is, we are focusing on ethics in practice” (Philosophy, article no, 4)

“For example, certain states enacted laws requiring prescribers to check PDMP” (Social science, article no. 6)

“Text Revision (DSM-IV-TR) for at least a portion of the children with abstracted information” (Social science, article no. 9)

“For example, Hébert and Hauf (2015) had only twenty-three service-learning students” (Education, article no. 3)

“The steadily rising grades may actually be a sign of grade inflation” (Education, article no. 5)

4.2.3. Findings of Research Questions Three

Under this section, it is proved that using conjunctions in soft domain articles tends to be higher in the number of frequency and percentage than what is found in the hard domain articles. The following table will show the conjunction frequencies of every discipline.

Table 18. 1197105

Disciplines	Conjunctions		
	Extending	Enhancing	Elaborating
Chemistry	1197	253	72
Medicine	1576	195	56
Physics	1140	279	105
Mathematics	1077	685	103
Hard Domain	4990	1412	336
Education	2460	277	128
Linguistics	2246	278	105
Philosophy	1413	204	104
Social science	2039	291	55
Soft Domain	8158	1050	392
Total	13,148	2452	728

Table 18 shows the total number of conjunctions used in all the selected research articles belonging to both hard and soft domains. Also, the table clarifies the superiority of soft domain articles over hard domain ones in using extending and elaborating conjunctions especially in the education discipline, while enhancing conjunctions are more used in physics than other disciplines. At the end of the analyzing data process, it seems that the conjunction density is more attractively used by soft domain research articles than what is existed on the other hard domain articles, especially in extending and elaborating conjunctions. The following figure will illustrate that superiority.

Conjunctions categories

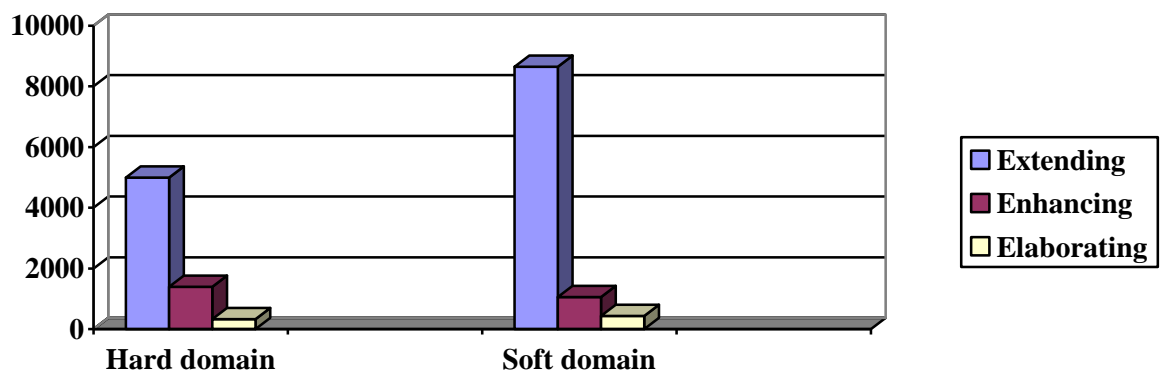


Figure 1. Conjunction categories and the rate between the hard and soft domain research articles

CHAPTER FIVE: CONCLUSION

5.1. Introduction

The current study draws a clear image concerning the density of conjunctions and the most frequent occurrence between the hard and soft domain articles. Concerning the qualitative approach, a statistical analysis has been committed according to *Word account* and made use of Word 2013. The following explanation will focus on the main findings obtained.

5.2. Reviewing the main findings

The use of conjunctions in the data set out of (80) research articles published in the Scopus Index Journals belong to various branches of knowledge as represented in Table (4.7) illustrated that the entire data set has a sum of (16328) conjunctions divided as (6738) conjunctions of the hard research articles, while (9600) conjunctions belong to the soft research articles. Extending conjunctions seem to be the most frequently used type particularly in using (and) followed by enhancing then elaborating categories.

5.3. Discussion

As mentioned in Chapter Four, the use of conjunctions appears more frequent in soft domain research articles than hard research articles. Education research articles score (2865) various kinds of conjunctions out of (10) articles belong to the same discipline that makes Education comes in the first rank of soft domain systems using conjunctions followed by Linguistics that scored (2629), Social science (2385) then Philosophy which comes at the last position of soft domain branches of using conjunctions by scoring (1721). Extending conjunctions come in the first step in the hard domain selected articles by (8158) frequent conjunctions followed by enhancing conjunctions which score (1050) then elaborating conjunctions that score (392). Besides, the researcher has proved the use of conjunctions in the selected articles through mentioning varied examples indicating each discipline using varied categories of conjunctions.

As for hard research articles, the rates showed convergence between its fields. At the top position among the branches of soft domain comes Mathematics selected

articles that show using varied kinds of conjunctions by remarking (1865). In the second rate comes Medicine pointing (1702) different kinds of conjunctions followed by Physics which scored (1524) and last but not least Chemistry with the lowest level of conjunctions by scoring (1522). The similarity in some results for the most frequent recorded conjunctions has been noted between hard and soft domain chosen articles. In other words, the highest level of conjunctions has represented by extending conjunctions especially using (and) by scoring the same result is repeated in the view of the more frequent scored conjunctions, i.e., Extending scored (4990) followed by Enhancing (1412) then Elaborating (336).

In comparison with the previous studies, the current study relies on the Systemic Functional theory like a study conducted by Noori (2015) to analyze the textual Themes of some dissertations and theses written by Iraqi learners. However, the findings of the current study, unlike Noori's study outcomes, showed that Extending conjunctions recorded the highest level amid the selected research articles rather than other kinds of conjunctions used, i.e., enhancing and elaborating conjunctions.

The current study depends on the articles between 2017 and 2021 which leads to the requirement in using conjunctions in the latest articles. Also, all the selected articles are obtained from Scientific Journal Rankings (SJR) particularly (Q1) that is available to all researchers in open access. The study spends nearly a year collecting data and analyzing them to get accurate rates.

The current study implied the necessity for the use of Systemic Functional Linguistics (SFL) since the big usage of conjunctions in the hard and soft domains research articles. Besides, the mentioned theory is descriptive and comprehensive.

5.4. Implications of the Study

The current study could be employed by the researchers, teachers, academic writers to clarify the importance of conjunctions in increasing the reader's and learners' understanding. Furthermore, the outcomes of the current study will motivate the students and learners towards a better understanding of well-coherent texts or evaluate their writing style as well as their spoken rhetorical ability by conducting well-structured compositions or articles with combined sentences using suitable

conjunctions. As for the spoken field, Discourse Analysis is regarded as a multi-faceted field that refers to both communication forms (spoken and written). Moreover, this field creates a distinctive region where the linguists can search under what is read or heard. One aspect of discourse analysis is conjunctions that are used in oral or written forms by varied descriptions, such as “discourse connectors” by Blackmore (1987), “discourse operators” by Redeker (1990). Conjunctions are inseparable from any communication.

Conjunctions are considered the most significant discourse strategy of cohesive logical connectors to achieve communication in general. Conjunctions, for long periods, represent a wealthy area for interesting research that leads to beneficial outcomes for their effective construction of ideas logically as well true guide to the listener through the discourse fields such as classrooms and lectures in the university. In this case, the conjunction can signal relationships and help the speaker to manage interaction while contributing little propositional meaning.

The results out of using conjunctions are of a great. They come to help the readers understand where to stop and where to continue reading in any piece of writing. Besides, they can help them expect and as a result, they can speed up and fully summarize the reading at their hands. An excessive number of examples of these pieces of writing are available in corpora, which give hints on the use of the DMs in different texts. Conjunctions also help the students learn how to organize their writing in deciding the beginning and the ending of their work. It is hoped that the outcomes of the recent study would lead to future designs of learning activities (Netreke, 2015).

5.5. Limitations of the Study and Future Suggestions

The current study focuses only on using conjunctions in (80) various articles belonging to the hard and soft domains published in the Scopus Index Journal from the period 2017 to 2021 employing Systemic Functional Theory as the modal basis of the study. Besides, the current study relies on the *Word account* system to get an appropriate statistical percentage. The current study will be a beneficial factor for future studies to add more details concerning the use of conjunctions from the perspective of (SFL) such as academic writings, Master dissertations, and Ph.D. thesis. These possible studies can be managed to increase the students’ understanding levels

by either choosing another varied discipline of knowledge that used conjunctions or exploring the use of conjunctions in other genres of academic writings such as scientific reports, newspapers, students' compositions, etc or choosing another perspective to analysis the conjunctions according to as shown in the previous studies mentioned in Chapter Two. On the other hand, these studies may involve other procedures to examine the use of conjunctions in academic writings, such as interviews, questionnaires, surveys, etc.

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CURRICULUM VITAE

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APPENDIX 1.

HARD DOMAIN RESEARCH ARTICLES

I. Chemistry

Titles of the journals	Number of the articles	Titles of articles	Date of publication
Journal of Cheminformatics	of 10	<i>DECIMER: towards deep learning for chemical image recognition</i>	2020
		<i>Predicting in silico electron ionization mass spectra using quantum chemistry</i>	2020
		<i>Molecule Set Comparator (MSC): a CDK-based open rich-client tool for molecule set similarity evaluations</i>	2021
		<i>DECIMER-Segmentation: Automated extraction of chemical structure depictions from scientific literature</i>	2021
		<i>Development and evaluation of two-parameter linear free energy models for the prediction of human skin permeability coefficient of neutral organic chemicals</i>	2021
		<i>Analysis of the effects of related fingerprint on molecular similarity using an eigenvalue entropy approach</i>	2021
		<i>Flame: an open-source framework for model development, hosting, and usage in production environments</i>	2021
		<i>Assessing the calibration in toxicological in vitro models with conformal prediction</i>	2021
		<i>Deep learning integration of molecular and interactome data for protein compound interaction prediction</i>	2021
		<i>What is the role of cheminformatics in a pandemic?</i>	2021

II. Medicine

Titles of journals	Number of the articles	Titles of articles	Date of publication
Critical care	2	<i>Dead space estimates may not be independently</i>	2021

		<i>associated with 28-day mortality in COVID-19 ARDS</i>	
		<i>Cerebral venous sinus thrombosis associated with thrombocytopenia post-vaccination for COVID-19</i>	2021
Journal of Extracellular Vesicles	5	<i>Salivary extracellular vesicles inhibit Zika virus but not SARS-CoV-2 infection</i>	2020
		<i>Stumbling on elusive cargo: how isomiRs challenge microRNA detection and quantification, the case of extracellular vesicles</i>	2020
		<i>Increased small extracellular vesicle secretion after chemotherapy via upregulation of cholesterol metabolism in acute myeloid leukemia</i>	2020
		<i>Stem cell-derived extracellular vesicles mitigate ageing-associated arterial stiffness and hypertension</i>	2020
		<i>Experimental artifacts can lead to misattribution of bioactivity from soluble mesenchyme stem cell paracrine factors to extracellular vesicles</i>	2020
Patient Education and Counseling	3	<i>Patient-led decision making: Measuring autonomy and respect in Canadian maternity care</i>	2018
		<i>Motivational interviewing training for physiotherapy and occupational therapy students: Effect on confidence, knowledge, and skills</i>	2018
		<i>The elicitation and management of multiple health concerns in GP consultations</i>	2019

III. Mathematics

Titles of journals	of the	the Number of the articles	Titles of articles	Date of publication
Austrian Journal of Statistics		1	<i>Detection of Outlying Cells in Contingency Tables Using Model-Based Diagnostics</i>	2020
Applicable and Mathematics	Analysis and Discrete	2	<i>ON the insides in number fields and their computation for small degrees</i>	2021
			<i>Another two families of integer-valued polynomials associated with finite Trigonometric sums</i>	2021
Algorithms		2	<i>Special Issue on “Graph Algorithms and Applications”</i>	2021
			<i>A Set-Theoretic Approach to Modeling Network Structure</i>	2021
Theory and Applications		4	<i>Characterizing 2-Trees Relative to Chordal and Series-Parallel Graphs</i>	2021

Graphs		<i>Nilpotent Graph</i>	2021
		<i>The Integer-antimagic Spectra of Graphs with a Chord</i>	2021
		<i>Reducing the maximum degree of a graph: comparisons of bounds</i>	2021
International Journal of STEM Education	1	<i>Mathematics anxiety among STEM and social sciences students: the roles of mathematics self-efficacy, and deep and surface approach to learning</i>	2020

IV. Physics

Titles of journals	of the	the Number of the articles	Titles of articles	Date of publication
The European physical journal C		3	<i>Heating triangle singularities in heavy-ion collisions</i>	2021
			<i>Analytic non-Abelian gravitating solitons in the Einstein–Yang–Mills–Higgs theory and transitions between them</i>	2021
			<i>Tetraquark state X(6900) and the interaction between diquark and antidiquark</i>	2021
Molecular Physics		5	<i>Automated determination of hybrid particle-field parameters by machine learning</i>	2020
			<i>Guaranteed convergence for a class of coupled-cluster methods based on Arponen's extended theory</i>	2020
			<i>Insight from energy decomposition analysis on a hydrogen-bond-mediated mechanism for on-water catalysis</i>	2020
			<i>The spectrum of the atomic orbital overlap matrix and the locality of the virtual electronic density matrix</i>	2020
			<i>Two-photon absorption in host-guest complexes</i>	2020
Physical review		2	<i>Quantum Photonic Interface for Tin-Vacancy Centers in Diamond</i>	2021
			<i>Probing thermal fluctuations through scalar test particles</i>	2021

1) Chemistry

DECIMER: towards deep learning for chemical image recognition (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	4	Extending additive positive
	Here	1	Enhancing matter positive
	But	1	Extending adversative
Main text	And	28	Extending additive positive
	Or	7	Extending varying alternative
	For	4	Enhancing causal general
	Instead	2	Extending varying replacive
	Here	7	Enhancing matter positive
	For example	1	Elaborating clarifying exemplifying
	But	1	Extending adversative
	Because	1	Enhancing causal general
	Even	2	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	Therefore	2	Enhancing causal general
	Conclusion	Also	1
Here		1	Enhancing matter positive
And		6	Extending additive positive
For example		1	Elaborating clarifying exemplifying
But		1	Extending adversative

The number of conjunctions used in this article is (72) distributed as shown in percentage for each remarked conjunction: **and** 52, 77% **here** 12, 5% **or** 9, 72%. However the lowest used conjunctions are: **but**, **for example**, and **though** 1, 3%

Predicting in silico electron ionization mass spectra using quantum chemistry (2020)

Items of the article	the Conjunctions	Number of conjunctions	of Meanings of conjunctions	
Abstract	Or	1	Extending varying alternative	
	Here	1	Enhancing matter positive	
	And	2	Extending additive positive	
Introduction	And	11	Extending additive positive	
	Yet	2	Extending adversative	
	For example	1	Elaborating clarifying exemplifying	
	Thus	1	Elaborating clarifying exemplifying	
	Because	2	Enhancing causal general	
	Nor	1	Extending additive negative	
	And	18	Extending additive positive	
Methods	First	1	Enhancing simple following	
	Because	2	Enhancing causal general	
	At once	1	Enhancing complex immediate	
	Then	1	Enhancing conditional positive	
	Here	1	Enhancing matter positive	
	Also	1	Extending additive positive	
	And	53	Extending additive positive	
	Here	4	Enhancing matter positive	
	Results	Also	6	Extending additive positive
	Because	4	Enhancing causal general	
Nor	1	Extending additive negative		
Indeed	1	Elaborating clarifying verificative		
However	1	Extending adversative		
At the same time	1	Enhancing simple simultaneous		
If	4	Enhancing conditional positive		
Therefore	2	Enhancing causal general		
Next	1	Enhancing simple following		
In other words	1	Elaborating appositive expository		
For example	2	Elaborating clarifying exemplifying		
But	3	Extending adversative		
In short	1	Elaborating clarifying summative		
Last	1	Enhancing simple following		
Or	5	Extending varying alternative		
Even	2	Enhancing conditional concessive		
In conclusion	2	Elaborating clarifying summative		
Similarly	1	Enhancing manner comparative		
Here	1	Enhancing matter positive		
However	1	Extending adversative		
Or	2	Extending varying alternative		
Even	1	Enhancing conditional concessive		
Conclusion				

The number of conjunctions used in this article is (148) distributed as shown in percentage for each remarked conjunction: **and** 56, 75% **or** 5, 40% **because** 5, 40%. The lowest remarked conjunctions are: **even**, **indeed**, and **nor** 0, 67%

Molecule Set Comparator (MSC): a CDK-based open rich-client tool for molecule set similarity evaluations (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	3	Extending additive positive
	Or	1	Extending varying alternative
Introduction	Or	14	Extending varying alternative
	And	24	Extending additive positive
	Then	3	Enhancing conditional positive
	For	3	Enhancing causal general
	In addition	1	Extending additive positive
Conclusion	Also	3	Extending additive positive
	Sum up	1	Elaborating clarifying summative
Conclusion	And	5	Extending additive positive
	For	1	Enhancing causal general
	In addition	1	Extending additive positive

The number of conjunctions used in this article is (60) distributed as shown in percentage for each remarked conjunction: **and** 53, 33% **or** 25% **for** 6, 66%. the lowest scored conjunctions are: **for**, **sum up** 1, 66%

DECIMER-Segmentation: Automated extraction of chemical structure depictions from scientific literature (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions	
Abstract	And	6	Extending additive positive	
	Here	1	Enhancing simple following	
	Also	1	Extending additive positive	
Introduction	And	43	Extending additive positive	
	Hence	1	Enhancing causal general	
	Or	10	Extending varying alternative	
	If	6	Enhancing conditional positive	
	Nevertheless	1	Enhancing conditional concessive	
	Then	4	Enhancing conditional positive	
	For	1	Enhancing causal general	
	Here	1	Enhancing matter positive	
	First	2	Enhancing simple following	
	Instead	1	Extending varying replacive	
	Also	2	Extending additive positive	
	Furthermore	1	Extending additive positive	
	But	1	Extending adversative	
	For example	1	Elaborating clarifying exemplifying	
	At least	1	Elaborating clarifying corrective	
	If no	1	Enhancing conditional negative	
	In this case	1	Enhancing conditional positive	
	Even	1	Enhancing conditional concessive	
	Methods	And	2	Extending additive positive
		If	1	Enhancing conditional positive
Furthermore		1	Extending additive positive	
Or		1	Extending varying alternative	
Or		3	Extending varying alternative	
Also		1	Extending additive positive	
And		3	Extending additive positive	
Results and discussion		For example	1	Elaborating clarifying exemplifying
		If	2	Enhancing conditional positive
		For	2	Enhancing causal general
	Because	1	Enhancing causal general	
	Hence	2	Enhancing causal general	
	And	4	Extending additive positive	
	For	2	Enhancing causal general	
	Even			
		1	Enhancing conditional concessive	
Conclusion				

The number of conjunctions used in this article is (114) distributed as shown in percentage for each remarked conjunction: **and** 50, 87% **or** 12, 28% **if** 7, 89%.

The lowest remarked conjunctions are: **at least**, **instead** 0, 09%

Development and evaluation of two-parameter linear free energy models for the prediction of human skin permeability coefficient of neutral organic chemicals (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions	
Abstract	Or	1	Extending varying alternative	
	Furthermore	1	Extending additive positive	
	And	3	Extending additive positive	
	However	1	Extending adversative	
Introduction	And	29	Extending additive positive	
	For	3	Enhancing causal general	
	Therefore	2	Enhancing causal general	
	Hence	1	Enhancing causal general	
	But	1	Extending adversative	
	However	1	Extending adversative	
	In addition	1	Extending additive positive	
	Then	1	Enhancing conditional positive	
	Because	1	Enhancing causal general	
	And	48	Extending additive positive	
	For	7	Enhancing causal general	
	Materials and methods	Therefore	1	Enhancing causal general
		Hence	1	Extending additive positive
		Also	2	Extending additive positive
Or		2	Extending varying alternative	
Lastly		1	Enhancing simple conclusive	
Because		1	Enhancing causal general	
Next		1	Enhancing simple following	
Finally		1	Enhancing simple conclusive	
Even		1	Enhancing conditional concessive	
Though		1	Enhancing conditional concessive	
And		49	Extending additive positive	
However		4	Extending adversative	
For		4	Enhancing causal general	
Results and discussion		Or	2	Extending varying alternative
		Also	4	Extending additive positive
		Because	1	Enhancing causal general
		Here	2	Enhancing simple following
	Finally	3	Enhancing simple conclusive	
	But	1	Extending adversative	
	Especially	1	Elaborating clarifying particularizing	
	Hence	1	Enhancing causal general	
	And	11	Extending additive positive	
	If	1	Enhancing conditional positive	
	Or	2	Extending varying alternative	
	However	3	Extending adversative	
	Because	1	Enhancing causal general	
	Limitations and outlook	Though	1	Enhancing conditional concessive
Thus		1	Elaborating clarifying exemplifying	

The number of conjunctions used in this article is (225) distributed as shown in percentage for each remarked conjunction: **and** 62, 22% **for** 6, 22 % **however** 4%. The lowest pointed conjunctions are: **furthermore, if** 0, 44%

Analysis of the effects of related fingerprint on molecular similarity using an eigenvalue entropy approach (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions	
Abstract	Here	1	Enhancing matter positive	
	And	4	Extending additive positive	
	For	1	Enhancing causal general	
Introduction	Thus	2	Elaborating clarifying exemplifying	
	Or	2	Extending varying alternative	
	For example	1	Elaborating clarifying exemplifying	
	And	10	Extending additive positive	
	However	1	Extending adversative	
	That is	1	Elaborating appositive expository	
	Here	1	Enhancing matter positive	
Methods	And	14	Extending additive positive	
	Then	1	Enhancing conditional positive	
	That is	1	Elaborating appositive expository	
	But	1	Extending adversative	
	Because	1	Enhancing causal general	
	Because	3	Enhancing causal general	
	Or	2	Extending varying alternative	
results	Thus	1	Elaborating clarifying exemplifying	
	However	1	Extending adversative	
	And	50	Extending additive positive	
	In addition	2	Extending additive positive	
	Even	1	Enhancing conditional concessive	
	Indeed	1	Elaborating clarifying verificative	
	Then	1	Enhancing conditional positive	
	If	1	Enhancing conditional positive	
	Next	2	Enhancing simple following	
	In other words	2	Elaborating appositive expository	
	That is	1	Elaborating appositive expository	
	At least	1	Elaborating clarifying corrective	
	Conclusion	And	9	Extending additive positive
		Thus	1	Elaborating clarifying exemplifying
		Yet	1	Extending adversative

Here	1	Enhancing matter positive
Because	1	Enhancing causal general

The number of conjunctions used in this article is (130) distributed as shown in percentage for each remarked conjunction: **and** 66, 92% **because** 3, 84% **or, thus** 3, 07%. The lowest utilized conjunctions: **for example, yet** 0, 76%

Flame: an open-source framework for model development, hosting, and usage in production environments (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	For	1	Enhancing causal general
	And	4	Extending additive positive
	Or	1	Extending varying alternative
	Moreover	1	Extending additive positive
Introduction	And	28	Extending additive positive
	Or	11	Extending varying alternative
	Also	4	Extending additive positive
	For	7	Enhancing causal general
	Indeed	1	Extending adversative
	If	4	Enhancing conditional positive
	However	2	Extending adversative
	For this reason	4	Enhancing causal specific
	Therefore	1	Enhancing causal general
	Even	1	Enhancing conditional concessive
Implementations	Or	13	Extending varying alternative
	Also	3	Extending additive positive
	And	17	Extending additive positive
	Thus	2	Elaborating clarifying exemplifying
	For example	3	Elaborating clarifying exemplifying
	Finally	1	Enhancing simple conclusive
	Then	1	Enhancing conditional positive
	For	1	Enhancing causal general
But	1	Extending adversative	

Results	However	1	Extending adversative
	Moreover	1	Extending additive positive
	And	82	Extending additive positive
	For	10	Enhancing causal general
	Or	27	Extending varying alternative
	But	5	Extending adversative
	Also	9	Extending additive positive
	However	5	Extending adversative
	In this case	1	Enhancing conditional positive
	Thus	2	Elaborating clarifying exemplifying
	If	5	Enhancing conditional positive
	Even	1	Enhancing conditional concessive
	Furthermore	1	Extending additive positive
	For this reason	2	Enhancing causal specific
	First	1	Enhancing simple following
	Finally	2	Enhancing simple conclusive
	Therefore	1	Enhancing causal general
	Indeed	1	Elaborating clarifying verificative
	For example	2	Elaborating clarifying exemplifying
	Moreover	2	Extending additive positive
	But	1	Extending adversative
	Also	1	Extending additive positive
	Even	1	Enhancing conditional concessive
	Yet	1	Extending adversative
	In this respect	1	Enhancing matter positive

The number of conjunctions used in this article is (268) distributed as shown in percentage for each remarked conjunction: **and** 48, 88% **or** 19, 40 **also** 6, 34%. The lowest registered conjunctions are: **in this respect, yet** 0, 37%

Assessing the calibration in toxicological in vitro models with the conformal prediction (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	5	Extending additive positive
	Thus	1	Elaborating clarifying exemplifying
Introduction	And	15	Extending additive positive
	But	1	Extending adversative
	Also	3	Extending additive positive
	Or	5	Extending varying alternative
	Hence	1	Enhancing causal general
	However	1	Extending adversative
	Thus	1	Elaborating clarifying exemplifying
	Especially	1	Elaborating clarifying particularizing
	For example	1	Elaborating clarifying exemplifying
	For this purpose	1	Enhancing causal specific
	Data and methods	For	1
First		1	Enhancing simple following
Second		1	Enhancing simple following
And		16	Extending additive positive
Finally		1	Enhancing simple conclusive
For		2	Enhancing causal general
If		1	Enhancing conditional positive
Briefly		1	Elaborating clarifying summative
But		1	Extending adversative
Furthermore		1	Extending additive positive
Also		1	Extending additive positive
Modelling	Hence	1	Enhancing causal general
	And	20	Extending additive positive
	Then	1	Enhancing conditional positive
	But	1	Extending adversative
	Hence	1	Enhancing causal general
	Also	1	Extending additive positive
Study design	Or	1	Extending varying alternative

	And	11	Extending additive positive
	Finally	1	Enhancing simple conclusive
	But	2	Extending adversative
	Hence	1	Enhancing causal general
	Also	2	Extending additive positive
Results and discussion	Then	1	Enhancing conditional positive
	And	43	Extending additive positive
	Also	8	Extending additive positive
	Hence	2	Enhancing causal general
	So	1	Enhancing causal general
	But	6	Extending adversative
	Or	6	Extending varying alternative
	Especially	3	Elaborating clarifying particularizing
	For this reason	1	Enhancing causal specific
	Thus	4	Elaborating clarifying exemplifying
	Furthermore	1	Extending additive positive
	Even	1	Enhancing conditional concessive
	If	6	Enhancing conditional positive
	For	3	Enhancing causal general
	However	4	Extending adversative
Conclusion	On the other hand	1	Extending adversative
	Therefore	1	Enhancing causal general
	And	6	Extending additive positive
	For	1	Enhancing causal general
	Especially	1	Elaborating clarifying particularizing
	If	1	Enhancing conditional positive
	However	1	Extending adversative

The number of conjunctions used in this article is (208) distributed as shown in percentage for each remarked conjunction: **and** 55, 67% **also** 7, 21% **or** 5, 76%. The lowest recorded conjunctions are: for this reason, first, second **0, 48%**

Deep learning integration of molecular and interactome data for protein–
compound interaction prediction (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	Or	1	Extending adversative
	And	11	Extending additive positive
	However	1	Extending adversative
	Furthermore	1	Extending additive positive
Introduction	And	35	Extending additive positive
	Therefore	1	Enhancing causal general
	However	2	Extending adversative
	Or	2	Extending varying alternative
	In particular	1	Elaborating clarifying particularizing
	For	4	Enhancing causal general
	Because	2	Enhancing causal general
	For example	1	Elaborating clarifying exemplifying
	For instance	1	Elaborating clarifying exemplifying
	Also	2	Extending additive positive
	In addition	2	Extending additive positive
	Furthermore	1	Extending additive positive
	Methods	Finally	1
First		2	Enhancing simple following
And		69	Extending additive positive
Here		1	Enhancing matter positive
Also		5	Extending additive positive
Or		2	Extending varying alternative
For		4	Enhancing causal general
Then		2	Enhancing conditional positive
In other words		2	Elaborating appositive expository
Similarly		1	Enhancing manner comparative
If		2	Enhancing conditional positive
At least		1	Elaborating clarifying corrective
Thus		1	Elaborating clarifying exemplifying
In particular		2	Elaborating clarifying particularizing

	Nor	2	Enhancing matter negative
	Especially	1	Elaborating clarifying particularizing
Results	Hence	1	Enhancing causal general
	And	38	Extending additive positive
	Furthermore	1	Extending additive positive
	For example	1	Elaborating clarifying exemplifying
	In fact	1	Elaborating clarifying verificative
	Thereby	1	Enhancing manner means
	Also	1	Extending additive positive
	For	2	Enhancing causal general
	Therefore	2	Enhancing causal general
	Discussion	And	22
Similarly		2	Enhancing manner comparative
However		2	Extending adversative
In fact		1	Elaborating clarifying verificative
In other words		2	Elaborating appositive expository
Also		1	Extending additive positive
Therefore		2	Enhancing causal general
For example		1	Elaborating clarifying exemplifying
Nevertheless		1	Enhancing conditional concessive
That is		1	Elaborating appositive expository
Conclusion	But	1	Extending adversative
	And	5	Extending additive positive
	Even	1	Enhancing conditional concessive
	Nor	1	Enhancing matter negative
	For example	1	Elaborating clarifying exemplifying

The number of conjunctions used in this article is (258) distributed as shown in percentage for each remarked conjunction: **and** 69, 76% **however** 1, 93%
therefore 1, 93%. The lowest remarked conjunctions are: **in particular, in other words** 0, 38%

What is the role of cheminformatics in a pandemic? (2021)

Items of the article	Conjunctions	Number of conjunction	Meanings of conjunctions	
the Abstract	And	1	Extending additive positive	
	For example	1	Elaborating clarifying exemplifying	
	Or	2	Extending varying alternative	
Computation is necessary but not sufficient	For	1	Enhancing causal general	
	And	4	Extending additive positive	
	Or	3	Extending varying alternative	
	However	1	Extending adversative	
	Indeed	1	Elaborating clarifying verificative	
	Similarly	1	Enhancing manner comparative	
	Even	1	Enhancing conditional concessive	
Open is a starting point	But	2	Extending adversative	
	On the other hand	1	Extending adversative	
	Or	1	Extending varying alternative	
	And	4	Extending additive positive	
	For example	1	Elaborating clarifying exemplifying	
	Yet	1	Extending adversative	
	Even	1	Enhancing conditional concessive	
	And	10	Extending additive positive	
	Cheminformatics in action	In other words	1	Elaborating appositive expository
		On the other hand	1	Extending adversative
For		1	Enhancing causal general	
But		1	Extending adversative	
At least		1	Elaborating clarifying corrective	
Conclusion		And	15	Extending additive positive
	However	1	Extending adversative	
	Also	1	Extending additive positive	
	Thus	1	Elaborating clarifying exemplifying	
	But	1	Extending adversative	

The number of conjunctions used in this article is (61) distributed as shown in percentage for each remarked conjunction: **and** 55, 73% **or** 9, 83% **but** 6, 55%. The lowest pointed conjunctions are: **indeed, in other words** 1, 63%

2) Medicine

Dead space estimates may not be independently associated with 28-day mortality in COVID-19 ARDS (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	8	Extending additive positive
	At least	1	Elaborating clarifying corrective
	If	1	Enhancing conditional positive
	Or	1	Extending varying alternative
	But	1	Extending adversative
Background	And	8	Extending additive positive
	At least	1	Elaborating clarifying corrective
	However	1	Extending adversative
	Therefore	1	Enhancing causal general
	Because of	1	Enhancing causal general
Methods	And	43	Extending additive positive
	If	1	Enhancing conditional positive
	But	2	Extending adversative
	Or	4	Extending varying alternative
	For	1	Enhancing causal general
	In addition	4	Extending additive positive
Results	Also	1	Extending additive positive
	And	32	Extending additive positive
	Also	1	Extending additive positive
	But	1	Extending adversative
	Especially	1	Elaborating clarifying particularizing
	Or	4	Extending varying alternative
	And	30	Extending additive positive

	However	4	Extending adversative
	Therefore	2	Enhancing causal general
	Despite	1	Enhancing conditional concessive
	In addition	1	Extending additive positive
	Or	2	Extending varying alternative
Discussion	If	1	Enhancing conditional positive
	For	1	Enhancing causal general
	For example	1	Elaborating clarifying exemplifying
	But	3	Extending adversative
	Thereby	1	Enhancing manner means
	Because	1	Enhancing causal general
	Also	5	Extending additive positive
	Yet	1	Extending adversative
	Because of	1	Enhancing causal general
	Especially	1	Elaborating clarifying particularizing
Conclusion	And	2	Extending additive positive
	But	1	Extending adversative

The number of conjunctions used in this article is (178) distributed as shown in percentage for each remarked conjunction: **and** 69, 10 % **or** 6, 17% **also** 3, 93%. The lowest remarked conjunctions are: **thereby**, **despite** 0, 56%

Cerebral venous sinus thrombosis associated with thrombocytopenia post-vaccination for COVID-19 (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Introduction	And	17	Extending additive positive
Discussion	And	2	Extending additive positive
	Also	1	Extending additive positive

The number of conjunctions used in this article is (20) distributed as shown in percentage for each remarked conjunction: **and** 95% **also** 5%.

Salivary extracellular vesicles inhibit Zika virus but not SARS-CoV-2 infection

(2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	But	2	Extending adversative
	Also	1	Extending additive positive
	Thus	1	Elaborating clarifying exemplifying
	And	4	Extending additive positive
	Instead	1	Extending varying replacive
	Or	1	Extending varying alternative
Introduction	And	10	Extending additive positive
	Or	3	Extending varying alternative
	Nor	1	Extending additive negative
	Thus	1	Elaborating clarifying exemplifying
	Especially	1	Elaborating clarifying particularizing
	Even	1	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	In addition	1	Extending additive positive
	Here	1	Enhancing matter positive
Materials and methods	And	12	Extending additive positive
	Or	1	Extending varying alternative
	Then	2	Enhancing conditional positive
Quantitative real-time PCR(qRT-PCR)	Next	1	Enhancing simple following
	And	68	Extending additive positive
	Then	9	Enhancing conditional positive
	Or	9	Extending varying alternative
	Briefly	3	Elaborating clarifying summative
Results	For this purpose	1	Enhancing causal specific
	Next	3	Enhancing simple following
	And	71	Extending additive positive
	Also	5	Extending additive positive
	Or	15	Extending varying alternative
	Next	6	Enhancing simple following
	Thus	7	Elaborating clarifying exemplifying

	Two days later	1	Enhancing complex specific
	Therefore	3	Enhancing causal general
	However	4	Extending adversative
	If	3	Enhancing conditional positive
	Even	2	Enhancing conditional concessive
	Moreover	2	Extending additive positive
	Then	1	Enhancing conditional positive
	But	9	Extending adversative
	For	1	Enhancing causal general
	Lastly	1	Enhancing simple conclusive
	Nor	1	Extending additive negative
	Though	1	Enhancing conditional concessive
	Indeed	1	Elaborating clarifying verifigative
	Otherwise	1	Enhancing conditional negative
	In conclusion	1	Elaborating clarifying summative
	Here	1	Enhancing matter positive
Discussion	Or	11	Extending varying alternative
	And	48	Extending additive positive
	Moreover	1	Extending additive positive
	But	11	Extending adversative
	Also	5	Extending additive positive
	However	7	Extending adversative
	Thus	2	Elaborating clarifying exemplifying
	Nor	1	Extending additive negative
	Yet	1	Extending adversative
	In conclusion	1	Elaborating clarifying summative
	Despite	1	Enhancing conditional concessive

The number of conjunctions used in this article is (365) distributed as shown in percentage for each remarked conjunction: **and** 59, 83% **or** 10, 95% **but** 6, 02%.
The lowest recorded conjunctions are: **despite, yet, here, otherwise** 0, 27%

Stumbling on elusive cargo: how isomers challenge microRNA detection and quantification, the case of extracellular vesicles (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Introduction	And	14	Extending additive positive
	Even	2	Enhancing conditional concessive
	Or	5	Extending varying alternative
	Furthermore	1	Extending additive positive
	Because of	3	Enhancing causal general
	Yet	2	Extending adversative
	But	2	Extending adversative
	However	1	Extending adversative
	Thus	1	Elaborating clarifying exemplifying
	Then	1	Enhancing conditional positive
	Therefore	1	Enhancing causal general
	Especially	1	Elaborating clarifying particularizing
Variations on the theme of microRNA and detection	And	15	Extending additive positive
	On the contrary	1	Extending varying replacive
	Hence	1	Enhancing causal general
	Even	1	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	For example	1	Elaborating clarifying exemplifying
	For this reason	1	Enhancing causal specific
	Therefore	1	Enhancing causal general
	Because	1	Enhancing causal general
	First	1	Enhancing simple following
	But	2	Extending adversative
	Also	1	Extending additive positive
	Finally	1	Enhancing simple conclusive
	Or	1	Extending varying alternative
	A microRNA name is not composed of on molecular entity only	And	12
Therefore		1	Enhancing causal general
Or		3	Extending varying alternative
But		2	Extending adversative

The abundance of isomiRs might bias the bulk detection of microRNAs	Also	3	Extending additive positive
	And	17	Extending additive positive
	Also	2	Extending additive positive
	Or	5	Extending varying alternative
	But	3	Extending adversative
	If	4	Enhancing conditional positive
	However	2	Extending adversative
	Because of	1	Enhancing causal general
	For example	2	Elaborating clarifying exemplifying
	Because	1	Enhancing causal general
	Even	2	Enhancing conditional concessive
	Therefore	2	Enhancing causal general
	Despite	1	Enhancing conditional concessive
	So	1	Enhancing causal general
Why isomiRs matter in EV_ enriched sample?	In other words	1	Elaborating appositive expository
	For example	1	Elaborating clarifying exemplifying
	So	1	Enhancing causal general
	But	3	Extending adversative
	And	2	Extending additive positive
	Despite	1	Enhancing conditional concessive
	However	1	Extending adversative
	Or	2	Extending varying alternative
	Also	1	Extending additive positive
	But	2	Extending adversative
A strategy followed when stumbling on elusive cargo?	First	1	Enhancing simple following
	Or	6	Extending varying alternative
	Second	1	Enhancing simple following
	Also	2	Extending additive positive
	And	8	Extending additive positive
	Here	1	Enhancing matter positive
	Hence	1	Enhancing causal general
	However	2	Extending adversative
	If	1	Enhancing conditional positive
	Yet	1	Extending adversative

Concluding remarks and future directions	But	6	Extending adversative
	And	14	Extending additive positive
	However	3	Extending adversative
	Because	2	Enhancing causal general
	For example	2	Elaborating clarifying exemplifying
	Or	3	Extending varying alternative
	Even	2	Enhancing conditional concessive
	Hence	1	Enhancing causal general
	Instead	1	Extending varying replacive
	Also	3	Extending additive positive
	Yet	2	Extending adversative
	If	1	Enhancing conditional positive
	Then	1	Enhancing conditional positive
	Because of	1	Enhancing causal general
	Therefore	1	Enhancing causal general
	In addition	1	Extending additive positive

The number of conjunctions used in this article is (210) distributed as shown in percentage for each remarked conjunction: **and** 39, 04% **or** 11, 90% **also** 5, 71%. The lowest recorded conjunctions are: **instead, in other words, on the contrary** 0, 47%

Increased small extracellular vesicle secretion after chemotherapy via up-regulation of cholesterol metabolism in acute myeloid leukemia (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	4	Extending additive positive
	At the time	1	Enhancing complex durative
	Or	2	Extending varying alternative
	Also	1	Extending additive positive
	For	1	Enhancing causal general
Introduction	And	13	Extending additive positive
	Or	3	Extending varying alternative

Results	But	3	Extending adversative
	Even	1	Enhancing conditional concessive
	Also	2	Extending additive positive
	In addition	2	Extending additive positive
	For example	1	Elaborating clarifying exemplifying
	And	32	Extending additive positive
	Then	7	Enhancing conditional positive
	Or	5	Extending varying alternative
	Briefly	2	Elaborating clarifying summative
	Next	1	Enhancing simple following
Discussion	Because	1	Enhancing causal general
	And	41	Extending additive positive
	However	3	Extending adversative
	Or	6	Extending varying alternative
	Also	7	Extending additive positive
	Because	1	Enhancing causal general
	In addition	3	Extending additive positive
	Furthermore	2	Extending additive positive
	Especially	1	Elaborating clarifying particularizing
	Here	1	Enhancing matter positive
	Thus	1	Elaborating clarifying exemplifying
	Consequently	1	Enhancing causal general
	For example	3	Elaborating clarifying exemplifying
	On the other hand	1	Extending adversative
	At the time	1	Enhancing complex durative
Therefore	1	Enhancing causal general	
So	1	Enhancing causal general	

The number of conjunctions used in this article is (156) distributed as shown in percentage for each remarked conjunction: **and** 57, 69% **or** 10, 25% **also** 6, 41%.
The lowest pointed conjunctions: **on the other hand**, **consequently**, **so** 0, 64%

Items of the conjunctions	Conjunctions	Number conjunctions	of Meanings of conjunctions	
Abstract	And	14	Extending additive positive	
	But	1	Extending adversative	
	Thus	1	Elaborating clarifying exemplifying	
	Also	1	Extending additive positive	
Introduction	And	25	Extending additive positive	
	Even	1	Enhancing conditional concessive	
	But	1	Extending adversative	
	In addition	1	Extending additive positive	
	Or	1	Extending varying alternative	
	Also	3	Extending additive positive	
	Especially	2	Elaborating clarifying particularizing	
	Because of	1	Enhancing causal general	
	Therefore	1	Enhancing causal general	
	Yet	1	Extending adversative	
	Because	2	Enhancing causal general	
	Thus	1	Elaborating clarifying exemplifying	
	Furthermore	1	Extending additive positive	
	Methods	And	71	Extending additive positive
		Briefly	4	Elaborating clarifying summative
Then		6	Enhancing conditional positive	
At least		1	Elaborating clarifying corrective	
Finally		1	Enhancing simple conclusive	
Or		6	Extending varying alternative	
For		1	Enhancing causal general	
However		1	Extending adversative	
Results	Therefore	2	Enhancing causal general	
	Moreover	1	Extending additive positive	
	Next	1	Enhancing simple following	
	Meanwhile	2	Enhancing complex durative	
	Also	2	Extending additive positive	

Discussion	In addition	1	Extending additive positive
	But	1	Extending adversative
	And	18	Extending additive positive
	Especially	1	Elaborating clarifying particularizing
	Instead	1	Extending varying alternative
	Also	2	Extending additive positive
	But	1	Extending adversative
	Thus	1	Elaborating clarifying exemplifying

The number of conjunctions used in this article is (193) distributed as shown in percentage for each remarked conjunction: **and** 71, 50% **also** 4, 14% **or** 3, 62%. the lowest recorded conjunctions: **in addition, yet, instead** 0, 51%

Experimental artefacts can lead to misattribution of bioactivity from soluble mesenchyme stem cell paracrine factors to extracellular vesicles (2020)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions	
abstract	And	7	Extending additive positive	
	However	1	Extending adversative	
	Or	1	Extending varying alternative	
	Here	1	Enhancing matter positive	
	Also	1	Extending additive positive	
	Introduction	For	1	Enhancing causal general
		Or	4	Extending varying alternative
		And	26	Extending additive positive
		In particular	1	Elaborating clarifying particularizing
		However	3	Extending adversative
		Then	2	Enhancing conditional concessive
		Also	4	Extending additive positive
		In addition	1	Extending additive positive
		If	1	Enhancing conditional positive
Here	1	Enhancing matter positive		
But	1	Extending adversative		

Materials methods	At least	1	Elaborating clarifying corrective
	and	46	Extending additive positive
	Then	4	Enhancing conditional positive
	Or	7	Extending varying alternative
Results	Next	1	Enhancing simple following
	And	49	Extending additive positive
	Or	13	Extending varying alternative
	But	10	Extending adversative
	Next	1	Enhancing simple following
	However	9	Extending adversative
	Also	4	Extending additive positive
Discussion	Therefore	3	Enhancing causal general
	Consequently	1	Enhancing causal general
	If	1	Enhancing conditional positive
	Here	1	Enhancing matter positive
	And	12	Extending additive positive
	Or	5	Extending varying alternative
	However	2	Extending adversative
	Nor	1	Extending additive negative
	Also	1	Extending additive positive
	Conclusion	But	1
And		7	Extending additive positive

The number of conjunctions used in this article is (216) distributed as shown in percentage for each remarked conjunction: **and** 68, 05% **or** 13, 88% **however** 6, 94%. The lowest pointed conjunctions are: **in particular, in addition, consequently** 0, 46%

Patient-led decision making: Measuring autonomy and respect in Canadian maternity care
(2019)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	6	Extending additive positive

	Or	1	Extending varying alternative	
	If	1	Enhancing conditional positive	
Introduction	And	31	Extending additive positive	
	Or	5	Extending varying alternative	
	That is	1	Elaborating appositive expository	
	On the other hand	1	Extending adversative	
	In particular	1	Elaborating clarifying particularizing	
Results	Hence	1	Enhancing causal general	
	And	68	Extending additive positive	
	However	1	Extending adversative	
	Or	25	Extending varying alternative	
	Then	2	Enhancing conditional positive	
	In addition	1	Extending additive positive	
	If	2	Enhancing conditional positive	
	Also	5	Extending additive positive	
	But	3	Extending adversative	
	Because	5	Enhancing causal general	
	Because of	2	Enhancing causal general	
	Finally	1	Enhancing simple conclusive	
	Discussion	If	1	Enhancing conditional positive
		And	53	Extending additive positive
		Or	9	Extending varying alternative
However		6	Extending adversative	
Similarly		1	Enhancing manner comparative	
Even		3	Enhancing conditional concessive	
Also		3	Extending additive positive	
For example		1	Elaborating clarifying exemplifying	
Actually		1	Elaborating clarifying verificative	
First		1	Enhancing simple following	
Conclusion	For	1	Enhancing causal general	
	And	2	Extending additive positive	

The number of conjunctions used in this article is (145) distributed as shown in percentage for each remarked conjunction: **and** 62, 74% **or** 10, 98% **also** 3,

13%. The lowest registered rate of conjunctions are: **hence, in particular, actually** 0, 68%

Motivational interviewing training for physiotherapy and occupational therapy students: Effect on confidence, knowledge, and skills (2019)

Items of the article	the Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And		Extending additive positive
	Or		Extending varying alternative
Introduction	And		Extending additive positive
	Despite		Enhancing conditional concessive
	For		Enhancing causal general
	Or		Extending varying alternative
	Consequently		Enhancing causal general
Methods	And		Extending additive positive
	Or		Extending varying alternative
Materials	And		Extending additive positive
	For		Enhancing causal general
	Or		Extending varying alternative
	Finally		Enhancing simple conclusive
Results	If		Enhancing conditional positive
	And	9	Extending additive positive
	Or	2	Extending varying alternative
Discussion	And	30	Extending additive positive
	Furthermore	2	Extending additive positive
	However	1	Extending adversative
	If	3	Enhancing conditional positive
	Or	6	Extending varying alternative
Conclusion	But	1	Extending adversative
	Similarly	1	Enhancing manner comparative
	Finally	1	Enhancing simple conclusive
	And	4	Extending additive positive

The number of conjunctions used in this article is (134) distributed as shown in percentage for each remarked conjunction: **and** 79, 10% **or** 9, 70% **if** 2, 98%. the lowest remarked conjunctions are: **similarly**, **finally** 74%

The elicitation and management of multiple health concerns in GP consultations (2019)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	4	Extending additive positive
	If	1	Enhancing conditional positive
	However	1	Extending adversative
	But	1	Extending adversative
Introduction	And	39	Extending additive positive
	If	2	Enhancing conditional positive
	However	3	Extending adversative
	Or	5	Extending varying alternative
	Thus	1	Elaborating clarifying exemplifying
	Therefore	1	Enhancing causal general
	So	1	Enhancing causal general
	For example	1	Elaborating clarifying exemplifying
	But	1	Extending adversative
Methods	And	39	Extending additive positive
	Or	14	Extending varying alternative
	If	2	Enhancing conditional positive
	For	1	Enhancing causal general
	Because	1	Enhancing causal general
	But	5	Extending adversative
	Then	1	Enhancing conditional positive
	Similarly	1	Enhancing manner comparative
	Indeed	1	Elaborating clarifying verificative
	For example	1	Elaborating clarifying exemplifying
Discussion and conclusion	And	25	Extending additive positive
	But	2	Extending adversative
	Or	7	Extending varying alternative
	Also	5	Extending additive positive

Because	1	Enhancing causal general
Therefore	2	Enhancing causal general
So	1	Enhancing causal general
If	1	Enhancing conditional positive
Hence	1	Enhancing causal general
In particular	1	Elaborating clarifying particularizing
For	1	Enhancing causal general
Likewise	1	Enhancing manner comparative

The number of conjunctions used in this article is (184) distributed as shown in percentage for each remarked conjunction: **and** 57, 60% **or** 14, 13% **also** 2, 71%. the lowest pointed conjunctions are: **in particular, likewise** 0, 54%

3) Physics

Heating triangle singularities in heavy-ion collisions (2021)

Items of article	the Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	First	1	Enhancing simple following
	Second	1	Enhancing simple following
	Or	1	Extending varying alternative
	Even	1	Enhancing conditional concessive
	Then	1	Enhancing conditional positive
Introduction	Thus	1	Elaborating clarifying exemplifying
	And	5	Extending additive positive
	Also	2	Extending additive positive
	But	1	Extending adversative
	Instead	1	Extending varying replacive
Formalism: triangle loop at finite T	For example	1	Elaborating clarifying exemplifying
	And	8	Extending additive positive
	But	2	Extending adversative
	So	1	Enhancing causal general
	Briefly	1	Elaborating clarifying summative

	Therefore	1	Enhancing causal general
	Or	1	Extending varying alternative
	Moreover	1	Extending additive positive
	First	1	Enhancing simple following
	Then	1	Enhancing conditional positive
	Also	1	Extending additive positive
	Thus	1	Elaborating clarifying exemplifying
Numerical computations	And	26	Extending additive positive
	Because	7	Enhancing causal general
	Or	4	Extending varying alternative
	Also	3	Extending additive positive
	In any case	1	Elaborating clarifying dismissive
	Instead	1	Extending varying replacive
	Even	4	Enhancing conditional concessive
	If	2	Enhancing conditional positive
	Next	1	Enhancing simple following
	But	3	Extending adversative
	In fact	1	Elaborating clarifying verificative
	Then	1	Enhancing conditional positive
	So	2	Enhancing causal general
	Now	1	Enhancing simple simultaneous
	For example	1	Elaborating clarifying exemplifying
	That is	1	Elaborating appositive expository
Flight time of the intermediate state	Because of	1	Enhancing causal general
	If	1	Enhancing conditional positive
	Or	1	Extending varying alternative
	At least	1	Elaborating clarifying exemplifying
	Here	1	Enhancing matter positive
	Thus	1	Elaborating clarifying exemplifying
	And	7	Extending additive positive
	That is	1	Elaborating appositive expository
	Therefore	1	Enhancing causal general
	Instead	1	Extending varying replacive
	Similarly	1	Enhancing manner comparative

Discussion	And	6	Extending additive positive
	If	3	Enhancing conditional positive
	In fact	1	Elaborating clarifying verificative
	Or	4	Extending varying alternative
	Indeed	1	Elaborating clarifying verificative
	For example	2	Elaborating clarifying exemplifying
	Then	1	Enhancing conditional positive
	Instead	1	Extending varying replacive
	However	1	Extending adversative
	Also	1	Extending additive positive

The number of conjunctions used in this article is (132) distributed as shown in percentage for each remarked conjunction: **and** 39, 39% **or** 8, 33% **also** 5, 30%. the lowest recorded conjunctions are: **first, second, indeed** 0, 75%

Analytic non-Abelian gravitating solitons in the Einstein–Yang–Mills–Higgs theory and transitions between them (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	6	Extending additive positive
	However	1	Extending adversative
Introduction	And	32	Extending additive positive
	Consequently	3	Enhancing causal general
	However	3	Extending adversative
	Also	4	Extending additive positive
	For instance	2	Elaborating clarifying exemplifying
	If	1	Enhancing conditional positive
	Nevertheless	1	Enhancing conditional concessive
	In particular	1	Elaborating clarifying particularizing
	On the other han	1	Extending adversative
	Thus	2	Elaborating clarifying exemplifying
	But	2	Extending adversative
	Indeed	1	Elaborating clarifying verificative
Moreover	1	Extending additive positive	

Type family: slandered moronic configuration	1	Briefly	1	Elaborating clarifying summative		
		If	2	Enhancing conditional positive		
		In this case	1	Enhancing conditional positive		
		And	4	Extending additive positive		
		Or	1	Extending varying alternative		
		And	57	Extending additive positive		
		Instead	1	Extending varying replacive		
		In this case	4	Enhancing conditional positive		
		Analytic solution of type 2	of	For instance	1	Elaborating clarifying exemplifying
				So	1	Enhancing causal general
Especially	1			Elaborating clarifying particularizing		
On the other hand	1			Extending adversative		
Then	3			Enhancing conditional positive		
Or	1			Extending varying alternative		
Also	2			Extending additive positive		
Hence	2			Enhancing causal general		
Thus	1			Elaborating clarifying exemplifying		
Here	1			Enhancing matter positive		
A spin from is spin and 4DQHE		But	1	Extending adversative		
		In this case	3	Enhancing conditional positive		
		And	13	Extending additive positive		
		Hence	1	Enhancing causal general		
		But	1	Extending adversative		
		Because of	1	Enhancing causal general		
		In other words	1	Elaborating appositive expository		
		Indeed	1	Elaborating clarifying verificative		
		Here	1	Enhancing matter positive		
		Now	1	Enhancing simple simultaneous		
Instead	1	Extending varying replacive				
In particular	2	Elaborating clarifying particularizing				
On the other hand	1	Extending adversative				
Consequently	1	Enhancing causal general				
Therefore	1	Enhancing causal general				

The number of conjunctions used in this article is (186) distributed as shown in percentage for each remarked conjunction: **and** 45, 69% **also** 3, 22% **in this case, consequently, however** 2, 15%. the lowest recorded conjunctions are: **instead, on the other hand, consequently** 0, 53%

Tetraquark state X (6900) and the interaction between diquark and antidiquark (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of the conjunctions
Abstract	And	5	Extending additive positive
	Then	1	Enhancing conditional positive
	Also	1	Extending additive positive
Introduction	And	56	Extending additive positive
	However	3	Extending adversative
	Or	4	Extending varying alternative
	Because	1	Enhancing causal general
	In fact	1	Elaborating clarifying verificative
	If	2	Enhancing conditional positive
	But	3	Extending adversative
	Therefore	2	Enhancing causal general
	So	4	Enhancing causal general
	Later	2	Enhancing simple following
	Here	1	Enhancing matter positive
	Then	2	Enhancing conditional positive
	Also	2	Extending additive positive
	Similarly	1	Enhancing manner comparative
	Numerical results	And	15
Then		2	Enhancing conditional positive
So		3	Enhancing causal general
First		1	Enhancing simple following
At last		1	Enhancing simple conclusive
Also		6	Extending additive positive
Here		1	Enhancing matter positive
In fact		1	Elaborating clarifying verificative
Or		1	Extending varying alternative

Summary and discussion	For example	1	Elaborating clarifying exemplifying
	If	1	Enhancing conditional positive
	And	9	Extending additive positive
	Instead	1	Extending varying replacive
	Then	1	Enhancing conditional positive
	So	1	Enhancing causal general
	In fact	1	Elaborating clarifying verificative
	Also	2	Extending additive positive
	Or	1	Extending varying alternative
	However	1	Extending adversative
	If	1	Enhancing conditional positive

The number of conjunctions used in this article is (142) distributed as shown in percentage for each remarked conjunction: **and** 59, 85% **also** 7, 74% **so** 5, 63%. The lowest pointed conjunctions are: **in fact**, **instead** 0, 70%

Automated determination of hybrid particle-field parameters by machine learning
(2020)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	3	Extending additive positive
	Moreover	1	Extending additive positive
	Therefore	1	Enhancing causal general
Introduction	And	22	Extending additive positive
	For	1	Enhancing causal general
	Despite	1	Enhancing conditional concessive
	In particular	1	Elaborating clarifying particularizing
	For example	4	Elaborating clarifying exemplifying
	However	1	Extending adversative
	Or	7	Extending varying alternative
	Especially	2	Elaborating clarifying particularizing
	At least	1	Elaborating clarifying corrective
	Even	1	Enhancing conditional concessive

	Though	1	Enhancing conditional concessive
	In these cases	1	Enhancing conditional positive
	For this reason	1	Enhancing causal specific
	Therefore	2	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	But	1	Extending adversative
	First	1	Enhancing simple following
	Second	1	Enhancing simple following
	Thereby	1	Enhancing manner means
	Finally	1	Enhancing simple conclusive
	Thus	1	Elaborating clarifying exemplifying
	In addition	1	Extending additive positive
Materials and methods	Or	6	Extending varying alternative
	And	20	Extending additive positive
	However	3	Extending adversative
	Next	1	Enhancing simple following
	Finally	1	Enhancing simple conclusive
	For	2	Enhancing causal general
	Also	1	Extending additive positive
Results and discussion	In addition	2	Extending additive positive
	And	31	Extending additive positive
	Or	1	Extending varying alternative
	In particular	3	Elaborating clarifying particularizing
	In fact	1	Elaborating clarifying verificative
	Even	2	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	Indeed	1	Elaborating clarifying verificative
	Therefore	1	Enhancing causal general
	On the contrary	1	Extending varying replacive
	Thus	1	Elaborating clarifying exemplifying
	For	1	Enhancing causal general
	Also	1	Extending additive positive
	However	1	Extending adversative
	Moreover	1	Extending additive positive

Concluding remarks	Or	5	Extending varying alternative
	For example	4	Elaborating clarifying exemplifying
	And	6	Extending additive positive
	Also	1	Extending additive positive
	Despite	1	Enhancing conditional concessive
	Here	1	Enhancing matter positive
	First	1	Enhancing simple following
	Second	1	Enhancing simple following
	Thus	1	Elaborating clarifying exemplifying
	Finally	1	Enhancing simple conclusive
	Even	2	Enhancing conditional concessive
	In this respect	1	Enhancing matter positive
	Similarly	1	Enhancing manner comparative
	Though	1	Enhancing conditional concessive
	In conclusion	1	Elaborating clarifying summative

The number of conjunctions used in this article is (171) distributed as shown in percentage for each remarked conjunction: **and** 47, 95% **or** 11, 11% **for example** 4, 67%. The lowest recorded conjunctions are: **in this respect, in conclusion** 0, 58%

Guaranteed convergence for a class of coupled Cluster methods based on Arponen's extended theory (2020)

Items of the article	Conjunctions	Number conjunctions	Meanings of conjunctions
Abstract	And	3	Extending additive positive
	Also	1	Extending additive positive
Introduction	Especially	1	Elaborating clarifying particularizing
	And	28	Extending additive positive
	Thus	2	Elaborating clarifying exemplifying
	Moreover	1	Extending additive positive
	But	1	Extending adversative
	However	1	Extending adversative

	Even	5	Enhancing conditional concessive
	On the other hand	2	Extending adversative
	To illustrate	1	Elaborating clarifying exemplifying
	Also	2	Extending additive positive
	If	2	Enhancing conditional positive
	Furthermore	1	Extending additive positive
	In fact	1	Elaborating clarifying verificative
	Next	1	Enhancing simple following
	Or	1	Extending varying alternative
	And	45	Extending additive positive
The non-canonical extended coupled-cluster model	Therefore	4	Enhancing causal general
	However	2	Extending adversative
	Moreover	2	Extending additive positive
	If	8	Enhancing conditional positive
	Or	3	Extending varying alternative
	Then	3	Enhancing conditional positive
	Also	4	Extending additive positive
	Finally	1	Enhancing simple conclusive
	In this case	1	Enhancing conditional positive
	Instead	1	Extending varying replacive
	Here	1	Enhancing matter positive
	Consequently	1	Enhancing causal general
	Even	1	Enhancing conditional concessive
	Furthermore	1	Extending additive positive
	In particular	1	Elaborating clarifying particularizing
On the other hand	2	Extending adversative	
But	1	Extending adversative	
Actually	1	Elaborating clarifying verificative	
In addition	3	Extending additive positive	
Monotonicity-preserving coordinate transformations	Also	5	Extending additive positive
	And	33	Extending additive positive
	Therefore	2	Enhancing causal general
	Thus	3	Elaborating clarifying exemplifying
	Or	2	Extending varying alternative

	Similarly	2	Enhancing manner comparative
	That is	1	Elaborating appositive expository
	Then	4	Enhancing conditional positive
	In fact	2	Elaborating clarifying verificative
	If	8	Enhancing conditional positive
	Hence	1	Enhancing causal general
	Here	1	Enhancing matter positive
	However	1	Extending adversative
	For example	1	Elaborating clarifying exemplifying
	At least	1	Elaborating clarifying corrective
	In this case	1	Enhancing conditional positive
	Moreover	1	Extending additive positive
Numerical results	And	2	Extending additive positive
	Thus	1	Elaborating clarifying exemplifying
	Here	2	Enhancing matter positive
	If	2	Enhancing conditional positive
	However	2	Extending adversative
	For instance	1	Elaborating clarifying exemplifying
	Therefore	1	Enhancing causal general
	Because	1	Enhancing causal general
	Even	2	Enhancing conditional concessive
	But	1	Extending adversative
	In particular	1	Elaborating clarifying particularizing
	And	10	Extending additive positive
	Also	3	Extending additive positive
	However	1	Extending adversative
	Finally	1	Enhancing simple conclusive
	Or	2	Extending varying alternative
	Moreover	1	Extending additive positive
	Thus	1	Elaborating clarifying exemplifying

The number of conjunctions used in this article is (265) distributed as shown in percentage for each remarked conjunction: **and** 45, 66% **if** 7, 54% **also** 5, 66%.
The lowest conjunctions are: **in particular**, **finally** 0, 37%

Insight from energy decomposition analysis on a hydrogen-bond-mediated mechanism for on-water catalysis (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	3	Extending additive positive
	Also	1	Extending additive positive
	Therefore	1	Enhancing causal general
	Nevertheless	1	Enhancing conditional concessive
Introduction	And	34	Extending additive positive
	Firstly	1	Enhancing simple following
	Secondly	1	Enhancing simple following
	Thirdly	1	Enhancing simple following
	On the other hand	1	Extending adversative
	Or	3	Extending varying alternative
	Nevertheless	1	Enhancing conditional concessive
	Also	3	Extending additive positive
	In particular	1	Elaborating clarifying particularizing
	Actually	1	Elaborating clarifying verificative
	Thus	1	Elaborating clarifying exemplifying
Computational methods	And	16	Extending additive positive
	Briefly	1	Elaborating clarifying summative
	Then	2	Enhancing conditional positive
	In addition	2	Extending additive positive
	Similarly	1	Enhancing manner comparative
	Finally	1	Enhancing simple conclusive
	Also	1	Extending additive positive
Results	And	8	Extending additive positive
	Hence	1	Enhancing causal general
	Also	1	Extending additive positive
	Similarly	1	Enhancing manner comparative
	But	1	Extending adversative
Discussion	And	17	Extending additive positive
	Therefore	2	Enhancing causal general
	However	2	Extending adversative

	Also	1	Extending additive positive
	Nevertheless	1	Enhancing conditional concessive
	Consequently	1	Enhancing causal general
	Then	1	Enhancing conditional positive
	In addition	1	Extending additive positive
	Hence	1	Enhancing causal general
Conclusion	And	10	Extending additive positive
	Nevertheless	1	Enhancing conditional concessive
	Or	1	Extending varying alternative
	Even	1	Enhancing conditional concessive
	Also	1	Extending additive positive

The number of conjunctions used in this article is (131) distributed as shown in percentage for each remarked conjunction: **and** 67, 17 % **or, nevertheless** 3, 05% **also** 6, 10%. The lowest recorded conjunctions are: **In particular, actually** 0, 76%

The spectrum of the atomic orbital overlap matrix and the locality of the virtual electronic density matrix (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	However	1	Extending adversative
	Also	2	Extending additive positive
	And	5	Extending additive positive
	But	1	Extending adversative
	Even	1	Enhancing conditional concessive
	For	1	Enhancing causal general
	Here	1	Enhancing matter positive
Introduction	And	36	Extending additive positive
	Especially	1	orating clarifying particularizing
	Or	2	Extending varying alternative
	If	5	Enhancing conditional positive
	However	5	Extending adversative
	In particular	1	orating clarifying particularizing

	Hence	3	Enhancing causal general
	Therefore	1	Enhancing causal general
	Also	2	Extending additive positive
	But	4	Extending adversative
	Thus	2	Elaborating clarifying exemplifying
	Even	1	Enhancing conditional concessive
	In addition	1	Extending additive positive
	Despite	1	Enhancing conditional concessive
	And	45	Extending additive positive
Theory	Then	1	Enhancing conditional positive
	But	6	Extending adversative
	Even	2	Enhancing conditional concessive
	Or	7	Extending varying alternative
	Hence	5	Enhancing causal general
	Also	2	Extending additive positive
	However	6	Extending adversative
	Therefore	5	Enhancing causal general
	If	1	Enhancing conditional positive
	Thus	4	Elaborating clarifying exemplifying
	Here	2	Enhancing matter positive
	In addition	1	Extending additive positive
	Especially	1	Elaborating clarifying particularizing
Summary concluding remarks	And	4	Extending additive positive
	But	2	Extending adversative
	Even	1	Enhancing conditional concessive
	However	1	Extending adversative
	Also	1	Extending additive positive

The number of conjunctions used in this article is (175) distributed as shown in percentage for each remarked conjunction: **and** 52, 32% **but, however** 15, 11% **hence** 4, 65%. the lowest resisted conjunctions are: **in particular, despite** 0, 57%

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	8	Extending additive positive
	For this purpose	1	Enhancing causal specific
Introduction	Or	7	Extending varying alternative
	And	27	Extending additive positive
	Then	2	Enhancing conditional positive
	Also	3	Extending additive positive
	For example	1	Elaborating clarifying exemplifying
	If	1	Enhancing conditional positive
	Yet	1	Extending adversative
	Nevertheless	1	Enhancing conditional concessive
	However	1	Extending adversative
	Computational details	And	17
Furthermore		1	Extending additive positive
For example		1	Elaborating clarifying exemplifying
Or		4	Extending varying alternative
Therefore		1	Enhancing causal general
Also		2	Extending additive positive
Finally		1	Enhancing simple conclusive
However		1	Extending adversative
Results and discussion	However	9	Extending adversative
	And	75	Extending additive positive
	Also	10	Extending additive positive
	In addition	2	Extending additive positive
	Here	1	Enhancing matter positive
	In fact	1	Elaborating clarifying verificative
	But	2	Extending adversative
	Or	8	Extending varying alternative
	Similarly	2	Enhancing manner comparative
	Finally	1	Enhancing simple conclusive
	For example	1	Elaborating clarifying exemplifying
	Therefore	2	Enhancing causal general

Conclusion	Hence	1	Enhancing causal general
	For	1	Enhancing causal general
	Because of	1	Enhancing causal general
	And	9	Extending additive positive
	For this purpose	1	Enhancing causal specific
	Also	2	Extending additive positive
	Thus	1	Elaborating clarifying exemplifying

The number of conjunctions used in this article is (211) distributed as shown in percentage for each remarked conjunction: **and** 64, 45 % **or** 9% **also** 8, 05%. The lowest recorded conjunctions are: **yet, nevertheless, finally** 0,47%

Quantum Photonic Interface for Tin-Vacancy Centers in Diamond (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of the conjunctions
Abstract	And	3	Extending additive positive
	Because	1	Enhancing causal general
	However	1	Extending adversative
	Here	1	Enhancing matter positive
Introduction	And	7	Extending additive positive
	Therefore	1	Enhancing causal general
	Or	1	Extending varying alternative
	But	1	Extending adversative
	Because of	2	Enhancing causal general
	Despite	1	Enhancing conditional concessive
	Furthermore	1	Extending additive positive
Results	And	27	Extending additive positive
	Next	2	Enhancing simple following
	First	1	Enhancing simple following
	Then	3	Enhancing conditional positive
	Also	2	Extending additive positive
	Here	2	Enhancing matter positive
	And	15	Extending additive positive

Conclusion	As a result	1	Enhancing causal specific
	Here	1	Enhancing matter positive
	First	1	Enhancing simple following
	Thus	1	Elaborating clarifying exemplifying
	Or	1	Extending varying alternative

The number of conjunctions used in this article is (77) distributed as shown in percentage for each remarked conjunction: **and** 67, 53% **here** 5, 19% **or, because of, first, next** 10, 38%. The lowest recorded conjunctions are: **despite, furthermore** 1, 29%

Table 53: *Probing thermal fluctuations through scalar test particles (2021)*

Items of the article	Conjunctions	Number of conjunctions	Meanings of the conjunctions
Abstract	Here	1	Enhancing matter positive
	And	2	Extending additive positive
	Also	2	Extending additive positive
	Furthermore	1	Extending additive positive
	However	1	Extending adversative
	Or	1	Extending varying alternative
	Even	2	Enhancing conditional concessive
Introduction	Also	3	Extending additive positive
	And	9	Extending additive positive
	However	2	Extending adversative
	There	1	Enhancing matter positive
	Nevertheless	1	Enhancing conditional concessive
	Then	2	Enhancing conditional positive
	In particular	1	Elaborating clarifying particularizing
	For instance	1	Elaborating clarifying exemplifying
	Later	1	Enhancing simple following
	Hence	1	Enhancing causal general
	But	1	Extending adversative
	Therefore	1	Enhancing causal general
	So	1	Enhancing causal general

Quantum aspects of the background field	Finally	1	Enhancing simple conclusive	
	And	7	Extending additive positive	
	Finally	1	Enhancing simple conclusive	
	Firstly	1	Enhancing simple following	
	In particular	1	Elaborating clarifying particularizing	
	Even	1	Enhancing conditional concessive	
	Secondly	1	Enhancing simple following	
	In fact	1	Elaborating clarifying verificative	
	Also	1	Extending additive positive	
The interesting model	Here	1	Enhancing matter positive	
	Thus	2	Elaborating clarifying exemplifying	
	And	16	Extending additive positive	
	Furthermore	1	Extending additive positive	
	However	2	Extending adversative	
	Indeed	1	Elaborating clarifying verificative	
	Even	1	Enhancing conditional concessive	
	Hence	2	Enhancing causal general	
	Moreover	1	Extending additive positive	
	In particular	1	Elaborating clarifying particularizing	
	If	1	Enhancing conditional positive	
	That is	1	Elaborating appositive expository	
	Nevertheless	1	Enhancing conditional concessive	
	Also	1	Extending additive positive	
	At last	1	Enhancing simple conclusive	
	Velocity dispersions included by the field fluctuation	Now	2	Enhancing simple simultaneous
		And	19	Extending additive positive
Or		2	Extending varying alternative	
Also		3	Extending additive positive	
Thus		2	Elaborating clarifying exemplifying	
Therefore		1	Enhancing causal general	
However		3	Extending adversative	
Hence		3	Enhancing causal general	
But		1	Extending adversative	

Late-time behavior of the velocity dispersions	On the other hand	1	Extending adversative
	So	1	Enhancing causal general
	If	1	Enhancing conditional positive
	And	6	Extending additive positive
	However	3	Extending adversative
	Or	2	Extending varying alternative
	On the other hand	1	Extending adversative
	Moreover	1	Extending additive positive
Distance behavior of the velocity dispersions	Hence	2	Enhancing causal general
	In addition	1	Extending additive positive
	Thus	2	Elaborating clarifying exemplifying
	And	8	Extending additive positive
	On the other hand	1	Extending adversative
	Now	1	Enhancing simple simultaneous
	Then	3	Enhancing conditional positive
	If	1	Enhancing conditional positive
	However	1	Extending adversative
	First	1	Enhancing simple following
Finally	1	Enhancing simple conclusive	

The number of conjunctions used in this article is (158) distributed as shown in percentage for each remarked conjunction: **and** 42, 40% **however** 7, 59% **also** 4, 43%. the lowest conjunctions recorded are: **nevertheless, in fact** 0, 63%

4) Mathematics

Detection of Outlying Cells in Contingency Tables Using Model-Based Diagnostics (2020)

Items of the article	the Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	2	Extending additive positive
	Then	1	Enhancing conditional positive
Introduction	And	10	Extending additive positive
	Or	2	Extending varying alternative

	Hence	1	Enhancing causal general
	Also	1	Extending additive positive
	If	1	Enhancing conditional positive
	However	1	Extending adversative
	Even	1	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	Thus	1	Elaborating clarifying exemplifying
	Firstly	1	Enhancing simple following
	Secondly	1	Enhancing simple following
Proposed methods	And	9	Extending additive positive
	Or	1	Extending varying alternative
	If	2	Enhancing conditional positive
	Thus	1	Elaborating clarifying exemplifying
Simulation study	However	1	Extending adversative
	And	23	Extending additive positive
	Here	1	Enhancing matter positive
	Also	3	Extending additive positive
	Even	2	Enhancing conditional concessive
	Finally	1	Enhancing simple conclusive
	Or	1	Extending varying alternative
	Indeed	1	Elaborating clarifying verificative
	For	1	Enhancing causal general
Data analysis	And	11	Extending additive positive
	If	1	Enhancing conditional positive
	Thus	2	Elaborating clarifying exemplifying
	Here	1	Enhancing matter positive
Conclusion	But	1	Extending adversative
	And	6	Extending additive positive
	Then	1	Enhancing conditional positive
	Moreover	1	Extending additive positive

The number of conjunctions used in this article is (95) distributed as shown in percentage for each remarked conjunction: **and** 64, 21% **or** 4, 21% **thus** 4, 21%. The lowest recorded conjunctions are: **hence, indeed, moreover** 1, 05%

Items of the Conjunctions	Number of conjunctions	Meanings of conjunctions	
Introduction	And	27	Extending additive positive
	If	13	Enhancing conditional positive
	Then	12	Enhancing conditional positive
	Firstly	1	Enhancing simple following
	On the other hand	1	Extending adversative
	But	1	Extending adversative
	Moreover	1	Extending additive positive
	At least	1	Elaborating clarifying exemplifying
	However	1	Extending adversative
	In other words	1	Elaborating appositive expository
Main results	Also	1	Extending additive positive
	And	17	Extending additive positive
	If	13	Enhancing conditional positive
	Then	10	Enhancing conditional positive
	Even	3	Enhancing conditional concessive
	Therefore	1	Enhancing causal general
	Next	1	Enhancing simple following
	Or	1	Extending varying alternative
Proof of main results	Otherwise	3	Enhancing conditional negative
	And	51	Extending additive positive
	Now	3	Enhancing simple simultaneous
	Then	21	Enhancing conditional positive
	Or	7	Extending varying alternative
	So	6	Enhancing causal general
	Hence	6	Enhancing causal general
	Thus	3	Elaborating clarifying exemplifying
	On the other hand	5	Extending adversative
	If	42	Enhancing conditional positive
	Even	2	Enhancing conditional positive
	Moreover	4	Extending additive positive

	In this case	1	Enhancing conditional positive
	Therefore	3	Enhancing causal general
	Furthermore	1	Extending additive positive
	Otherwise	4	Enhancing conditional negative
Further examples	And	7	Extending additive positive
	Also	1	Extending additive positive
	So	2	Enhancing causal general
	If	1	Enhancing conditional positive
	Then	1	Enhancing conditional positive
Conclusion	So	1	Enhancing causal general
	And	2	Extending additive positive
	But	1	Extending adversative

The number of conjunctions used in this article is (289) distributed as shown in percentage for each remarked conjunction: **and** 35, 98% **if** 23, 87% **then** 15, 22%. The lowest pointed conjunctions are: **at least**, **next** 0, 34%

Another two families of integer-valued polynomials associated with finite trigonometric sums
(2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Introduction	Or	1	Extending varying alternative
	If	1	Enhancing conditional positive
	For instance	2	Elaborating clarifying exemplifying
	And	21	Extending additive positive
	Also	3	Extending additive positive
	In addition	2	Extending additive positive
	However	1	Extending adversative
Statement of main results	And	18	Extending additive positive
	Then	2	Enhancing conditional positive
	Also	2	Extending additive positive
	However	1	Extending adversative
	Here	1	Enhancing matter positive

Proof of the results	And	35	Extending additive positive
	Then	4	Enhancing conditional positive
	Even	2	Enhancing conditional positive
	Instance	2	Elaborating clarifying exemplifying
	Next	2	Enhancing simple following
	Indeed	2	Elaborating clarifying verificative
	On the other hand	1	Extending adversative
	Also	1	Extending additive positive
	Now	1	Enhancing simple simultaneous
	Finally	2	Enhancing simple conclusive
	Hence	3	Enhancing causal general
	Likewise	1	Enhancing manner comparative
	Thus	1	Elaborating clarifying exemplifying
	Therefore	1	Enhancing causal general
	If	1	Enhancing conditional positive
	Moreover	1	Extending additive positive
	Concluding remarks	And	9
Or		1	Extending varying alternative
Likewise		1	Enhancing manner comparative
In addition		1	Extending additive positive
In conclusion		1	Elaborating clarifying exemplifying
Instead		1	Extending varying replacive

The number of conjunctions used in this article is (129) distributed as shown in percentage for each remarked conjunction: **and** 64, 34% **then, also** 4, 65% **in addition, hence** 2, 32%. The lowest recorded conjunctions are: **likewise, moreover, in conclusion** 0, 77%

Special Issue on “Graph Algorithms and Applications” (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	Or	2	Extending varying alternative
	And	12	Extending additive positive

Introduction Special issue	For instance	1	Elaborating clarifying exemplifying
	For	1	Enhancing causal general
	Therefore	1	Enhancing causal general
	Or	2	Extending varying alternative
	And	30	Extending additive positive
	In particular	3	Elaborating clarifying particularizing
	Even	1	Enhancing conditional concessive
	Or	1	Extending varying alternative
	Moreover	2	Extending additive positive
	For	1	Enhancing causal general
	Also	4	Extending additive positive
	That is	1	Elaborating appositive expository
	Finally	1	Enhancing simple conclusive
Actually	1	Elaborating clarifying verificative	

The number of conjunctions used in this article is (64) distributed as shown in percentage for each remarked conjunction: **and** 65, 62% **or** 7, 81% **also** 6, 25%. The lowest recorded conjunctions are: **Therefore, actually** 1,56%

A Set-Theoretic Approach to Modeling Network Structure (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	3	Extending additive positive
	However	1	Extending adversative
Introduction	And	7	Extending additive positive
	However	4	Extending adversative
	If	2	Enhancing conditional positive
	Otherwise	1	Enhancing conditional negative
	For example	1	Elaborating clarifying exemplifying
	First	2	Enhancing simple following
	Then	1	Enhancing conditional positive
	Finally	2	Enhancing simple conclusive
	Second	1	Enhancing simple following

The interior	And	24	Extending additive positive
	If	14	Enhancing conditional positive
	Then	10	Enhancing conditional positive
	Or	12	Extending varying alternative
	Finally	2	Enhancing simple conclusive
	For example	3	Elaborating clarifying exemplifying
	However	2	Extending adversative
	Because	3	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	Hence	1	Enhancing causal general
	Even	1	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	If not	1	Enhancing conditional negative
	Here	1	Enhancing matter positive
	Actually	1	Elaborating clarifying verificative
Network properties	And	30	Extending additive positive
	Here	3	Enhancing matter positive
	Or	8	Extending varying alternative
	Because	1	Enhancing causal general
	Also	5	Extending additive positive
	Especially	2	Elaborating clarifying particularizing
	If	11	Enhancing conditional positive
	Then	11	Enhancing conditional positive
	Though	1	Enhancing conditional concessive
	However	5	Extending adversative
	So	1	Enhancing causal general
	Thus	4	Elaborating clarifying exemplifying
	But	1	Extending adversative
	Even	1	Enhancing conditional concessive
	Otherwise	1	Enhancing conditional negative
	Hence	2	Enhancing causal general
	Similarly	1	Enhancing manner comparative
For instance	1	Elaborating clarifying exemplifying	
Because	1	Enhancing causal general	

		Consequently	1	Enhancing causal general
		If	2	Enhancing conditional positive
		Or	1	Extending varying alternative
		For example	1	Elaborating clarifying exemplifying
Network generation expansion	by	And	9	Extending additive positive
		However	2	Extending adversative
		Here	1	Enhancing matter positive
		Also	1	Extending additive positive
		That is	1	Elaborating appositive expository
		Then	1	Enhancing conditional positive
Observations		Thus	2	Elaborating clarifying exemplifying
		And	7	Extending additive positive
		However	5	Extending adversative
		Thus	1	Elaborating clarifying exemplifying
		In fact	1	Elaborating clarifying verificative
		Moreover	2	Extending additive positive
		But	1	Extending adversative
		Also	1	Extending additive positive

The number of conjunctions used in this article is (232) distributed as shown in percentage for each remarked conjunction: **and** 34, 48% **if** 12, 5% **then** 9, 48%. The lowest pointed conjunctions are: **consequently**, **though**, **otherwise** 0, 43%

Characterizing 2-Trees Relative to Chordal and Series-Parallel Graphs (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	8	Extending additive positive
	Also	2	Extending additive positive
	Indeed	1	Elaborating clarifying verificative
Introduction to the graph classes	And	12	Extending additive positive
	Then	1	Enhancing conditional positive
	For example	1	Elaborating clarifying exemplifying
	At least	1	Elaborating clarifying corrective

	Yet	1	Extending adversative	
	If	4	Enhancing conditional positive	
	Otherwise	1	Enhancing conditional negative	
	Instead	1	Extending varying replacive	
2-trees in relation to chordal graphs	If	17	Enhancing conditional positive	
	And	20	Extending additive positive	
	Or	1	Extending varying alternative	
	Thereby	1	Enhancing manner means	
	Thus	2	Elaborating clarifying exemplifying	
	Therefore	2	Enhancing causal general	
	At least	3	Elaborating clarifying corrective	
	First	1	Enhancing simple following	
	Also	2	Extending additive positive	
	Otherwise	1	Enhancing conditional negative	
	Then	1	Enhancing conditional positive	
	But	1	Extending adversative	
	Hence	1	Enhancing causal general	
	2-trees in relation to series-parallel graphs	If	22	Enhancing conditional positive
		And	54	Extending additive positive
		For example	1	Elaborating clarifying exemplifying
Thus		4	Elaborating clarifying exemplifying	
But		3	Extending adversative	
Instead		1	Extending varying replacive	
In fact		1	Elaborating clarifying verificative	
First		2	Enhancing simple following	
Yet		2	Extending adversative	
Because of		2	Enhancing causal general	
Then		2	Enhancing conditional positive	
In other words		2	Elaborating appositive expository	
What makes chordal and series-parallel special here?	And	12	Extending additive positive	
	Especially	1	Elaborating clarifying particularizing	
	For instance	1	Elaborating clarifying exemplifying	
	In fact	1	Elaborating clarifying verificative	
	If	1	Enhancing conditional positive	

First	1	Enhancing simple following
Thus	3	Elaborating clarifying exemplifying
So	2	Enhancing causal general
Also	1	Extending additive positive
But	1	Extending adversative
Then	1	Enhancing conditional positive
Similarly	1	Enhancing manner comparative
Or	1	Extending varying alternative
In other words	1	Elaborating appositive expository

The number of conjunctions used in this article is (208) distributed as shown in percentage for each remarked conjunction: **and** 50, 96% **if** 21, 15% **thus** 4, 32%. The lowest recorded conjunctions are: **indeed**, **thereby**, **similarly** 0, 48%

Nilpotent Graph (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	2	Extending additive positive
	And	31	Extending additive positive
Introduction	Here	1	Enhancing matter positive
	If	9	Enhancing conditional positive
	Also	1	Extending additive positive
	Then	2	Enhancing conditional positive
	That is	1	Elaborating appositive expository
	And	28	Extending additive positive
	If	15	Enhancing conditional positive
	Here	2	Enhancing matter positive
	Then	18	Enhancing conditional positive
	Hence	7	Enhancing causal general
	Otherwise	1	Enhancing conditional negative
	But	2	Extending adversative
	Similarly	5	Enhancing manner comparative
	Also	1	Extending additive positive

Nilpotent graphs	Even	1	Enhancing conditional concessive
	And	28	Extending additive positive
	If	15	Enhancing conditional positive
	Here	2	Enhancing matter positive
	Then	18	Enhancing conditional positive
	Hence	7	Enhancing causal general
	Otherwise	1	Enhancing conditional negative
	But	2	Extending adversative
	Similarly	5	Enhancing manner comparative
	Also	1	Extending additive positive
Girth	Even	1	Enhancing conditional concessive
	And	4	Extending additive positive
	If	4	Enhancing conditional positive
	But	1	Extending adversative
	Hence	4	Enhancing causal general
	Even	2	Enhancing conditional concessive
	Then	4	Enhancing conditional positive
	Also	1	Extending additive positive
	Otherwise	3	Enhancing conditional negative
	So	2	Enhancing causal general
Clique number	If	3	Enhancing conditional positive
	Then	3	Enhancing conditional positive
	Even	1	Enhancing conditional concessive
	Otherwise	1	Enhancing conditional negative
	Next	1	Enhancing simple following
	And	2	Extending additive positive
	Hence	1	Enhancing causal general
	And	28	Extending additive positive
	Also	1	Extending additive positive
	If	14	Enhancing conditional positive
Spectrum Laplacian spectrum and signless Laplacian spectrum	Then	15	Enhancing conditional positive
	Even	1	Enhancing conditional concessive
	Hence	7	Enhancing causal general
	Next	2	Enhancing simple following

Dominating number	Or	1	Extending varying alternative
	But	3	Extending adversative
	If	4	Enhancing conditional positive
	At least	1	Elaborating appositive expository
	And	2	Extending additive positive
	Then	3	Enhancing conditional positive
	Even	1	Enhancing conditional concessive
	Hence	1	Enhancing causal general
	Similarly	1	Enhancing manner comparative
Chromatic number	And	2	Extending additive positive
	Then	1	Enhancing conditional positive
	Therefore	1	Enhancing causal general
	But	1	Extending adversative
	Also	1	Extending additive positive
	Hence	1	Enhancing causal general

The number of conjunctions used in this article is (263) distributed as shown in percentage for each remarked conjunction: **and** 41, 44% **then** 17, 49% **if** 19, 39%. The lowest recorded conjunctions are: **that is, at least** 0, 38%

The Integer-antimagic Spectra of Graphs with a Chord (2021)

Items of the article	of the Conjunctions	Number conjunction	of Meanings of conjunctions
Abstract	If	1	Enhancing conditional positive
	And	2	Extending additive positive
Introduction	And	14	Extending additive positive
	In addition	1	Extending additive positive
	If	9	Enhancing conditional positive
	Then	2	Enhancing conditional positive
	Furthermore	1	Extending additive positive
	Even	2	Enhancing conditional concessive
Cycles with	Or	1	Extending varying alternative
	And	27	Extending additive positive

chord		If	22	Enhancing conditional positive
		Then	4	Enhancing conditional positive
		Here	3	Enhancing matter positive
		Even	4	Enhancing conditional concessive
		Therefore	5	Enhancing causal general
		Furthermore	2	Extending additive positive
		First	2	Enhancing simple following
		Thus	3	Elaborating clarifying exemplifying
		Next	1	Enhancing simple following
		Also	1	Extending additive positive
		But	1	Extending adversative
Paths chord	with	If	19	Enhancing conditional positive
		Even	7	Enhancing conditional concessive
		And	25	Extending additive positive
		Then	3	Enhancing conditional positive
		First	1	Enhancing simple following
		Thus	3	Elaborating clarifying exemplifying
		Also	1	Extending additive positive
		In particular	1	Elaborating clarifying particularizing
		Moreover	1	Extending additive positive
		Here	2	Enhancing matter positive
		Otherwise	1	Enhancing conditional negative
		Furthermore	1	Extending additive positive
		In other words	1	Elaborating appositional expository
		Hence	1	Enhancing causal general
Wheels chord	with	That is	1	Elaborating appositional expository
		And	9	Extending additive positive
		If	5	Enhancing conditional positive
		Nor	1	Extending additive negative
		Also	1	Extending additive positive
		Furthermore	1	Extending additive positive

The number of conjunctions used in this article is (193) distributed as shown in percentage for each remarked conjunction: **and** 39, 89% **if** 29, 01% **even** 6, 73%. The lowest used conjunctions in this article are: **in addition, in particular, that is** 0, 51%

Reducing the maximum degree of a graph: comparisons of bounds (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	6	Extending additive positive
	Also	1	Extending additive positive
	If	2	Enhancing conditional positive
Introduction	Then	1	Enhancing conditional positive
	And	39	Extending additive positive
	That is	4	Elaborating appositive expository
	If	16	Enhancing conditional positive
	Or	1	Extending varying alternative
	For example	1	Elaborating clarifying exemplifying
	Then	10	Enhancing conditional positive
	But	1	Extending adversative
	Also	1	Extending additive positive
	However	1	Extending adversative
	Hence	1	Enhancing causal general
	Thus	1	Elaborating clarifying exemplifying
	Moreover	1	Extending additive positive
	Proof of Theorem 1.5	And	30
Then		9	Enhancing conditional positive
If		8	Enhancing conditional positive
Thus		11	Elaborating clarifying exemplifying
Hence		7	Enhancing causal general
Therefore		2	Enhancing causal general
Moreover		1	Extending additive positive
Consequently		1	Enhancing causal general
Next		1	Enhancing simple following
Finally		1	Enhancing simple conclusive
Proof of	And	14	Extending additive positive

Theorem 1.6	Moreover	1	Extending additive positive
	If	3	Enhancing conditional positive
	Then	2	Enhancing conditional positive
	Hence	1	Enhancing causal general
	Thus	4	Elaborating clarifying exemplifying
	Consequently	1	Enhancing causal general

The number of conjunctions used in this article is (174) distributed as shown in percentage for each remarked conjunction: **and** 51, 14% **if** 16, 66% **then** 12, 64%. The lowest used conjunctions in this article are: **however, finally** 0, 57%

Mathematics anxiety among STEM and social sciences students: the roles of mathematics self-efficacy, and deep and surface approach to learning (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	5	Extending additive positive
	In particular	1	Elaborating clarifying particularizing
	However	1	Extending adversative
	Therefore	1	Enhancing causal general
	Also	2	Extending additive positive
Introduction	And	13	Extending additive positive
	For	1	Enhancing causal general
	Also	3	Extending additive positive
	Or	1	Extending varying alternative
	Thus	1	Elaborating clarifying exemplifying
Literature review	Therefore	1	Enhancing causal general
	And	33	Extending additive positive
	Or	3	Extending varying alternative
	Therefore	1	Enhancing causal general
	For instance	2	Elaborating clarifying exemplifying
	Also	6	Extending additive positive
	In addition	4	Extending additive positive
	For example	1	Elaborating clarifying exemplifying

Conceptual framework	Nevertheless	2	Enhancing conditional concessive	
	And	3	Extending additive positive	
	For instance	1	Elaborating clarifying exemplifying	
	Finally	1	Enhancing simple conclusive	
	Furthermore	1	Extending additive positive	
Aims and hypothesis	And	14	Extending additive positive	
	Also	4	Extending additive positive	
	Furthermore	1	Extending additive positive	
	Even	1	Enhancing conditional concessive	
	Though	1	Enhancing conditional concessive	
	Therefore	2	Enhancing causal general	
	However	1	Extending adversative	
	Or	1	Extending varying alternative	
	Materials and methods	Or	3	Extending varying alternative
And		5	Extending additive positive	
However		3	Extending adversative	
Because		2	Enhancing causal general	
For instance		1	Elaborating clarifying exemplifying	
Therefore		2	Enhancing causal general	
Finally		1	Enhancing simple conclusive	
Mathematics anxiety		Because	2	Enhancing causal general
		And	12	Extending additive positive
	Secondly	1	Enhancing simple following	
	But	1	Extending adversative	
Analysis	Finally	1	Enhancing simple conclusive	
	And	9	Extending additive positive	
	Or	2	Extending varying alternative	
	If	1	Enhancing conditional positive	
	Finally	1	Enhancing simple conclusive	
Results	Also	1	Extending additive positive	
	Firstly	1	Enhancing simple following	
	And	16	Extending additive positive	
	However	4	Extending adversative	
	In addition	2	Extending additive positive	

	But	3	Extending adversative
	Next	1	Enhancing simple following
	Also	1	Extending additive positive
Conclusions	Finally	1	Enhancing simple conclusive
	And	8	Extending additive positive
	However	1	Extending adversative

The number of conjunctions used in this article is (231) distributed as shown in percentage for each remarked conjunction: **and** 47, 86% **also** 9, 82% **or, therefore** 4, 27%. The lowest rate of conjunctions used in this article are: **in particular, though** 0, 43%

APPENDIX 2

SOFT DOMAIN RESEARCH ARTICLES

Table 3: *Soft Domain Research Articles*

I. Education

Titles of journals	the Number of articles	Titles of articles	Date of publication
Communications in Information Literacy	3	<i>A Noteworthy Next Class: Making Learning Objectives Work for You</i>	2020
		<i>Assessing the Potential for Critical Thinking Instruction in Information Literacy Online Learning Objects Using Best Practices</i>	2020
		<i>Critical Thinking in a Service-Learning Course: Impacts of Information Literacy Instruction</i>	2020
Journal of Curriculum Studies	1	<i>Envisioned and enacted practices: educational policies and the 'politics of use' in schools</i>	2018
Educational Review	1	<i>Geographical variations in the relation between final course grades and results on the national tests in social sciences, 2015-2017</i>	2019
Studies in Continuing Education	1	<i>Liminal practice and reflection in professional education: police education and medical education</i>	2018
Journal of Technology Education	1	<i>Face-to-Face and Online Classes in a Technology Management Program: A Comparative Study</i>	2020
International Journal of Science Education	3	<i>Improving narrative writing skills through observational a study of Swedish 5th-grade students (2018)</i>	2018
		<i>Developing knowledge network for applied education research to mobilize evidence in and for educational practice</i>	2017
		<i>Designing education democratically through deliberative crowdsourcing: the case of Finnish curreculam for basic education</i>	2020

II. Linguistics

Titles of journals	the Number of the articles	Titles of articles	Date of publication
The Southeast Asian Journal of English Language Studies	10	<i>Linguistic Deception of Chinese Cyber Fraudsters</i>	2017
		<i>Second Language Learners' Comprehension of Conversational Implicatures in English</i>	2017
		<i>The Effect of Type of Paragraph on Native and Non-native English Speakers' Use of Grammatical Cohesive Devices in Writing and Raters' Evaluation</i>	2018
		<i>The Association between Vocabulary Size and Language Dominance of Bilingual Malay-English Undergraduates</i>	2018
		<i>Tasks in Explicit L2 Pronunciation Instruction: FonF vs. FonFS in Improving Phonemic Accuracy and Comprehensibility</i>	2018
		<i>The Syntax of Applicative Constructions in Spoken Sudanese Arabic</i>	2018
		<i>Investigating Dominant and Passive Students on Pair Work towards the Students' Writing Performance</i>	2018
		<i>Phonological Fossilisation of EFL Learners: The Interference of Phonological and Orthographic System of L1 Javanese</i>	2019
		<i>The Construction of Time, Place and Society in 21st American Dystopia Fiction: A Corpus Linguistics of Deixis (2020)</i>	2019
		<i>"The Song of Words" Teaching Multi-Word Units with Songs</i>	2019

III. Philosophy

Titles of journals	the Number of the articles	Titles of articles	Date of publication
Cosmos and History: The Journal of Natural and Social Philosophy	1	<i>Notes for a new millennium could a heal their civilization arise from the ashes of modernity?</i>	2021
Koersjournal	1	<i>An exploration of psychological contract violation and calling experienced by religious ministers</i>	2021
Research ethics	4	<i>Research ethics in practice: challenges of using digital technology to embed the voices of children and young people within programs for fathers who use domestic violence</i>	2021

		<i>Ethical challenges in researching and telling the stories of recently deceased people</i>	2021
		<i>Online educational research with middle adolescent populations: Ethical considerations and recommendations</i>	2021
		<i>Moral injury and the need to carry out ethically responsible research</i>	2021
IDO movement for 2		<i>Aggression among Slovak males training in martial arts versus other sports disciplines</i>	2021
culture. Journal of			
Martial Arts		<i>Martial arts: travel and purpose</i>	2021
Anthropology			
Educational 1		<i>Community-based health care providers as a research participant recruitment gatekeepers: ethical and legal issues in a real-world case example</i>	2021
Philosophy and			
Theory			
Library Philosophy 1		<i>Features of components of students' psychological readiness to work as teachers</i>	2021
and Practice (e-			
journal)			

IV. Social science

Titles of the journals	Number of the articles	Titles of articles	Date of publication
Morbidity and Mortality Weekly Report	9	<i>Guidelines for the Treatment of Latent Tuberculosis Infection: Recommendations from the National Tuberculosis Controllers Association and CDC, 2020</i>	2020
		<i>CDC Recommendations for Hepatitis C Screening Among Adults — the United States, 2020</i>	2020
		<i>Assessing Solid Organ Donors and Monitoring Transplant Recipients for Human Immunodeficiency Virus, Hepatitis B Virus, and Hepatitis C Virus Infection — U.S. Public Health Service Guideline, 2020</i>	2020
		<i>Generalized Markovian Quality Distribution System: Social Science Application</i>	2020
		<i>Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — the United States, 2020–21 Influenza Season</i>	2020
		<i>Opioid Prescribing Behaviors — Prescription Behavior Surveillance System, 11 States, 2010–2016</i>	2020
		<i>National Toxic Substances Incidents Program — the Nine States, 2010–2014</i>	2020

Early Identification of Autism Spectrum Disorder Among Children Aged 4 Years — Early Autism and Developmental Disabilities Monitoring Network, Six Sites, United States, 2016 2020

Prevalence of Autism Spectrum Disorder Among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2016 2020

Sociological science 1

Racial and Gender Disparities among Evicted Americans 2020

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — the United States, 2020–21 Influenza Season (2020)

5) Education

A Noteworthy Next Class: Making Learning Objectives Work for You (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	Yet	1	Extending adversative
	Or	1	Extending varying alternative
	However	1	Extending adversative
	And	21	Extending additive positive
A Northway next class: making learning objectives work for you	And	14	Extending additive positive
	Or	3	Extending varying alternative
	But	1	Extending adversative
	Also	3	Extending additive positive
	In fact	1	Elaborating clarifying verificative
	Therefore	1	Enhancing causal general
	However	1	Extending adversative
	Even	1	Enhancing conditional concessive
	And	52	Extending additive positive
	Or	9	Extending varying alternative
Finally	2	Enhancing simple conclusive	
Then	2	Enhancing conditional positive	

	But	4	Extending adversative
	In that case	1	Enhancing conditional positive
	If	1	Enhancing conditional positive
Methodology and taxonomies	Even	1	Enhancing conditional concessive
	For example	1	Elaborating clarifying exemplifying
	So	1	Enhancing causal general
Application	Because	1	Enhancing causal general
	And	35	Extending additive positive
	Also	1	Extending additive positive
	Because of	1	Enhancing causal general
	However	1	Extending adversative
	Or	20	Extending varying alternative
	If	16	Enhancing conditional positive
	Later	1	Enhancing simple following
	Then	2	Enhancing conditional positive
	For example	5	Elaborating clarifying exemplifying
	But	4	Extending adversative
	Even	1	Enhancing conditional concessive
	However	1	Extending adversative
Discussion and conclusion	And	10	Extending additive positive
	Then	1	Enhancing conditional positive
	Or	1	Extending varying alternative

The number of conjunctions used in this article is (210) distributed as shown in percentage for each remarked conjunction: **and** 56, 19% **or** 16, 19 % **if** 8, 09%.

Assessing the Potential for Critical Thinking Instruction in Information Literacy Online Learning Objects Using Best Practices (2020)

Items of the Conjunctions article	Number conjunctions	of Meanings of conjunctions	
	And	14	Extending additive positive
Abstract	Even	1	Enhancing conditional concessive
	But	1	Extending adversative
	Or	3	Extending varying alternative

Literature Review	And	17	Extending additive positive
	Or	3	Extending varying alternative
	Therefore	1	Enhancing causal general
	However	3	Extending adversative
	Nor	1	Extending additive negative
Methods and discussion	And	79	Extending additive positive
	Because	8	Enhancing causal general
	Then	1	Enhancing conditional positive
	Or	2	Extending varying alternative
	However	7	Extending adversative
	But	1	Extending adversative
	Also	1	Extending additive positive
	And	15	Extending additive positive
	For this reason	1	Enhancing causal specific
	In addition	2	Extending additive positive
	So	1	Enhancing causal general
	In this case	1	Enhancing conditional positive
	Because of	2	Enhancing causal general
	At the same time	1	Enhancing simple simultaneous
	For example	1	Elaborating clarifying exemplifying
Results	Even	3	Enhancing conditional concessive
	For	1	Enhancing causal general
	If	3	Enhancing conditional positive
	Therefore	1	Enhancing causal general
	For this reason	1	Enhancing causal specific
	And	9	Extending additive positive
	If	2	Enhancing conditional positive
	Or	1	Extending varying alternative
	Also	1	Extending additive positive
	But	1	Extending adversative
	Especially	1	Elaborating clarifying particularizing
	Even	1	Enhancing conditional concessive
	However	1	Extending adversative

The number of conjunctions used in this article is (211) distributed as shown in percentage for each remarked conjunction: **and** 58, 29% **however** 6, 63% or 5, 21%. The lowest recorded conjunctions used in this article are: **especially, therefore** 0, 47%

Critical Thinking in a Service-Learning Course: Impacts of Information Literacy Instruction
(2020)

Conjunctions	Number conjunctions	of	Meanings of conjunctions
However	2		Extending adversative
And	16		Extending additive positive
If	1		Enhancing conditional positive
And	39		Extending additive positive
Or	9		Extending varying alternative
But	4		Extending adversative
If	2		Enhancing conditional positive
For example	1		Elaborating clarifying exemplifying
Similarly	1		Enhancing manner comparative
Because	2		Enhancing causal general
Even	2		Enhancing conditional concessive
Thus	1		Elaborating clarifying exemplifying
In addition	1		Extending additive positive
And	34		Extending additive positive
In addition	1		Extending additive positive
Thus	1		Elaborating clarifying exemplifying
But	4		Extending adversative
Also	2		Extending additive positive
Or	3		Extending varying alternative
For example	2		Elaborating clarifying exemplifying
Then	1		Enhancing conditional positive
Because	2		Enhancing causal general
At least	1		Elaborating clarifying corrective
		7	sal general additive positive
Nor		1	Extending additive negative

Lastly	1	Enhancing simple conclusive
And	23	Extending additive positive
In addition	1	Extending additive positive
Also	3	Extending additive positive
Or	1	Extending varying alternative
If	1	Enhancing conditional positive
However	3	Extending adversative
For example	3	Elaborating clarifying exemplifying
Finally	1	Enhancing simple conclusive
At the same time	1	Enhancing simple simultaneous
Therefore	1	Enhancing causal general
In addition	1	Extending additive positive
And	1	Extending additive positive
And	9	Extending additive positive
In addition	1	Extending additive positive
Finally	1	Enhancing simple conclusive
Especially	1	Elaborating clarifying particularizing

The number of conjunctions used in this article is (194) distributed as shown in percentage for each remarked conjunction: **and** 57, 21% **or** 6, 70% **but** 4, 12%. the lowest recorded conjunctions in this article are: **especially, at least** 0, 51%

Envisioned and enacted practices: educational policies and the 'politics of use' in schools (2018)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	9	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
	In fact	1	Elaborating clarifying verificative
	Hence	1	Enhancing causal general
Introduction	And	44	Extending additive positive
	Or	4	Extending varying alternative
	But	1	Extending adversative
	In fact	1	Elaborating clarifying verificative
	Also	3	Extending additive positive

Approach, materials, and theoretical explanations	At least	1	Elaborating clarifying corrective
	Thus	1	Elaborating appositive exemplifying
	However	1	Extending adversative
	If	1	Enhancing conditional positive
	Now	1	Enhancing simple simultaneous
	And	200	Extending additive positive
	Therefore	3	Enhancing causal general
	But	14	Extending adversative
	Hence	2	Enhancing causal general
	However	1	Extending adversative
	For example	4	Elaborating appositive exemplifying
	Then	2	Enhancing conditional positive
	Also	13	Extending additive positive
	Lastly	1	Enhancing simple conclusive
	Or	31	Extending varying alternative
	Even	6	Enhancing conditional concessive
	In particular	1	Elaborating clarifying particularizing
	Though	1	Enhancing conditional concessive
	However	9	Extending adversative
	Similarly	1	Enhancing manner comparative
	Thus	7	Elaborating clarifying exemplifying
	For instance	1	Elaborating appositive exemplifying
	Nor	1	Extending additive negative
	If	2	Enhancing conditional positive
	Instead	2	Extending varying replacive
	Here	1	Enhancing matter positive
	Actually	1	Elaborating clarifying verificative
	That is	5	Elaborating appositive expository
	At the same time	1	Enhancing simple simultaneous
	Firstly	2	Enhancing simple following
	Secondly	2	Enhancing simple following
	Now	1	Enhancing simple simultaneous
	Consequently	1	Enhancing causal general
	Otherwise	1	Enhancing conditional negative

Conclusion	Thirdly	1	Enhancing simple following
	Or	9	Extending varying alternative
	But	5	Extending adversative
	Also	4	Extending additive positive
	Thus	3	Elaborating appositive exemplifying
	Even	1	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	And	20	Extending additive positive
	However	2	Extending adversative
	Consequently	1	Enhancing causal general
	That is	1	Elaborating appositive expository
	Firstly	1	Enhancing simple following
	Secondly	1	Enhancing simple following
	At least	1	Elaborating clarifying corrective

The number of conjunctions used in this article is (439) distributed as shown in percentage for each remarked conjunction: **and** 62, 18% **or** 10, 02% **also** 2, 96 %. the lowest recorded conjunctions in this article are: **in particular, actually, similarly** 0, 22%

Geographical variations in the relation between final course grades and results on the national tests in social sciences, 2015-2017 (2019)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	10	Extending additive positive
	Thus	1	Elaborating clarifying exemplifying
Introduction	And	11	Extending additive positive
	Or	1	Extending varying alternative
	Actually	1	Elaborating clarifying verificative
	If	1	Enhancing conditional positive
	Thereby	1	Enhancing manner means
	Furthermore	1	Extending additive positive
	Thus	1	Elaborating clarifying exemplifying
The school system, grading,	And	49	Extending additive positive
	Also	5	Extending additive positive

and national tests in Sweden		But	3	Extending adversative
		Even	1	Enhancing conditional concessive
		And	27	Extending additive positive
		However	3	Extending adversative
		Furthermore	3	Extending additive positive
		Or	1	Extending varying alternative
		If	1	Enhancing conditional positive
		Because	1	Enhancing causal general
Materials methods	and	For instance	3	Elaborating clarifying exemplifying
		Thus	1	Elaborating clarifying exemplifying
		Nevertheless	1	Enhancing conditional concessive
		And	17	Extending additive positive
		In addition	1	Extending additive positive
		Or	3	Extending varying alternative
		Thus	1	Elaborating clarifying exemplifying
		However	2	Extending adversative
		Also	1	Extending additive positive
		Nevertheless	1	Enhancing conditional concessive
		Furthermore	4	Extending additive positive
		First	1	Enhancing simple following
		Second	1	Enhancing simple following
		Thus	1	Elaborating clarifying exemplifying
Results, discussion, empirical models, robustness checks	and	If	3	Enhancing conditional positive
		However	8	Extending adversative
		Also	7	Extending additive positive
		For instance	1	Elaborating clarifying exemplifying
		Even	2	Enhancing conditional concessive
		Though	1	Enhancing conditional concessive
		And	42	Extending additive positive
		Because	2	Enhancing causal general
		Thus	1	Elaborating clarifying exemplifying
		Consequently	1	Enhancing causal general
		Or	3	Extending varying alternative
		Then	1	Enhancing conditional positive

Concluding remarks	And	9	Extending additive positive
	Even	1	Enhancing conditional concessive
	Thereby	1	Enhancing manner means
	If	1	Enhancing conditional positive
	Or	2	Extending varying alternative
	But	1	Extending adversative
	However	1	Extending adversative

The number of conjunctions used in this article is (248) distributed as shown in percentage for each remarked conjunction: **and** 55, 64% **also** 5, 24% **or** 4, 03%. the lowest recorded conjunctions in this article are: **though, consequently** 0, 40%

Liminal practice and reflection in professional education: police education and medical education (2018)

Items of the article	Conjunctions	Number conjunction	of Meanings of conjunctions
Abstract	And	8	Extending additive positive
	Or	2	Extending varying alternative
	But	1	Extending adversative
Introduction	Also	1	Extending additive positive
	Hence	1	Enhancing causal general
	And	27	Extending additive positive
	Or	2	Extending varying alternative
Limitation “the Latin word limen means ‘threshold or boundary” (Meyer and Lord, 2005)	Therefore	1	Enhancing causal general
	Thus	1	Elaborating appositive exemplifying
	Or	14	Extending varying alternative
	And	46	Extending additive positive
	For instance	5	Elaborating appositive exemplifying
	Therefore	1	Enhancing causal general
	However	1	Extending adversative
	Also	1	Extending additive positive
	Thus	3	Elaborating appositive exemplifying
	For example	1	Elaborating appositive exemplifying

	In addition	1	Extending additive positive
	Furthermore	1	Extending additive positive
	Hence	1	Enhancing causal general
	Finally	1	Enhancing simple conclusive
Method	And	33	Extending additive positive
	Thus	3	Elaborating appositive exemplifying
	However	1	Extending adversative
	Also	4	Extending additive positive
	But	2	Extending adversative
Findings the 'who' limited practitioners	In addition	1	Extending additive positive
	Finally	1	Enhancing simple conclusive
	Or	1	Extending varying alternative
	And	37	Extending additive positive
	Despite	1	Enhancing conditional concessive
	And	32	Extending additive positive
	Thus	3	Elaborating appositive exemplifying
	Or	16	Extending varying alternative
	Nor	1	Extending additive negative
	If	1	Enhancing conditional positive
	Also	12	Extending additive positive
	First	1	Enhancing simple following
	For example	2	Elaborating appositive exemplifying
	In addition	1	Extending additive positive
	For instance	3	Elaborating appositive exemplifying
	Because	7	Enhancing causal general
	However	5	Extending adversative
	Here	1	Enhancing matter positive
	On the other hand	2	Extending varying replacive
	But	6	Extending adversative
	In this case	1	Enhancing conditional positive
	That is	1	Elaborating appositive expository
	Then	2	Enhancing conditional positive
	Furthermore	1	Extending additive positive

Discussion	Even	1	Enhancing conditional concessive
	Thereby	1	Enhancing manner means
	And	10	Extending additive positive
	Also	2	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
	Finally	1	Enhancing simple conclusive
Does lamination afford reflection?	But	2	Extending adversative
	First	1	Enhancing simple following
	For instance	2	Elaborating appositive exemplifying
	Or	3	Extending varying alternative
	Second	1	Enhancing simple following
	Similarly	1	Enhancing manner comparative
	However	1	Extending adversative
	Also	4	Extending additive positive
	In addition	1	Extending additive positive
	In conclusion	1	Elaborating clarifying summative
	And	29	Extending additive positive

The number of conjunctions used in this article is (370) distributed as shown in percentage for each remarked conjunction: **and** 60% **or** 10, 27% **also** 6, 48%. The lowest recorded conjunctions in this article are: **on the other hand, in conclusion** 0, 27%

Face-to-Face and Online Classes in a Technology Management Program: A Comparative Study (2020)

Items of the article	the Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	12	Extending additive positive
Literature review	Or	2	Extending varying alternative
	However	2	Extending adversative
	Because of	1	Enhancing causal general
	Also	1	Extending additive positive
	And	23	Extending additive positive
	Because	1	Enhancing causal general

Research objectives and analysis	But	1	Extending adversative
	On the other hand	1	Extending varying replacive
	Or	1	Extending varying alternative
	And	69	Extending additive positive
	Or	2	Extending varying alternative
	Also	5	Extending additive positive
	If	5	Enhancing conditional positive
Discussion	But	1	Extending adversative
	Because	1	Enhancing causal general
	But	2	Extending adversative
	Similarly	1	Enhancing manner comparative
	And	18	Extending additive positive
	However	1	Extending adversative
	Therefore	2	Enhancing causal general
	Also	4	Extending additive positive
	Or	3	Extending varying alternative
	But	2	Extending adversative
	For example	1	Elaborating appositive exemplifying

The number of conjunctions used in this article is (172) distributed as shown in percentage for each remarked conjunction: **and** 70, 93% **also** 5, 81% **or** 4, 65% the lowest recorded conjunctions in this article are: **on the other hand**, **similarly** 0, 58%

Improving narrative writing skills through observational learning: a study of Swedish 5th-grade students (2018)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	5	Extending additive positive
	However	1	Extending adversative
Introduction	Also	4	Extending additive positive
	And	74	Extending additive positive
	Consequently	2	Enhancing causal general
	In addition	2	Extending additive positive

	For instance	3	Elaborating clarifying exemplifying
	For this reason	1	Enhancing causal specific
	Therefore	1	Enhancing causal general
	Or	6	Extending varying alternative
	But	8	Extending adversative
	Here	1	Enhancing matter positive
	However	5	Extending adversative
	Instead	1	Extending varying alternative
	For example	2	Elaborating clarifying exemplifying
	At the same time	1	Enhancing simple simultaneous
	Therefore	3	Enhancing causal general
	Instead	1	Extending varying replacive
	First	1	Enhancing simple following
	If	3	Enhancing conditional positive
	Second	1	Enhancing simple following
	Likewise	1	Enhancing manner comparative
Methods	And	61	Extending additive positive
	Because	1	Enhancing causal general
	Or	13	Extending varying alternative
	Finally	1	Enhancing simple conclusive
	But	4	Extending adversative
	Also	5	Extending additive positive
	Then	1	Enhancing conditional concessive
	Consequently	1	Enhancing causal general
	If	1	Enhancing conditional positive
	Nor	1	Extending additive negative
	And	32	Extending additive positive
Results	Furthermore	1	Extending additive positive
	But	2	Extending adversative
	Also	2	Extending additive positive
	Here	1	Enhancing matter positive
	There	1	Enhancing matter positive
	Or	3	Extending varying alternative
	For instance	1	Elaborating clarifying exemplifying

Discussion	Instead	1	Extending varying replacive
	Because	1	Enhancing causal general
	However	1	Extending adversative
	On the contrary	1	Extending varying replacive
	In addition	2	Extending additive positive
	And	21	Extending additive positive
	Finally	1	Enhancing simple conclusive
	Though	2	Enhancing conditional concessive
	Also	2	Extending additive positive
	At least	1	Elaborating clarifying corrective
	Nevertheless	1	Enhancing conditional concessive
	Even	1	Enhancing conditional concessive
	But	3	Extending adversative
	Or	2	Extending varying alternative
	Thus	1	Elaborating clarifying exemplifying
Conclusion	Instead	1	Extending varying replacive
	If	1	Enhancing conditional positive
	And	2	Extending additive positive
	However	1	Extending adversative
	Also	1	Extending additive positive
	Next	1	Enhancing simple following
	Finally	1	Enhancing simple conclusive

The number of conjunctions used in this article is (308) distributed as shown in percentage for each remarked conjunction: **and** 66, 55% **or** 7, 79% **also** 4, 54% the lowest recorded conjunctions in this article are: **for this reason, on the contrary, nevertheless** 0, 32%

Developing a knowledge network for applied education research to mobilize evidence in and for educational practice (2017)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	38	Extending additive positive
	Also	1	Extending additive positive

	Or	7	Extending varying alternative
	Then	1	Enhancing conditional positive
	For	1	Enhancing causal general
	But	1	Extending adversative
Introduction and mobilization (KNAER)	And	85	Extending additive positive
	Nevertheless	1	Enhancing conditional concessive
	For example	2	Elaborating clarifying exemplifying
	Or	2	Extending varying alternative
	However	1	Extending adversative
	Also	2	Extending additive positive
	For	1	Enhancing causal general
	Indeed	1	Elaborating clarifying verificative
	Hence	1	Enhancing causal general
	Then	1	Enhancing conditional positive
Methods and analysis	And	48	Extending additive positive
	Or	1	Extending varying alternative
	Also	2	Extending additive positive
	For example	2	Elaborating appositive exemplifying
	In addition	2	Extending additive positive
	And	150	Extending additive positive
	Also	11	Extending additive positive
	Or	26	Extending varying alternative
	But	6	Extending adversative
	Then	1	Enhancing conditional positive
	In addition	2	Extending additive positive
	At least	3	Elaborating clarifying corrective
	Finally	1	Enhancing simple following
	Therefore	2	Enhancing causal general
	For example	10	Elaborating appositive exemplifying
	First	2	Enhancing simple following
	Nevertheless	1	Enhancing conditional concessive
	Even	1	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	Next	1	Enhancing simple following

	Lastly	1	Enhancing simple conclusive
	Even	1	Enhancing conditional concessive
	Though	1	Enhancing conditional concessive
	For	1	Enhancing causal general
	However	2	Extending adversative
Conclusion	And	63	Extending additive positive
	If	3	Enhancing conditional positive
	Then	1	Enhancing conditional positive
	However	3	Extending adversative
	For example	3	Elaborating appositive exemplifying
	For	1	Enhancing causal general
	Also	1	Extending additive positive
	Hence	1	Enhancing causal general
	Nevertheless	1	Enhancing conditional concessive
	Because of	1	Enhancing causal general
	But	2	Extending adversative
	Or	4	Extending varying alternative

The number of conjunctions used in this article is (510) distributed as shown in percentage for each remarked conjunction: **and** 74, 11% **or** 7, 84% **also** 3, 13% the lowest recorded conjunctions in this article are: **indeed**, **finally**, **though** 0, 19%

Designing education democratically through deliberative crowdsourcing: the case of the Finnish curriculum for basic education (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	5	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
Introduction	And	29	Extending additive positive
	That is	1	Elaborating appositive expository
	Even	1	Enhancing conditional concessive
	Hence	2	Enhancing causal general
	If	2	Enhancing conditional positive

	Also	1	Extending additive positive
	In addition	1	Extending additive positive
	Then	1	Enhancing conditional concessive
	Finally	1	Enhancing simple following
	Secondly	1	Enhancing simple following
Understanding the curriculum design	And	47	Extending additive positive
	But	4	Extending adversative
	Or	9	Extending varying alternative
	Because	1	Enhancing causal general
	Thus	2	Elaborating appositive exemplifying
	However	2	Extending adversative
	At least	1	Elaborating clarifying corrective
	Then	1	Enhancing conditional positive
	For example	1	Elaborating appositive exemplifying
	In addition	3	Extending additive positive
	If	3	Enhancing conditional positive
	For instance	1	Elaborating clarifying exemplifying
	On the other hand	1	Extending varying replacive
	Thus	1	Elaborating appositive exemplifying
	Also	3	Extending additive positive
	In this case	1	Enhancing conditional positive
	Context	And	28
But		1	Extending adversative
Consequently		1	Enhancing causal general
That is		1	Elaborating appositive expository
Data methods	and		
	And	41	Extending additive positive
	At that time	1	Enhancing complex durative
	However	1	Extending adversative
	First	2	Enhancing simple following
	Or	5	Extending varying alternative
	Therefore	1	Enhancing causal general
In addition	1	Extending additive positive	

	For instance	1	Elaborating appositive exemplifying
	If	1	Enhancing conditional positive
	Then	1	Enhancing conditional positive
	Thus	1	Elaborating appositive exemplifying
	Also	3	Extending additive positive
	Finally	1	Enhancing simple conclusive
	For example	2	Elaborating appositive exemplifying
	But	2	Extending adversative
Results	And	42	Extending additive positive
	Or	18	Extending varying alternative
	For instance	4	Elaborating appositive exemplifying
	Especially	1	Elaborating clarifying particularizing
	But	6	Extending adversative
	However	9	Extending adversative
	Also	2	Extending additive positive
	In addition	2	Extending additive positive
	Furthermore	1	Extending additive positive
	Instead	3	Extending varying replacive
	Thus	4	Elaborating appositive exemplifying
	Though	3	Enhancing conditional concessive
	At least	1	Elaborating clarifying corrective
	Even	5	Enhancing conditional concessive
	Thus	1	Elaborating appositive exemplifying
	Instead	1	Extending varying replacive
	Discussion	Therefore	1
And		17	Extending additive positive
If		2	Enhancing conditional positive
However		4	Extending adversative
Even		5	Enhancing conditional concessive
But		1	Extending adversative
As a result		1	Enhancing causal specific
Furthermore		1	Extending additive positive
Or		1	Extending varying alternative
Also		2	Extending additive positive

For	1	Enhancing causal general
Therefore	1	Enhancing causal general
Despite	1	Enhancing conditional concessive

The number of conjunctions used in this article is (365) distributed as a percentage for each scored conjunction: **and** 57, 26% **or** 9, 04% **also** 3, 28%. the lowest recorded conjunctions in this article are: **consequently, as a result, despite** 0, 27%

6) Linguistics

Linguistic Deception of Chinese Cyber Fraudsters (2017)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	12	Extending additive positive
	Or	2	Extending varying alternative
	In addition	1	Extending additive positive
	But	1	Extending adversative
	Then	1	Enhancing conditional positive
	Thus	1	Elaborating appositive exemplifying
	In particular	1	Elaborating clarifying particularizing
	Also	1	Extending additive positive
	If	1	Enhancing conditional positive
Introduction	Therefore	2	Enhancing causal general
	Also	2	Extending additive positive
	And	17	Extending additive positive
	Or	4	Extending varying alternative
	Because	1	Enhancing causal general
	Thus	2	Elaborating appositive exemplifying
	Even	1	Enhancing conditional concessive
Literature review	Then	1	Enhancing conditional positive
	And	29	Extending additive positive
	Or	9	Extending varying alternative
	Even if	1	Enhancing conditional concessive

	But	2	Extending adversative
	In this respect	1	Enhancing matter positive
	Because	3	Enhancing causal general
	Even	1	Enhancing conditional concessive
	However	1	Extending adversative
	In addition	1	Extending additive positive
	And	12	Extending additive positive
	In addition	1	Extending additive positive
	Also	1	Extending additive positive
	If	1	Enhancing conditional positive
	But	1	Extending adversative
	Or	1	Extending varying alternative
	And	32	Extending additive positive
Results, analysis, and discussion	Or	9	Extending varying alternative
	Meanwhile	1	Enhancing complex durative
	In such cases	1	Enhancing conditional positive
	After that	1	Enhancing complex interrupted
	However	2	Extending adversative
	Because	1	Enhancing causal general
	Or	10	Extending varying alternative
	Nor	1	Extending additive negative
	Instead of	1	Extending varying replacive
	Hence	1	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	Then	1	Enhancing conditional concessive
	Therefore	1	Enhancing causal general
	But	2	Extending adversative
	Nevertheless	1	Enhancing conditional concessive
	Soon	1	Enhancing complex interrupted
Pragmatics strategies and speech acts	In other cases	1	Enhancing conditional positive
	And	75	Extending additive positive
	Or	22	Extending varying alternative
	Therefore	4	Enhancing causal general
	But	10	Extending adversative

	Then	3	Enhancing conditional positive
	Hence	2	Enhancing causal general
	Because	3	Enhancing causal general
	Despite this	1	Enhancing conditional concessive
	Even	1	Enhancing conditional concessive
	Even	1	Enhancing conditional concessive
	In addition	1	Extending additive positive
	In these cases	1	Enhancing conditional positive
	In fact	1	Elaborating clarifying verificative
	Thus	4	Elaborating appositive exemplifying
	However	1	Extending adversative
	Nevertheless	1	Enhancing conditional concessive
	Here	1	Enhancing matter positive
	There	1	Enhancing matter positive
	At the moment	1	Enhancing complex punctiliar
	Consequently	1	Enhancing causal general
	For example	1	Elaborating appositive exemplifying
	Actually	1	Elaborating clarifying verificative
	And	18	Extending additive positive
Further discussion	Then	1	Enhancing conditional positive
	For example	1	Elaborating appositive exemplifying
	Because	1	Enhancing causal general
	Or	2	Extending varying alternative
	In addition	1	Extending additive positive
	Also	1	Extending additive positive
Conclusion	And	3	Extending additive positive
	Also	1	Extending additive positive

The number of conjunctions used in this article is (350) distributed as shown in percentage for each remarked conjunction: **And** 53.23% **or** 14.70% **because** 2.64%. the lowest recorded conjunctions in this article are: **meanwhile**, **actually**, **consequently**, **in fact** 0, 28%

Second Language Learners' Comprehension of Conversational Implicatures in English (2017)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	Then	1	Enhancing conditional positive
	And	7	Extending additive positive
	For instance	1	Elaborating appositive exemplifying
	But	1	Extending adversative
	However	1	Extending adversative
	At the same time	1	Enhancing simple simultaneous
Introduction	And	12	Extending additive positive
	Or	3	Extending varying alternative
	Consequently	1	Enhancing causal general
	Also	3	Extending additive positive
	But	1	Extending adversative
	On the other hand	1	Extending varying replacive
	Even	1	Enhancing conditional concessive
	Because	1	Enhancing causal general
	Thus	1	Elaborating appositive exemplifying
	Therefore	1	Enhancing causal general
Implecture as an important theme in pragmatics	Here	1	Enhancing matter positive
	Or	10	Extending varying alternative
	Because	3	Enhancing causal general
	And	36	Extending additive positive
	Then	1	Enhancing conditional positive
	But	3	Extending adversative
	Even	1	Enhancing conditional concessive
	Therefore	2	Enhancing causal general
	On the other hand	2	Extending varying replacive
	If	2	Enhancing conditional positive
	Hence	1	Enhancing causal general
	Thus	1	Elaborating appositive exemplifying
	For example	2	Elaborating appositive exemplifying
	In addition	1	Extending additive positive
	However	2	Extending adversative
	Especially	1	Elaborating clarifying particularizing
	Furthermore	1	Extending additive positive

Research methods	And	27	Extending additive positive
	Also	1	Extending additive positive
	But	1	Extending adversative
	Hence	1	Enhancing causal general
	Or	1	Extending varying alternative
	If	3	Enhancing conditional positive
Implicature comprehension among three groups based on formal exposure	Then	1	Enhancing conditional positive
	And	53	Extending additive positive
	On the other hand	1	Extending varying replacive
	Or	3	Extending varying alternative
	Hence	1	Enhancing causal general
	However	1	Extending adversative
	Also	6	Extending additive positive
	Because	2	Enhancing causal general
	In fact	1	Elaborating clarifying verificative
	Lastly	1	Enhancing simple conclusive
	Thus	1	Elaborating appositive exemplifying
	Therefore	2	Enhancing causal general
	But	3	Extending adversative
	Hence	2	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	On the other hand	1	Extending varying replacive
In this case	1	Enhancing conditional positive	

Conclusion

Elaborating clarifying summative
 Elaborating clarifying particularizing
 Extending additive positive
 Enhancing causal general
 Extending adversative
 Enhancing complex durative
 Extending additive positive
 Enhancing conditional concessive
 Elaborating appositive exemplifying
 Enhancing simple following

The number of conjunctions used in this article is (242) distributed as a percentage for each scored conjunction: **and** 59.91% **or** 7.02% **also** 4.13%. the lowest recorded conjunctions in this article are: **to sum up, nevertheless** 0, 41%

The Effect of Type of Paragraph on Native and Non-native English Speakers 'Use of Grammatical Cohesive Devices in Writing and Raters' Evaluation (2018)

Items of the article	the Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	11	Extending additive positive
	In addition	1	Extending additive positive
	If	1	Enhancing conditional positive
	Furthermore	1	Extending additive positive
	However	1	Extending adversative
Introduction	And	21	Extending additive positive
	However	1	Extending adversative
	Then	1	Enhancing conditional positive
	Therefore	3	Enhancing causal general
	In fact	1	Elaborating clarifying verificative
	Lastly	1	Enhancing simple conclusive
	Furthermore	1	Extending additive positive
	Next	1	Enhancing simple following
	Literature review	Or	5
And		57	Extending additive positive
In fact		4	Elaborating clarifying verificative
Hence		1	Enhancing causal general
Furthermore		1	Extending additive positive
In addition		1	Extending additive positive
However		4	Extending adversative
Thus		1	Elaborating appositive exemplifying
On the other hand		1	Extending varying replacive
Also		1	Extending additive positive
Similarly		2	Enhancing manner comparative
For instance		1	Elaborating appositive exemplifying

	Secondly	1	Enhancing simple following
	Thirdly	1	Enhancing simple following
	Fourthly	1	Enhancing simple following
	Because	1	Enhancing causal general
	Nevertheless	1	Enhancing conditional concessive
	In particular	1	Elaborating clarifying particularizing
Methodology	In fact	2	Elaborating clarifying verificative
	And	47	Extending additive positive
	Moreover	1	Extending additive positive
	Furthermore	6	Extending additive positive
	However	3	Extending adversative
	Similarly	1	Enhancing manner comparative
	Also	4	Extending additive positive
	Even	1	Enhancing conditional concessive
	If	6	Enhancing conditional positive
	Or	5	Extending varying alternative
	Then	3	Enhancing conditional positive
	As a result	1	Enhancing causal specific
Results	And	91	Extending additive positive
	Similarly	1	Enhancing manner comparative
	However	9	Extending adversative
	If	2	Enhancing conditional positive
	Moreover	2	Extending additive positive
	Furthermore	5	Extending additive positive
	Because	7	Enhancing causal general
Discussion	And	12	Extending additive positive
	Furthermore	1	Extending additive positive
	However	4	Extending adversative
	Yet	1	Extending adversative
	Finally	1	Enhancing simple conclusive
	Moreover	1	Extending additive positive
	In fact	1	Elaborating clarifying verificative
Conclusion	and And	9	Extending additive positive

implication	Furthermore	3	Extending additive positive
	For instance	1	Elaborating appositive exemplifying
	Or	1	Extending varying alternative
	Moreover	1	Extending additive positive
	In addition	1	Extending additive positive
	In particular	1	Elaborating clarifying particularizing
	But	1	Extending adversative
	However	1	Extending adversative

The number of conjunctions used in this article is (367) distributed as a percentage for each scored conjunction: **and** 67.57% **however** 6.26% **or** 2.99%. the lowest recorded conjunctions in this article are: **as a result, yet** 0, 27%

The association between vocabulary size and language dominance of bilingual Malay-English undergraduates (2018)

Items of Conjunctions the article	Number conjunctions	of Meanings of conjunctions	
Abstract	And	7	Extending additive positive
	Therefore	1	Enhancing causal general
Introduction	Also	1	Extending additive positive
	And	31	Extending additive positive
	Therefore	1	Enhancing causal general
	Or	6	Extending varying alternative
	Even	1	Enhancing conditional concessive
	But	3	Extending adversative
	Also	5	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
	For instance	1	Elaborating appositive exemplifying
	For example	1	Elaborating appositive exemplifying
	However	3	Extending adversative
	Similarly	1	Enhancing manner comparative
	In	1	Extending additive positive

	addition		
	In this case	1	Enhancing conditional positive
Literature review	And		Extending additive positive
	Thus		Elaborating appositive exemplifying
	In other words		Extending varying replacive
	However		Extending adversative
	Though		Enhancing conditional concessive
	For instance		Elaborating appositive exemplifying
	For example		Elaborating appositive exemplifying
	Because		Enhancing causal general
	In addition		Extending additive positive
	Also		Extending additive positive
Methodology	And		Extending additive positive
	Therefore		Enhancing causal general
	Likewise		Enhancing matter comparative
	But		Extending adversative
	Furthermore		Extending additive positive
	Finally		Enhancing simple conclusive
	Because		Enhancing causal general
	Also	6	Extending additive positive
	Because of	1	Enhancing causal general
	Though	1	Enhancing conditional concessive
	In addition	1	Extending additive positive
	Or	3	Extending varying alternative
	Next	1	Enhancing simple following
	Up to now	1	Enhancing simple preceding
Results and discussion	And	44	Extending additive positive
	Finally	1	Enhancing simple conclusive
	Moreover	1	Extending additive positive
	Furthermore	3	Extending additive positive
	Therefore	3	Enhancing causal general
	However	2	Extending adversative

	Also	2	Extending additive positive
	In other words	1	Extending varying replacive
	Thus	1	Elaborating appositive exemplifying
	Consequently	1	Enhancing causal general
	For	1	Enhancing causal general
	Thereby	1	Enhancing manner means
Conclusion and implications	And	13	Extending additive positive
	However	1	Extending adversative
	Nevertheless	1	Enhancing conditional concessive
	In other words	1	Extending varying replacive
	Also	2	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
	Or	1	Extending varying alternative

The number of conjunctions used in this article is (286) distributed as shown in percentage for each remarked conjunction: **and** 68, 53% **also** 5, 59% **or** 3, 49%. the lowest recorded conjunctions in this article are: **thereby**, **consequently** 0, 34%

Tasks in Explicit L2 Pronunciation Instruction: FonF vs.FonFS in Improving Phonemic Accuracy and Comprehensibility (2018)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	9	Extending additive positive
	However	1	Extending adversative
Introduction	Also	1	Extending additive positive
	And	11	Extending additive positive
	However	1	Extending adversative
	Nevertheless	2	Enhancing conditional concessive
	Despite	1	Enhancing conditional concessive
Literature review	If	1	Enhancing conditional positive
	And	26	Extending additive positive
	In fact	2	Elaborating clarifying verificative
	Though	1	Enhancing conditional concessive

Purpose of the study	Also	3	Extending additive positive	
	Later	1	Enhancing simple following	
	Or	1	Extending adversative	
	Finally	1	Enhancing simple conclusive	
	Moreover	1	Extending additive positive	
	Thus	1	Elaborating clarifying exemplifying	
	If	2	Enhancing conditional positive	
	And	5	Extending additive positive	
	Despite	1	Enhancing conditional concessive	
	Furthermore	1	Extending additive positive	
	Hence	2	Enhancing causal general	
	Moreover	1	Extending additive positive	
	Method and data analysis	Also	1	Extending additive positive
		And	50	Extending additive positive
Or		2	Extending adversative	
But		1	Extending adversative	
Also		3	Extending additive positive	
Hence		2	Enhancing causal general	
Thus		3	Elaborating appositive exemplifying	
Even		1	Enhancing conditional concessive	
However		1	Extending adversative	
As a result		1	Enhancing causal specific	
Because		2	Enhancing causal general	
Though		1	Enhancing conditional concessive	
Later		1	Enhancing simple following	
If		6	Enhancing conditional positive	
Consequently		1	Enhancing causal general	
Nevertheless		1	Enhancing conditional concessive	
Finally		2	Enhancing simple conclusive	
Meanwhile		1	Enhancing complex durative	
Therefore		3	Enhancing causal general	
Next		1	Enhancing simple following	
Then		1	Enhancing conditional positive	
First		1	Enhancing simple following	

Results, discussion, and conclusion	Later	1	Enhancing simple following
	And	31	Extending additive positive
	Likewise	1	Enhancing manner comparative
	Nevertheless	3	Enhancing conditional concessive
	Also	9	Extending additive positive
	Thus	2	Elaborating appositive exemplifying
	Because	2	Enhancing causal general
	But	2	Extending adversative
	In fact	2	Elaborating clarifying verificative
	On the other hand	1	Extending adversative
	Therefore	2	Enhancing causal general
	Yet	1	Extending adversative
	Especially	1	Elaborating clarifying particularizing
	However	1	Extending adversative
	Or	1	Extending varying alternative
	Moreover	1	Extending additive positive
	Finally	1	Enhancing simple conclusive
	Yet	1	Extending adversative
For	1	Enhancing causal general	

The number of conjunctions used in this article is (226) distributed as a percentage for each scored conjunction: **and** 57, 96% **also** 7, 52% **if** 3, 98%. the lowest recorded conjunctions in this article are: **consequently, on the other hand** 0, 44%

The Syntax of Applicative Constructions in Spoken Sudanese Arabic (2018)

	Items of Conjunctions the article	Number conjunctions	of Meanings of conjunctions	
n	Abstract	Or	2	Extending varying alternative
	Introductio	And	4	Extending additive positive
		Consequently	1	Enhancing causal general
		And	13	Extending additive positive
		Or	5	Extending varying alternative

		Because	1	Enhancing causal general
		However	1	Extending adversative
	hand	On the other	2	Extending varying replacive
		Consequently	1	Enhancing causal general
		For example	1	Elaborating appositive exemplifying
		Therefore	1	Enhancing causal general
Methodolo		And	12	Extending additive positive
gy		Similarly	1	Enhancing manner comparative
		Then	1	Enhancing conditional positive
		Or	5	Extending varying alternative
		First	1	Enhancing simple following
		Second	1	Enhancing simple following
		In addition	1	Extending additive positive
		But	1	Extending adversative
		And	8	Extending additive positive
		Or	3	Extending varying alternative
		However	1	Extending adversative
		Or	4	Extending varying alternative
		And	22	Extending additive positive
		However	2	Extending adversative
		Because	4	Enhancing causal general
		Consequently	1	Enhancing causal general
		Also	2	Extending additive positive
		Therefore	2	Enhancing causal general
		Thus	3	Elaborating appositive exemplifying
		Hence	1	Enhancing causal general
		As a result	1	Enhancing causal specific
		For instance	1	Elaborating appositive exemplifying
		nor	1	Extending additive negative
		However	1	Extending adversative
		Also	1	Extending additive positive
		Therefore	1	Enhancing causal general

The number of conjunctions used in this article is (114) distributed as a percentage for each scored conjunction: **and** 51.75% **or** 16.66% **because** 4.38%. the lowest recorded conjunctions in this article are: **similarly, as a result** 0, 87%

Investigating Dominant and Passive Students on Pair Work towards the Students' Writing Performance (2018)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	3	Extending additive positive
	Furthermore	1	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
Introduction	And	21	Extending additive positive
	Furthermore	1	Extending additive positive
	In fact	2	Elaborating clarifying verificative
	Because of	1	Enhancing causal general
	Moreover	1	Extending additive positive
	For example	1	Elaborating appositive exemplifying
	Because	1	Enhancing causal general
	Thus	2	Elaborating appositive exemplifying
	Also	1	Extending additive positive
Literature review	And	27	Extending additive positive
	Also	5	Extending additive positive
	Furthermore	1	Extending additive positive
	But	1	Extending adversative
	Thus	2	Elaborating appositive exemplifying
	Meanwhile	1	Enhancing complex durative
	Then	1	Enhancing conditional positive
	Or	1	Extending varying alternative
	So	1	Enhancing causal general
Methodology	And	57	Extending additive positive
	Thus	2	Elaborating appositive exemplifying
	First	1	Enhancing simple following
	Second	1	Enhancing simple following
	Moreover	2	Extending additive positive
	Also	2	Extending additive positive

	Meanwhile	2	Enhancing complex durative
	Because	1	Enhancing causal general
	So	2	Enhancing causal general
	If	1	Enhancing conditional positive
	Furthermore	1	Extending additive positive
	Or	3	Extending varying alternative
	Then	1	Enhancing conditional positive
	Third	1	Enhancing simple following
	Fourth	1	Enhancing simple following
Results	And	21	Extending additive positive
	Moreover	1	Extending additive positive
	Because	1	Enhancing causal general
	Then	2	Enhancing conditional positive
	Also	1	Extending additive positive
	Meanwhile	1	Enhancing complex durative
Discussion	And	31	Extending additive positive
	Also	9	Extending additive positive
	On the other hand	2	Extending varying replacive
	Furthermore	2	Extending additive positive
	Moreover	4	Extending additive positive
	In short	1	Elaborating clarifying summative
	Or	1	Extending varying alternative
	Thus	1	Elaborating appositive exemplifying
	Therefore	1	Enhancing causal general
	For	1	Enhancing causal general
	In conclusion	1	Elaborating clarifying summative
	But	1	Extending adversative
Conclusion	And	5	Extending additive positive
	Also	7	Extending additive positive
	But	1	Extending adversative

The number of conjunctions used in this article is (251) distributed as a percentage for each scored conjunction: **and** 65, 73% **also** 9, 96% **moreover, thus** 3, 18%. the lowest recorded conjunctions in this article are: **in short, in conclusion** 0, 39%

Phonological Fossilization of EFL Learners: The Interference of Phonological and Orthographic System of L1 Javanese (2019)

Items of the article	Conjunctions	Number of conjunctions	of Meanings of conjunctions	
Abstract	And	9	Extending additive positive	
Introduction	And	31	Extending additive positive	
	Or	22	Extending varying alternative	
	But	3	Extending adversative	
	Also	2	Extending additive positive	
	As a result	1	Enhancing causal specific	
	Furthermore	1	Extending additive positive	
	Instead of	3	Extending varying replacive	
	Nevertheless	1	Enhancing conditional concessive	
	For example	1	Elaborating appositive exemplifying	
	Because of	1	Enhancing causal general	
	In fact	1	Elaborating clarifying verificative	
	Because	2	Enhancing causal general	
	Moreover	1	Extending additive positive	
	On the other hand	1	Extending varying replacive	
	Because of	2	Enhancing causal general	
	If	1	Enhancing conditional concessive	
	Then	1	Enhancing conditional positive	
	Consequently	1	Enhancing causal general	
	Methodology	And	11	Extending additive positive
		Or	1	Extending varying alternative
First		1	Enhancing simple following	
Findings and discussion	And	74	Extending additive positive	
	Or	19	Extending varying alternative	
	But	5	Extending adversative	
	Yet	1	Extending adversative	
	Because of	2	Enhancing causal general	
	Instead of	6	Extending varying replacive	

	For example	1	Elaborating appositive exemplifying
	Also	5	Extending additive positive
	In fact	1	Elaborating clarifying verificative
	Moreover	3	Extending additive positive
	However	1	Extending adversative
	Then	1	Enhancing conditional concessive
Conclusion and recommendation	And	12	Extending additive positive
	For instance	1	Elaborating appositive exemplifying
	Moreover	1	Extending additive positive
	Or	5	Extending varying alternative
	Furthermore	1	Extending additive positive
	In addition	1	Extending additive positive
	Because of	2	Enhancing causal general
	Instead of	1	Extending varying replacive
	Also	1	Extending additive positive

The number of conjunctions used in this article is (241) distributed as a percentage for each scored conjunction: **and** 56, 84% **or** 19, 50% **but** 3, 31%. the lowest recorded conjunctions in this article are: **as a result**, **consequently** 0, 41%

The Construction of Time, Place and Society in 21st Century American Dystopia Fiction: A Corpus Linguistics Analysis of Deixis (2020)

	Items of Conjunctions the article	Number conjunctions	of Meanings of conjunctions
n	And	6	Extending additive positive
	Abstract Thus	1	Elaborating appositive exemplifying
	For	1	Enhancing causal general
	Introductio And	63	Extending additive positive
	But	2	Extending adversative
	Especially	1	Elaborating clarifying particularizing
	At that time	2	Enhancing complex durative
	If	1	Enhancing conditional positive
	Thus	3	Elaborating appositive exemplifying
	Or	5	Extending varying alternative
Even	1	Enhancing conditional concessive	

		Therefore	1	Enhancing causal general		
		For example	1	Elaborating appositive exemplifying		
		Especially	1	Elaborating clarifying particularizing		
		In some cases	1	Enhancing conditional positive		
		However	1	Extending adversative		
		There	1	Enhancing matter positive		
		And	29	Extending additive positive		
gy	Methodolo	Or	2	Extending varying alternative		
		Especially	2	Elaborating clarifying particularizing		
		In addition	2	Extending additive positive		
		Moreover	1	Extending additive positive		
		And	27	Extending additive positive		
		Because	1	Enhancing causal general		
Analysis and results		Actually	1	Elaborating clarifying verificative		
		For example	2	Elaborating appositive exemplifying		
		Then	1	Enhancing conditional positive		
		In addition	1	Extending additive positive		
		Later	1	Enhancing simple following		
		More precisely	1	Elaborating clarifying corrective		
		Thus	1	Elaborating appositive exemplifying		
		And	36	Extending additive positive		
		Discussion		However	1	Extending adversative
				Then	1	Enhancing conditional positive
There	2			Enhancing matter positive		
But	1			Extending adversative		
Moreover	1			Extending additive positive		
That morning	1			Enhancing complex specific		
Or	1			Extending varying alternative		
Because	1			Enhancing causal general		
Hence	1			Enhancing causal general		
And	18			Extending additive positive		
Conclusion		Or	1	Extending varying alternative		
		Thus	1	Elaborating appositive exemplifying		
		In this case	1	Enhancing conditional positive		

The number of conjunctions used in this article is (233) distributed as shown in percentage for each remarked conjunction: **and** 76, 82% **or** 3, 86% **thus** 3, 43%. the lowest recorded conjunctions in this article are: **actually, more precisely** 0, 42%

“The Song of Words” Teaching Multi-Word Units with Songs (2019)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	Thereby	1	Enhancing manner means
	And	3	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
	But	1	Extending adversative
	Especially	1	Elaborating clarifying particularizing
Introduction	And	15	Extending additive positive
	Also	3	Extending additive positive
	For example	1	Elaborating appositive exemplifying
	Or	1	Extending varying alternative
	But	3	Extending adversative
	So	1	Enhancing causal general
	Thus	1	Elaborating appositive exemplifying
	At least	1	Elaborating clarifying corrective
Multi words-unit	And	71	Extending additive positive
	Otherwise	1	Enhancing conditional negative
	Or	13	Extending varying alternative
	But	2	Extending adversative
	At once	1	Enhancing complex immediate
	Instead of	1	Extending varying replacive
	In fact	1	Elaborating clarifying verificative
	To sum up	1	Elaborating clarifying summative
	Thereby	1	Enhancing manner means
	As a result	1	Enhancing causal specific
	Indeed	1	Elaborating clarifying verificative
	First	1	Enhancing simple following
	Second	1	Enhancing simple following

Previous research theoretical framework	Even	2	Enhancing conditional concessive
	Also	3	Extending additive positive
	As a matter of fact	1	Elaborating clarifying verificative
	And	70	Extending additive positive
	Hence	1	Enhancing causal general
	However	1	Extending adversative
	Or	13	Extending varying replacive
	Also	5	Extending additive positive
	If		Enhancing conditional positive
	On the other hand		Extending adversative
Discussion and recommend ation	Even	1	Enhancing conditional concessive
	But	2	Extending adversative
	In fact	1	Elaborating clarifying verificative
	For this purpose	1	Enhancing causal specific
	And	60	Extending additive positive
	But	1	Extending adversative
	Also	4	Extending additive positive
	Indeed	1	Elaborating clarifying verificative
	Especially	1	Elaborating clarifying particularizing
	As a result	1	Enhancing causal specific
	Or	4	Extending varying replacive
	Hence	1	Enhancing causal general
	Yet	1	Extending adversative
	Thereby	1	Enhancing manner means
	Therefore	1	Enhancing causal general
	If	1	Enhancing conditional concessive
	Consequently	1	Enhancing causal general
	In this respect	1	Enhancing matter positive
	However	1	Enhancing adversative
	As a matter of fact	1	Elaborating clarifying verificative
Conclusion	And	11	Extending additive positive
	But	1	Extending adversative
	Even	1	Enhancing conditional concessive

The number of conjunctions used in this article is (326) distributed as a percentage for each scored conjunction: **and** 70, 55% **or** 9, 50% **also** 4, 60%. the lowest recorded conjunctions in this article are: **consequently, as a matter of fact** 0, 30%

7) Philosophy

Notes for a new millennium could heal their civilization arise from the ashes of modernity? (2020)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	If	1	Enhancing conditional positive
	Then	1	Enhancing conditional positive
Would be a naturalist who is not indifferent to the Wonder complexity	And	2	Extending additive positive
	Actually	6	Elaborating clarifying verificative
	And	48	Extending additive positive
	Or	4	Extending varying alternative
	Thus	9	Elaborating appositive exemplifying
	However	4	Extending adversative
	But	9	Extending adversative
	In other wards	1	Elaborating appositive expository
	If not	1	Enhancing conditional negative
	At least	3	Elaborating clarifying corrective
	At the same time	1	Enhancing simple simultaneous
	Thereby	1	Enhancing manner means
	Even	2	Enhancing conditional concessive
	Indeed	1	Elaborating clarifying verificative
	Moreover	1	Extending additive positive
	So	2	Enhancing causal general
	Hence	3	Enhancing causal general
	If	4	Enhancing conditional positive
	In other words	7	Elaborating appositive expository
Yet	4	Extending adversative	
Also	1	Extending additive positive	
That is	1	Elaborating appositive expository	

	Here	1	Enhancing matter positive
	There	1	Enhancing matter positive
	Nor	1	Extending additive negative
	That is to say	1	Elaborating appositive expository
	Indeed	1	Elaborating clarifying verificative
	Especially	1	Elaborating clarifying particularizing
	Despite	1	Enhancing conditional concessive
	Instead	1	Extending varying replacive
	For	1	Enhancing causal general
	For instance	1	Elaborating appositive exemplifying
Hence the first lesson would-be no modern naturalist must learn	And	16	Extending additive positive
	For	1	Enhancing causal general
	In fact	2	Elaborating clarifying verificative
	Indeed	3	Elaborating clarifying verificative
	Then	3	Enhancing conditional positive
	But	4	Extending adversative
	Especially	2	Elaborating clarifying particularizing
	So	1	Enhancing causal general
	Also	4	Extending additive positive
	However	2	Extending adversative
	In other words	2	Elaborating appositive expository
	Or	2	Extending varying alternative
	Even	1	Enhancing conditional concessive
	If	4	Enhancing conditional positive
	On the contrary	1	Extending adversative
	Thus	1	Elaborating appositive exemplifying
	Here	1	Enhancing matter positive
	Actually	2	Elaborating clarifying verificative
	That is	2	Elaborating appositive expository
	For	1	Enhancing causal general
Thereby	1	Enhancing manner means	
Instead	1	Extending varying replacive	

The number of conjunctions used in this article is (181) distributed as a percentage for each scored conjunction: **and** 35, 91% **but** 7, 73% **thus** 5, 52%. the lowest recorded conjunctions in this article are: **on the contrary**, **thereby** 0, 55%

An exploration of psychological contract violation and calling experienced by religious ministers (2020)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	2	Extending additive positive
Introduction	And	13	Extending additive positive
	But	1	Extending adversative
	Despite	1	Enhancing conditional concessive
	Also	2	Extending additive positive
Psychological contract	And	33	Extending additive positive
	Or	8	Extending varying alternative
	But	2	Extending adversative
	Even	3	Enhancing conditional concessive
	Despite	1	Enhancing conditional concessive
	Because of	1	Enhancing causal general
	That is	2	Elaborating appositive expository
	Thus	2	Elaborating appositive exemplifying
	Also	3	Extending additive positive
	However	1	Extending adversative
Research purpose and objectives	Later	2	Enhancing simple following
	And	8	Extending additive positive
	Also	2	Extending additive positive
	For	1	Enhancing causal general
Research design	Thus	1	Elaborating appositive exemplifying
	Because	1	Enhancing causal general
	And	8	Extending additive positive
	However	1	Extending adversative
	But	2	Extending adversative

Findings	Also	4	Extending additive positive
	Because of	1	Enhancing causal general
	And	69	Extending additive positive
	Then	1	Enhancing conditional positive
	But	4	Extending adversative
	Or	8	Extending varying alternative
	Even	5	Enhancing conditional concessive
	However	2	Extending adversative
	Because	1	Enhancing causal general
	Thus	5	Elaborating appositive exemplifying
	Furthermore	1	Extending additive positive
	If	1	Enhancing conditional positive
	Yet	1	Extending adversative
	Despite	1	Enhancing conditional concessive
	Actually	1	Elaborating clarifying verificative
	Though	1	Enhancing conditional concessive
	Conclusion	For	3
In the other words		1	Elaborating appositive expository
And		4	Extending additive positive
At least		1	Elaborating clarifying corrective
	Or	1	Extending varying alternative

The number of conjunctions used in this article is (217) distributed as a percentage for each scored conjunction: **and** 63, 13% **or** 7, 83% **also** 5, 06%. the lowest recorded conjunctions in this article are: **despite, actually, at least** 0, 46%

Research ethics in practice: challenges of using digital technology to embed the voices of children and young people within programs for fathers who use domestic violence (2021)

Items of the articles	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	10	Extending additive positive
	Or	1	Extending varying alternative
	Also	2	Extending additive positive

Introduction		But	2	Extending adversative	
		And	27	Extending additive positive	
		Or	3	Extending varying alternative	
		Also	1	Extending additive positive	
		In addition	1	Extending additive positive	
		For	1	Enhancing causal general	
		But	1	Extending adversative	
Research methods		And	35	Extending additive positive	
		Or	1	Extending varying alternative	
		Also	2	Extending additive positive	
		However	1	Extending adversative	
Reflection findings	and	And	64	Extending additive positive	
		But	2	Extending adversative	
		Also	3	Extending additive positive	
		However	4	Extending adversative	
		In addition	1	Extending additive positive	
		Then	1	Enhancing conditional positive	
		Or	5	Extending varying alternative	
		Therefore	2	Enhancing causal general	
		Because of	2	Enhancing causal general	
	Discussion		And	22	Extending additive positive
			But	2	Extending adversative
			Also	3	Extending additive positive
			However	1	Extending adversative
		First	1	Enhancing simple following	
		Second	1	Enhancing simple following	
		Or	1	Extending varying alternative	
		If	1	Enhancing conditional positive	
Conclusion			And	6	Extending additive positive
			Therefore	1	Enhancing causal general

The number of conjunctions used in this article is (211) distributed as shown in percentage for each remarked conjunction: **and** 87, 20% **also** 5, 21% **or** 5, 21%. the lowest recorded conjunctions in this article are: **first, second** 0, 47%

Ethical challenges in researching and telling the stories of recently deceased people (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions	
Abstract	And	5	Extending additive positive	
Introduction	But	1	Extending adversative	
	And	45	Extending additive positive	
	Also	4	Extending additive positive	
	But	3	Extending adversative	
	Even	1	Enhancing conditional concessive	
	That is	1	Elaborating appositive expository	
	Or	6	Extending varying alternative	
	However	2	Extending adversative	
The research and ethical issues	If	2	Enhancing conditional positive	
	And	40	Extending additive positive	
	Soon	1	Enhancing simple complex	
	Or	7	Extending varying alternative	
	Even	1	Enhancing conditional concessive	
	But	3	Extending adversative	
	Also	4	Extending additive positive	
	For example	1	Elaborating appositive exemplifying	
	In addition	1	Extending additive positive	
	In fact	1	Elaborating clarifying verificative	
	Therefore	2	Enhancing causal general	
	However	2	Extending adversative	
	Exploring the options and addressing the ethical issues	If	12	Enhancing conditional positive
		And	53	Extending additive positive
		Or	12	Extending varying alternative
However		3	Extending adversative	
For example		8	Elaborating appositive exemplifying	
Because		2	Enhancing causal general	
Even		2	Enhancing conditional concessive	
On the other hand		2	Extending adversative	
So		1	Enhancing causal general	

	But	3	Extending adversative
	Instead	1	Extending varying replacive
	Yet	1	Extending adversative
	Nor	1	Enhancing additive negative
	Because of	1	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	Therefore	1	Enhancing causal general
	For	1	Enhancing causal general
	At that time	1	Enhancing complex durative
	Despite	1	Enhancing conditional concessive
	Also	2	Extending additive positive
	However	2	Extending adversative
Concluding thoughts	And	14	Extending additive positive
	Also	3	Extending additive positive
	Instead	1	Extending varying replacive
	So	1	Enhancing causal general
	Therefore	1	Enhancing causal general
	Because	1	Enhancing causal general
	But	1	Extending adversative

The number of conjunctions used in this article is (268) distributed as shown in percentage for each remarked conjunction: **and** 58, 58% **if** 5, 22% **also** 4, 47%. the lowest recorded conjunctions in this article are: **instead, at that time** 0, 37%

Online educational research with middle adolescent populations: Ethical considerations and recommendations (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	3	Extending additive positive
Introduction	And	6	Extending additive positive
	Furthermore	1	Extending additive positive
Literature review	And	24	Extending additive positive
	For example	4	Elaborating appositive exemplifying

	Despite	1	Enhancing conditional concessive
	Or	8	Extending varying alternative
	Also	4	Extending additive positive
	However	2	Extending adversative
	If	3	Enhancing conditional positive
	Therefore	1	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	Then	1	Enhancing conditional concessive
	Especially	1	Elaborating clarifying particularizing
Method	And	10	Extending additive positive
	First	1	Enhancing simple following
	Also	1	Extending additive positive
	Second	1	Enhancing simple following
	Third	1	Enhancing simple following
	If	1	Enhancing conditional positive
Results	However	1	Extending adversative
	And	1	Extending additive positive
	For example	1	Elaborating appositive exemplifying
Discussion	And	10	Extending additive positive
	First	1	Enhancing simple following
	Or	3	Extending varying alternative
	Second	1	Enhancing simple following
	Third	1	Enhancing simple following
	Also	1	Extending additive positive
	For example	1	Elaborating appositive exemplifying
	Finally	1	Enhancing simple conclusive
Conclusion	And	8	Extending additive positive

The number of conjunctions used in this article is (105) distributed as a percentage for each scored conjunction: **and** 59, 04% **or** 10, 47% **also, for example** 5, 71%. the lowest recorded conjunctions in this article are: **despite, similarly** 0, 95%

Aggression among Slovak males training in martial arts versus other sports disciplines (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	For	1	Enhancing causal general
	However	1	Extending adversative
	Also	1	Extending additive positive
	And	8	Extending additive positive
	Or	1	Extending varying alternative
Introduction	Especially	1	Elaborating clarifying particularizing
	For	3	Enhancing causal general
	However	5	Extending adversative
	And	59	Extending additive positive
	Thus	2	Elaborating appositive exemplifying
	Even	2	Enhancing conditional concessive
	Though	2	Enhancing conditional concessive
	Also	6	Extending additive positive
	For example	1	Elaborating appositive exemplifying
	Or	9	Extending varying alternative
	Moreover	1	Extending additive positive
	On the other hand	3	Extending adversative
	Then	2	Enhancing conditional concessive
	Because	2	Enhancing causal general
	But	4	Extending adversative
	If	1	Enhancing conditional positive
	In fact	1	Elaborating clarifying verificative
	Similarly	1	Enhancing manner comparative
Materials and methods	And	12	Extending additive positive
	Or	10	Extending varying alternative
	However	1	Extending adversative
	But	1	Extending adversative
	For example	1	Elaborating appositive exemplifying
Results	At least	1	Elaborating clarifying corrective
	And	13	Extending additive positive
	First	1	Enhancing simple following
	Third	1	Enhancing simple following
	However	1	Extending adversative

Discussion and conclusion	Thus	1	Elaborating appositive exemplifying
	Next	1	Enhancing simple following
	Also	1	Extending additive positive
	And	40	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
	Or	4	Extending varying alternative
	Because	2	Enhancing causal general
	For	2	Enhancing causal general
	On the other hand	1	Extending adversative
	However	2	Extending adversative
	Similarly	1	Enhancing manner comparative
	Also	2	Extending additive positive
But	1	Extending adversative	

The number of conjunctions used in this article is (218) distributed as a percentage for each scored conjunction: **and** 60, 55% **or** 11% **also** 4, 58%. the lowest recorded conjunctions in this article are: **especially, at least, in fact** 0, 45%

Martial arts: travel and purpose (2021)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	In particular	1	Elaborating clarifying particularizing
	And	9	Extending additive positive
	Or	2	Extending varying alternative
Introduction	And	28	Extending additive positive
	Or	4	Extending varying alternative
	However	2	Extending adversative
	Also	2	Extending additive positive
	Especially	1	Elaborating clarifying particularizing
	Even	1	Enhancing conditional concessive
	In particular	1	Elaborating clarifying particularizing
	Otherwise	1	Enhancing conditional negative
	That is	1	Elaborating appositive expository

Teleology and pathway fight	And	37	Extending additive positive
	Or	12	Extending varying alternative
	But	3	Extending adversative
	Here	1	Enhancing matter positive
	Even	1	Enhancing conditional concessive
	However	2	Extending adversative
	Also	6	Extending additive positive
	Hence	1	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	In addition	1	Extending additive positive
	If	1	Enhancing conditional positive
	On the contrary	1	Extending varying replacive
	Then	1	Enhancing conditional positive
	For	1	Enhancing causal general
	At least	1	Elaborating clarifying corrective
Perfectionist attitude and different philosophies	And	21	Extending additive positive
	Or	6	Extending varying alternative
	Especially	1	Elaborating clarifying particularizing
	However	3	Extending adversative
	At least	1	Elaborating clarifying corrective
	But	2	Extending adversative
	Here	4	Enhancing matter positive
	Also	4	Extending additive positive
	Because	3	Enhancing causal general
	For	1	Enhancing causal general
	For example	1	Elaborating appositive exemplifying
	Even	1	Enhancing conditional concessive
	Indeed	1	Elaborating clarifying verificative
	That is	1	Elaborating appositive expository
	In fact	1	Elaborating clarifying verificative
	Instead	1	Extending varying replacive
	Otherwise	1	Enhancing conditional negative
	Conclusion	And	7
Or		1	Extending varying alternative

The number of conjunctions used in this article is (184) distributed as a percentage for each scored conjunction: **and** 55, 43% **or** 14, 67% **also** 6, 52%. the lowest recorded conjunctions in this article are: **on the contrary**, **otherwise** 0, 54%

Moral injury and the need to carry out ethically responsible research (2021)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	20	Extending additive positive
	Also	1	Extending additive positive
	For	1	Enhancing causal general
	Finally	1	Enhancing simple conclusive
	However	2	Extending adversative
	Yet	1	Extending adversative
	Moreover	1	Extending additive positive
	Thus	1	Elaborating appositive exemplifying
Safeguarding participant rights to self-determination and confidentiality	Or	2	Extending varying alternative
	And	11	Extending additive positive
	Or	7	Extending varying alternative
	Also	4	Extending additive positive
	For example	2	Elaborating appositive exemplifying
	If	2	Enhancing conditional positive
	Moreover	1	Extending additive positive
Non-maleficence and beneficence	Also	4	Extending additive positive
	Or	6	Extending varying alternative
	And	16	Extending additive positive
	If	1	Enhancing conditional positive
	For example	2	Elaborating appositive exemplifying
	For	2	Enhancing causal general
Suggestions for the best practice in moral injury research	Therefore	1	Enhancing causal general
	And	15	Extending additive positive
	Also	1	Extending additive positive
	Or	3	Extending varying alternative

The number of conjunctions used in this article is (108) distributed as a percentage for each scored conjunction: **and** 24, 07% **or** 17, 59% **also** 9, 25%. the lowest recorded conjunctions in this article are: **finally, therefore** 0, 92%

Community-based health care providers as research participant recruitment gatekeepers: ethical and legal issues in a real-world case example (2021)

Items of the article	Conjunctions	Number conjunctions	Meanings of conjunctions
Abstract	Or	1	Extending varying alternative
	And	5	Extending additive positive
Gatekeepers: a real-world case example and protection privacy	If	1	Enhancing conditional positive
	And	54	Extending additive positive
	If	4	Enhancing conditional positive
	In particular	3	Elaborating clarifying particularizing
	Or	18	Extending varying alternative
	Hence	2	Enhancing causal general
	However	1	Extending adversative
	Also	3	Extending additive positive
	But	2	Extending adversative
	Because	2	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	Though	1	Enhancing conditional concessive
	Even	1	Enhancing conditional concessive
	Indeed	1	Elaborating clarifying verificative
Lessons learned and recommendations	And	19	Extending additive positive
	However	2	Extending adversative
	Then	2	Enhancing conditional positive
	Or	7	Extending varying alternative
	For	2	Enhancing causal general
	If	8	Enhancing conditional positive
	But	1	Extending adversative
Conclusion	However	1	Extending adversative
	If	1	Enhancing conditional positive
	And	4	Extending additive positive

The number of conjunctions used in this article is (147) distributed as a percentage for each scored conjunction: **and** 55, 78% **or** 17, 68% **if** 9, 52%. the lowest recorded conjunctions in this article are: **similarly**, **indeed** 0, 68%

Features of the components of students' psychophysiological readiness to work as teachers
(2021)

Items of the article	Conjunctions	Number conjunctions	Meanings of conjunctions
Abstract	And	13	Extending additive positive
	Or	1	Extending varying alternative
	Also	1	Extending additive positive
	However	1	Extending adversative
	On the other hand	1	Extending adversative
Introduction	For	1	Enhancing causal general
	And	11	Extending additive positive
	Also	2	Extending additive positive
	Or	2	Extending varying alternative
	Because of	2	Enhancing causal general
	For example	1	Elaborating appositive exemplifying
	Therefore	1	Enhancing causal general
Methods	And	4	Extending additive positive
	And	22	Extending additive positive
Results	Also	4	Extending additive positive
	Therefore	1	Enhancing causal general
	But	5	Extending adversative
	Because	5	Enhancing causal general
	At the same time	1	Enhancing simple simultaneous
	If	1	Enhancing conditional positive
Discussion	And	14	Extending additive positive
	Or	2	Extending varying alternative
	Also	5	Extending additive positive
	For	1	Enhancing causal general
	Yet	1	Extending adversative

Conclusion	On the other hand	1	Extending adversative
	At the same time	1	Enhancing simple simultaneous
	And	7	Extending additive positive

The number of conjunctions used in this article is (122) distributed as a percentage for each scored conjunction: **and** 58, 19% **also** 9, 83% **because** 4, 91%. the lowest recorded conjunctions in this article are: **therefore, yet** 0, 81%

8) Social Science

Guidelines for the Treatment of Latent Tuberculosis Infection: Recommendations from the National Tuberculosis Controllers Association and CDC, 2020 (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Summary	And	11	Extending additive positive
	Last	1	Enhancing simple conclusive
	Or	3	Extending varying alternative
	Then	1	Enhancing conditional positive
	In addition	1	Extending additive positive
	At least	1	Elaborating clarifying corrective
	But	1	Extending adversative
Introduction	And	9	Extending additive positive
	If	1	Enhancing conditional positive
	Because of	1	Enhancing causal general
	Then	1	Enhancing conditional positive
	In addition	1	Extending additive positive
	Or	1	Extending varying alternative
Methods, evidence research, recommendations, and results	And	39	Extending additive positive
	Then	1	Enhancing conditional positive
	Or	7	Extending varying alternative
	If	7	Enhancing conditional positive
	However	1	Extending adversative
	Because	2	Enhancing causal general
	At least	2	Elaborating clarifying corrective

Preferred regimens	Hence	1	Enhancing causal general
	Also	1	Extending additive positive
	But	1	Extending adversative
	And	44	Extending additive positive
	Despite	1	Enhancing conditional concessive
	Because of	4	Enhancing causal general
	Or	11	Extending varying alternative
	But	2	Extending adversative
	If	2	Enhancing conditional positive
	Also	4	Extending additive positive
	Therefore	1	Enhancing causal general
	Because	1	Enhancing causal general
	In addition	1	Extending additive positive
	If	1	Enhancing conditional positive
	However	2	Extending adversative
Other Considerations and discussion	First	1	Enhancing simple following
	Second	1	Enhancing simple following
	Third	1	Enhancing simple following
	Finally	1	Enhancing simple conclusive
	And	13	Extending additive positive
	Also	1	Extending additive positive
	But	1	Extending adversative
	Or	2	Extending varying alternative

The number of conjunctions used in this article is (194) distributed as a percentage for each scored conjunction: **and** 56, 70% **or** 12, 37% **if** 5, 67%. the lowest recorded conjunctions in this article are: **last, despite** 0, 51%

CDC Recommendations for Hepatitis C Screening Among Adults — the United States, 2020
(2020)

Items of the Conjunctions article	Number conjunctions	of Meanings of conjunctions
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Summary	And	4	Extending additive positive
	Or	3	Extending varying alternative
	At least	1	Elaborating clarifying corrective
Introduction	Because	1	Enhancing causal general
	And	9	Extending additive positive
	Or	2	Extending varying alternative
Epidemiology and virus description	And	48	Extending additive positive
	Or	29	Extending varying alternative
	Because of	4	Enhancing causal general
	Also	3	Extending additive positive
	But	3	Extending adversative
	And	6	Extending additive positive
	However	1	Extending adversative
	Later	1	Enhancing simple following
	At least	1	Elaborating clarifying corrective
	However	1	Extending adversative
	Therefore	1	Enhancing causal general
	If	1	Enhancing conditional positive
	Despite	1	Enhancing conditional concessive
	And	23	Extending additive positive
	Methods	Therefore	1
In addition		1	Extending additive positive
Or		2	Extending varying alternative
However		1	Extending adversative
Literature review	And	38	Extending additive positive
	Or	17	Extending varying alternative
	If	6	Enhancing conditional positive
	Because	2	Enhancing causal general
	First	1	Enhancing simple following
	Second	1	Enhancing simple following
	Finally	1	Enhancing simple following
	For example	2	Elaborating appositive exemplifying
	In addition	1	Extending additive positive
	But	1	Extending adversative

Cost-Effectiveness Considerations and testing consideration	And	55	Extending additive positive
	Or	24	Extending varying alternative
	If	3	Enhancing conditional positive
	Also	4	Extending additive positive
	But	2	Extending adversative
	Similarly	1	Enhancing manner comparative
	Thereby	1	Enhancing manner means
	Therefore	2	Enhancing causal general
	At least	1	Elaborating clarifying corrective
	At the time	1	Enhancing complex durative
	Because	1	Enhancing causal general
	However	1	Extending adversative
	Later	2	Enhancing simple following
	Because of	1	Enhancing causal general
	Therefore	1	Enhancing causal general
Future directions	And	5	Extending additive positive
	Or	2	Extending varying alternative
	Finally	1	Enhancing simple conclusive
Conclusion	And	4	Extending additive positive
	Or	1	Extending varying alternative

The number of conjunctions used in this article is (331) distributed as a percentage for each scored conjunction: **and** 58, 61% **or** 24, 16% **if** 2, 71%. the lowest recorded conjunctions in this article are: **thereby, at the time** 0, 30%

Assessing Solid Organ Donors and Monitoring Transplant Recipients for Human Immunodeficiency Virus, Hepatitis B Virus, and Hepatitis C Virus Infection —U.S. Public Health Service Guideline, 2020 (2020)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Summary	And	18	Extending additive positive
	Because of	1	Enhancing causal general

	Or	4	Extending varying alternative
	But	1	Extending adversative
Introduction	In addition	2	Extending additive positive
	And	43	Extending additive positive
	Or	19	Extending varying alternative
	Even	1	Enhancing conditional concessive
	If	3	Enhancing conditional positive
	Despite	1	Enhancing conditional concessive
	Also	1	Extending additive positive
	Finally	1	Enhancing simple conclusive
Methods	And	78	Extending additive positive
	Or	34	Extending varying alternative
	Because of	2	Enhancing causal general
	Despite	1	Enhancing conditional concessive
	First	1	Enhancing simple following
	Second	2	Enhancing simple following
	In addition	3	Extending additive positive
	Therefore	1	Enhancing causal general
	Risk assessment of living and deceased donors	And	99
Or		48	Extending varying alternative
Because		6	Enhancing causal general
Because of		1	Enhancing causal general
But		6	Extending adversative
In addition		4	Extending additive positive
At least		2	Elaborating clarifying corrective
For example		1	Elaborating appositive exemplifying
Then		1	Enhancing conditional positive
If		5	Enhancing conditional positive
At the time		1	Enhancing complex durative
Even		1	Enhancing conditional concessive
For example		1	Elaborating appositive exemplifying
Also		3	Extending additive positive
Despite		1	Enhancing conditional concessive

The number of conjunctions used in this article is (419) distributed as a percentage for each scored conjunction: **and** 57, 27% **or** 26, 37% **in addition** 2, 14%. the lowest recorded conjunctions in this article are: **first**, **second** 0, 23%

Generalized Markovian Quantity Distribution Systems: Social Science Applications (2020)

Items of the Conjunctions article		Number of conjunctions	of Meanings of conjunctions
Abstract	And	3	Extending additive positive
	Or	1	Extending varying alternative
	For example	1	Elaborating appositive exemplifying
Markov chain model	And	4	Extending additive positive
	Or	2	Extending varying alternative
	Similarly	1	Enhancing manner comparative
Network topology	And	11	Extending additive positive
	That is	2	Elaborating appositive expository
	In particular	1	Elaborating clarifying particularizing
	Or	3	Extending varying alternative
	If	3	Enhancing conditional positive
	Otherwise	3	Enhancing conditional negative
	At least	2	Elaborating clarifying corrective
	In the case	2	Enhancing conditional positive
Peculiar restriction	And	12	Extending additive positive
	In the case	1	Elaborating clarifying corrective
	In particular	1	Elaborating clarifying particularizing
	If	1	Enhancing conditional positive
	Hence	1	Enhancing causal general
Contribution	Or	1	Extending varying alternative
	And	2	Extending additive positive
	Or	1	Extending varying alternative
	In particular	2	Elaborating clarifying particularizing
	First	1	Enhancing simple following

Classic Markov model	Second	1	Enhancing simple following
	Third	1	Enhancing simple following
	If	1	Enhancing conditional positive
	And	5	Extending additive positive
	Or	2	Extending varying alternative
	Here	1	Enhancing matter positive
	Therefore	1	Enhancing causal general
	In fact	1	Elaborating clarifying verificative
	If	2	Enhancing conditional positive
	And	6	Extending additive positive
Strongly connected system	Or	2	Extending varying alternative
	Thus	1	Elaborating appositive exemplifying
	However	1	Extending adversative
	For instance	1	Elaborating appositive exemplifying
	Also	2	Extending additive positive
	If	2	Enhancing conditional positive
	Then	1	Enhancing conditional positive
	For instance	1	Elaborating appositive exemplifying
	At least	1	Elaborating clarifying corrective
	That is	1	Elaborating appositive expository
Network with multiple Sinks Components	In this case	1	Elaborating clarifying corrective
	And	19	Extending additive positive
	Then	1	Enhancing conditional positive
	Because	1	Enhancing causal general
	That is	4	Elaborating appositive expository
	Hence	1	Enhancing causal general
	Similarly	1	Enhancing manner comparative
	If	5	Enhancing conditional positive
	In particular	2	Elaborating clarifying particularizing
	But	1	Extending adversative
Or	2	Extending varying alternative	
Here	1	Enhancing matter positive	
And	32	Extending additive positive	
Also	3	Extending additive positive	

Generalization	Hence	3	Enhancing causal general
	On the other hand	1	Extending adversative
	Because	3	Enhancing causal general
	If	10	Enhancing conditional positive
	Furthermore	1	Extending additive positive
	Thus	2	Elaborating appositive exemplifying
	Then	5	Enhancing conditional positive
	Or	5	Extending varying alternative
Discussion	For example	2	Elaborating appositive exemplifying
	And	5	Extending additive positive
	Also	2	Extending additive positive
	Especially	1	Elaborating clarifying particularizing

The number of conjunctions used in this article is (210) distributed as a percentage for each scored conjunction: **and** 47, 14% **if** 11, 42% **or** 9, 52%. the lowest recorded conjunctions in this article are: **similarly, in fact** 1, 42%

Prevention and Control of Seasonal Influenza with Vaccines: Recommendations of the Advisory Committee on Immunization Practices — the United States, 2020–21 Influenza Season (2020)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Summary	And	16	Extending additive positive
	Or	2	Extending varying alternative
	First	1	Enhancing simple following
	Second	1	Enhancing simple following
	Also	1	Extending additive positive
Introduction	Or	2	Extending varying alternative
	However	3	Extending adversative
	And	29	Extending additive positive
	Also	3	Extending additive positive
	Despite	1	Enhancing conditional concessive
Methods	And	65	Extending additive positive
	Or	32	Extending varying alternative

	But	5	Extending adversative
	If	3	Enhancing conditional positive
	However	4	Extending adversative
	Also	2	Extending additive positive
	Now	1	Enhancing simple simultaneous
Recommendations for the Use of Influenza Vaccines	And	25	Extending additive positive
	Later	3	Enhancing simple following
	Or	8	Extending varying alternative
	However	4	Extending adversative
	Because	3	Enhancing causal general
	Moreover	1	Extending additive positive
	At least	2	Elaborating clarifying corrective
	Also	2	Extending additive positive
	Even	1	Enhancing conditional concessive
	If	1	Enhancing conditional positive
Guidance for Use in Specific Populations and Situations	However	14	Extending adversative
	And	116	Extending additive positive
	Or	62	Extending varying alternative
	Also	1	Extending additive positive
	But	5	Extending adversative
	Because	2	Enhancing causal general
	If	12	Enhancing conditional positive
	Alternatively	1	Extending varying alternative
	Even	1	Enhancing conditional concessive
	Because of	3	Enhancing causal general
	Moreover	1	Extending additive positive
	Therefore	2	Enhancing causal general
	Otherwise	1	Enhancing conditional negative
	In particular	1	Elaborating clarifying particularizing
Influenza	Vaccine		Extending additive positive

Composition and Available Vaccines	er			Extending adversative
	ver			Extending additive positive
				Extending varying alternative
				Extending varying replacive
				Enhancing conditional positive
				Enhancing simple following
		e of		Enhancing causal general
				Enhancing complex terminal
			Extending additive negative	
Storage and Handling of Influenza Vaccines	And			tending additive positive
	In addition			tending additive positive
	Also			tending additive positive
	If			hancing conditional positive
	Then			Enhancing conditional positive
Additional Sources of Information Regarding Influenza Vaccines	And	6		ditive positive
	In addition	2		ditive positive
	Or	3		rying alternative

The number of conjunctions used in this article is (572) distributed as a percentage for each scored conjunction: **and** 55, 59% **or** 23, 95% **if** 4, 19%. the lowest recorded conjunctions in this article are: **despite, alternatively, later** 0, 17%

Opioid Prescribing Behaviors —Prescription Behavior Surveillance System, 11 States, 2010–2016 (2020)

Items of the article	Conjunctions	Number conjunctions	Meanings of conjunctions
Abstract	And	13	Extending additive positive
	Or	3	Extending varying alternative
Introduction	And	13	Extending additive positive
	Yet	1	Extending adversative

Methods	However	1	Extending adversative
	Or	5	Extending varying alternative
	Thus	1	Elaborating appositive exemplifying
	And	28	Extending additive positive
	Or	5	Extending varying alternative
	Because of	4	Enhancing causal general
	Thus	1	Elaborating appositive exemplifying
	At least	1	Elaborating clarifying corrective
	However	1	Extending adversative
	Results, discussion, and limitations	Because	2
Also		1	Extending additive positive
And		37	Extending additive positive
Because of		1	Enhancing causal general
Also		2	Extending additive positive
Moreover		2	Extending additive positive
Also		2	Extending additive positive
Or		2	Extending varying alternative
However		2	Extending adversative
Therefore		1	Enhancing causal general
But		4	Extending adversative
At least		1	Elaborating clarifying corrective
First		1	Enhancing simple following
Or		4	Extending varying alternative
Second		1	Enhancing simple following
Third		1	Enhancing simple following
Fourth		1	Enhancing simple following
Fifth		1	Enhancing simple following
So		1	Enhancing causal general
Sixth		1	Enhancing simple following
Finally		1	Enhancing simple conclusive
In fact		1	Elaborating clarifying effective
Conclusion	Even	1	Enhancing conditional concessive
	And	5	Extending additive positive

However	1	Extending adversative
Because	1	Enhancing causal general
or	2	Extending varying alternative

The number of conjunctions used in this article is (157) distributed as a percentage for each scored conjunction: **and** 61, 14% **or** 13, 37% **also, however** 3, 18%. the lowest recorded conjunctions in this article are: at least, in fact 1, 91%

National Toxic Substances Incidents Program —the Nine States, 2010–2014 (2020)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	41	Extending additive positive
	For example	1	Elaborating appositive exemplifying
	Or	4	Extending varying alternative
	In addition	1	Extending additive positive
	Also	1	Extending additive positive
	However	2	Extending adversative
Introduction	And	20	Extending additive positive
	In particular	1	Elaborating clarifying particularizing
	Or	2	Extending varying alternative
	Because	1	Enhancing causal general
	However	1	Extending adversative
	And	63	Extending additive positive
Data source, methods, and results	Because of	1	Enhancing causal general
	If	1	Enhancing conditional positive
	At least	1	Elaborating clarifying corrective
	Or	24	Extending varying alternative
Case definition and variables	Therefore	1	Enhancing causal general
	If	4	Enhancing conditional positive
	However	1	Extending adversative
	Despite	1	Enhancing conditional concessive
	In addition	1	Extending additive positive
	And	70	Extending additive positive

Chemicals, response action, and industry	Or	8	Extending varying alternative
	For example	1	Elaborating appositive exemplifying
	At the time	1	Enhancing complex durative
	But	1	Extending adversative
	Also	3	Extending additive positive
	Despite	1	Enhancing conditional concessive
	For example	1	Elaborating clarifying exemplifying
	If	1	Enhancing conditional positive
	And	26	Extending additive positive
Public health implication	In addition	1	Extending additive positive
	Nevertheless	1	Enhancing conditional concessive
	Because of	1	Enhancing causal general
	For example	1	Elaborating appositive exemplifying
	Also	1	Extending additive positive
	First	1	Enhancing simple following
	And	4	Extending additive positive
Limitation	Therefore	1	Enhancing causal general
	Second	1	Enhancing simple following
	Because	1	Enhancing causal general
	Finally	1	Enhancing simple conclusive
	If	1	Enhancing conditional positive
Conclusion	And	6	Extending additive positive
	Or	1	Extending varying alternative

The number of conjunctions used in this article is (307) distributed as a percentage for each scored conjunction: **and** 74, 67% **or** 12, 66% **if** 2, 27%. the lowest recorded conjunctions in this article are: **in particular**, **despite** 0, 32%

Early Identification of Autism Spectrum Disorder among Children Aged 4 Years —Early Autism and Developmental Disabilities Monitoring Network, Six Sites, United States, 2016 (2020)

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	12	Extending additive positive
	Or	1	Extending varying replacive

n	Introductio	But	1	Extending adversative
		And	14	Extending additive positive
		Also	4	Extending additive positive
		Because	1	Enhancing causal general
		In addition	1	Extending additive positive
		Or	2	Extending varying replacive
n	Methods	And	24	Extending additive positive
		Or	7	Extending varying replacive
	Introductio	Also	2	Extending additive positive
		If	6	Enhancing conditional positive
	Methods	Because of	3	Enhancing causal general
				Extending additive positive
				Extending adversative
Discussion		However	1	Extending adversative
		In addition	1	Extending additive positive
		Therefore	1	Enhancing causal general
		And	13	Extending additive positive
		Because	3	Enhancing causal general
		If	1	Enhancing conditional positive
		Also	1	Extending additive positive
		Or	1	Extending varying replacive
Limitation		First	1	Enhancing simple following
		And	12	Extending additive positive
		Second	1	Enhancing simple following
		Also	1	Extending additive positive
		But	1	Extending adversative
		However	5	Extending adversative
		Because of	2	Enhancing causal general
		Or	1	Extending varying replacive
Conclusion		In addition	1	Extending additive positive
		However	1	Extending adversative

The number of conjunctions used in this article is (143) distributed as shown in percentage for each remarked conjunction: **and** 65, 03% **or** 8, 39% **also** 5, 59%. the lowest recorded conjunctions in this article are: **first**, **second** 0, 69%

Table 89: *Prevalence of Autism Spectrum Disorder among Children Aged 8 Years — Autism and Developmental Disabilities Monitoring Network, 11 Sites, United States, 2016 (2020)*

Items of the article	Conjunctions	Number conjunctions	of Meanings of conjunctions
Abstract	And	20	Extending additive positive
	Or	3	Extending varying alternative
	But	1	Extending adversative
	However	1	Extending adversative
	Also	1	Extending additive positive
Introduction		17	Extending additive positive
		1	Extending adversative
		1	Extending varying alternative
		1	Enhancing causal general
Methods		20	Extending additive positive
		17	Extending varying alternative
		5	Enhancing conditional positive
		3	Enhancing conditional negative
		2	Extending additive positive
		1	Elaborating clarifying corrective
		2	Enhancing causal general
Results		4	Extending varying alternative
		26	Extending additive positive
		2	Extending additive positive
		1	Extending adversative
		1	Elaborating clarifying corrective
		1	Extending additive positive
Discussion		22	Extending additive positive
		6	Extending varying alternative
		2	Enhancing simple following
		1	Extending adversative

		1	Elaborating appositive exemplifying
		2	Enhancing conditional positive
	tion	1	Extending additive positive
		1	Enhancing conditional concessive
	tance	1	Elaborating appositive exemplifying
Future directions and limitations	t	1	Elaborating clarifying corrective
		1	Enhancing simple following
		7	Extending additive positive
		2	Extending varying alternative
		1	Enhancing simple following
		1	Extending additive positive
	er	1	Extending adversative
	1	Enhancing simple conclusive	
Conclusion		11	Extending additive positive
		1	Extending additive positive

The number of conjunctions used in this article is (105) distributed as a percentage for each scored conjunction: **and** 56, 58% **or** 16, 09% **also, if** 3, 41%. the lowest recorded conjunctions in this article are: because of, at least 3, 80%

Racial and Gender Disparities among Evicted Americans (2020)

Items of the article	Conjunctions	Number of conjunctions	Meanings of conjunctions
Abstract	And	7	Extending additive positive
	Also	1	Extending additive positive
Forced dislocation	And	16	Extending additive positive
	However	1	Extending adversative
	Yet	1	Extending adversative
Data and method	And	42	Extending additive positive
	Or	4	Extending varying replacive
	At least	1	Elaborating clarifying corrective
	However	1	Extending adversative
	But	1	Extending adversative
	Also	1	Extending additive positive

Results and discussion	Instead	1	Extending varying replacive
	First	2	Enhancing simple following
	Second	2	Enhancing simple following
	Third	1	Enhancing simple following
	Because	1	Enhancing causal general
	Even	1	Enhancing conditional concessive
	For example	1	Elaborating appositive exemplifying
	Thereby	1	Enhancing manner means
	And	65	Extending additive positive
	Or	4	Extending varying replacive
	However	1	Extending adversative
	But	3	Extending adversative
	Especially	1	Elaborating clarifying particularizing
	Also	3	Extending additive positive
	Then	1	Enhancing conditional positive
	First	2	Enhancing simple following
	Second	2	Enhancing simple following
	Yet	2	Extending adversative
	Because	1	Enhancing causal general
	Thus	1	Elaborating appositive exemplifying
Last	1	Enhancing simple conclusive	
In addition	1	Extending additive positive	

The number of conjunctions used in this article is (173) distributed as shown in a percentage for each remarked conjunction: **and** 75, 14% **or** 4, 62% **also** 2, 89%. the lowest recorded conjunctions in this article are: thereby, because 1, 73%