



Accepted: April 2024

Published: June 2024

**Research Article****Functional Analysis of Frame Markers in Students' Essays: An Across Disciplinary Study**Azadeh Mallaki<sup>1</sup>

Department of English Language Teaching, Bushehr Branch, Islamic Azad University, Bushehr, Iran.

Seyed Foad Ebrahimi<sup>2\*</sup> (Corresponding Author)

Department of English Language Teaching, Shadegan Branch, Islamic Azad University, Shadegan, Iran.

Mohammad Taghi Farvardin<sup>3</sup>

Department of English Language Teaching, Ahvaz Branch, Islamic Azad University, Ahvaz, Iran.

**ABSTRACT**

Frame markers are a broad interactive subcategory, displaying the writer-reader relationships. They can be characterized as items to frame information about discourse components and functioning for argument sequencing, labelling, predicting, and shifting while offering readers more discourse clarity. How to make good use of frame markers becomes one of the focuses in English writing classes. Thus, this study investigates the frequency and functions of frame markers in academic students' essays. To this end, 56 students' essays (totally 170.760 words) were selected from the Michigan Corpus of Upper-Level Student Papers (MICUSP), belonging to Philosophy and Psychology disciplines. The corpus was analysed considering Hyland's (2005) model of interactive metadiscourse into frequency and functions. The results showed that the frame markers were frequent enough to be considered in teaching writing genres. Besides, frame markers exhibited a significantly essential way, allowing writers organize their discourse according to certain audience and enabling them to observe the argument coherence and directing their thoughts toward what the author wished. Disciplinary differences concerning frequencies, types and functions of the frame markers were reported. The study results could directly be used in the syllabus designed for writing academic genres.

**Keywords:** Philosophy; Psychology, Frame Markers, Metadiscourse Marker, MICUSP

## 1. INTRODUCTION

Based on (Hyland, 2000; Hyland, 2010), Metadiscourse refers to how writers deliver their intention to the audience while highlighting their stance and mind frame, assisting the readers in discovering the writer's viewpoint (Kadir et al., 2020). The expression behind the writer's text is also conveyed by metadiscourse (Lee & Deakin, 2016), enhancing the writer's expressions, which can contribute practically and appropriately to text analysis. Certain word and phrase usages by the writer become comprehensible by the readers through text analysis utilizing metadiscourse. Metadiscourse, therefore, appears to have found its time. As Hyland (2005) proposes, metadiscourse is used to negotiate interpersonal meaning in discourse, assisting writers in expressing their viewpoints and demonstrating interactions with the readers in certain discourse communities. In modern discourse analysis, pragmatics, and language instruction, metadiscourse reflects how writers/speakers engage readers and listeners through their language use. This interaction evolved from a dual objective, reflecting the intention to perceive the language-context association and applying this understanding to language and literacy instruction. Although many academics and instructors believe it to be theoretically rich, it is not without definitional and analytical issues. As Hyland (2005) asserted, metadiscourse regards writing as a social involvement, reflecting the author's recognition of the evolving text as discourse: texts are used to create persuading and comprehensible prose in a specific social context. Social interaction comes from organizing the author's thoughts, the audience's beliefs, and interacting appropriately with the reader.

The viewpoint of writing as the writer-readers social and communicative interaction assumes that metadiscourse focuses on the content and attitude presentation towards the intended audience. Metadiscourse reflects an intuitively attractive concept, providing inspiration to compile under one heading various means a writer uses to categorize the text, engage the audience, and reveal viewpoints toward the material and the reader. Academic writing mainly concerns informing rather than entertaining, which needs to be appropriate and formal but not pretentious. In academic settings, writers write for various purposes, including reading responses, books or literature reviews, argumentative studies, empirical research papers, grant proposals, abstracts for conferences, commentaries, memoranda, etc., each possessing a particular purpose, organization, and linguistic characteristics (Fang, 2021). It is also noteworthy that academic writing helps produce, modify, disseminate, evaluate, update, teach, and learn knowledge within a discipline. Managing academic writing provides the writer with the capital, power, and mechanisms for knowledge and identity construction, disciplinary principles, social positioning, and professional growth. Within academic papers, whatever the attitude towards the issue or the statement set forth, access to sufficient evidence seems impossible to support the validity of something, necessitating an all-inclusive and attentive approach that also takes exceptions into account (Gillett et al., 2009).

The model introduced by Hyland (2005) defines FMs as items that enhance framing knowledge of the discourse components and functioning, providing a clear discourse for the audience by argument sequencing, labelling, predicting, and shifting. The four proposed FM subcategories focus on sequencing, stage labelling, goal announcement, and argument shifting. Thus, FMs contribute to sequencing parts of the text or internal ordering of arguments, usually representing straightforward additive relationships (first, then, next, etc.),

highlighting the text steps (to summarize, in sum, etc.), goal announcement for each discourse (I argue here, my purpose is, etc.), and finally indicating the topic shift (well, right, OK, now, etc.) (Hyland, 2005). FMs distinguish text boundaries or various textural structures. Like transitional markers, FMs have an internal nature to the text, identifying or ordering arguments within the text instead of events within the time frame. FM subcategories present the required framing knowledge of the discourse presentation.

- Example 1:

*After investigating the diet details and exercise importance, we will **next** provide a summarized review of the main elements.*

Based on this example, the word **next** presents the audience with the order of the information supposed to be provided rather than elements within the time frame, consequently forming a frame metadiscourse marker.

The term ‘frame markers’ reflects framing the propositional material to attract the readers. FMs help writers add beauty to their writing, convey their goals, and produce an appropriate sequence of ideas.

Some FMs represent specific semantic categories of linking adverbials, comprising addition and numeration through sequencing and summation by stage labelling FMs, with **first** and **in sum** as two examples. Regarding syntactic forms, FMs proposed in Hyland’s model comprise adverbs and adverb, propositional, and noun phrases (first and foremost, in conclusion, and purpose, respectively) while also encompassing clauses like to conclude, and sentence stems (such as in this part, would like to). FMs are assumed to serve as cohesive devices contributing to the coherence establishment. FMs also ensure the text readability through logical connections among ideas within the text, consequently enhancing the cohesion expected throughout the text (Vogel & Interaction, 2008, p. 120).

The potentially important role of metadiscourse and frame markers raises the assumption of requiring a sophisticated process to obtain the essential skills for a good writer. The application of metadiscourse markers seems crucial to assist academic writers throughout their writing and enable them to skillfully differentiate opinion from fact. In academic writing, FMs exhibit a significantly essential way through allowing writers to organize their discourse according to certain audience and enabling them to observe the argument's coherence and directing their thoughts toward the author’s intention. English academic writing expects writers to perform competently in taking a certain viewpoint toward the matters raised within the text and to others holding viewpoints on such matters (Hyland, 2005, p. 175), ensuring such competency by the FM application. Hence, the current paper investigates FMs, assuming that coherent text construction requires effective metadiscourse usage.

Universities and organizations mainly conduct research in historically-centred and greatly arbitrarily established disciplines (Campbell, 2014). Nevertheless, emerging phenomena can hardly integrate into disciplinary limits, necessitating cross-disciplinary studies that involve corresponding cooperation (Hall et al., 2008). Learning and instruction within higher education is a good example of a research area comprising complicated phenomena that one discipline alone cannot address comprehensively. Higher education programs provide students with the professional information required for their future professional practices (Blömeke et al., 2015). Thus, this paper examines FMs' frequency and

function within argumentative and evaluative students' academic essays. The results will provide a pattern for using frame markers in teaching writing skills to students from these disciplines. The paper answers these research questions:

1. How frequent are FMs in academic essays written by Philosophy and Psychology students?
2. What are the functions of FMs in academic essays written by Philosophy and Psychology students?
3. What are the most and the least used FMs and functions in academic essays written by Philosophy and Psychology students?

## **2. LITRATURE REVIEW**

The purpose of this literature review is twofold: Defining Systemic Functional Grammar, and providing comprehensive reviews of related previous studies and discussing their relevant findings. Systemic functional grammar (SFG) or linguistics (SFL) forms part of systematic linguistics, a comprehensive social semiotic approach to language. Systematic linguistics views language as a network of systems whose interrelations make meaning. Here, 'functional' highlights the focus on meaning, despite formal grammar that addresses word classes, including nouns and verbs, failing to move beyond individual clauses. SFG primarily concerns the choices the writers and speakers are provided with by grammar, connecting what the speakers or writers intend to convey with the language's concrete forms. Such choices are commonly considered in connection with the language content or structure. Metafunction reflects language function as a meaning-making resource and has three categories of ideational, interpersonal, and textual metafunction. As Halliday (2007) stated, ideational function highlights the “content function of language” analysed utilizing transitivity. This function addresses the events, situations, and all actions, processes, and entities involved (Halliday, 1985), representing the experiences of phenomena within the outside world (Halliday, 1973, p. 106). As Fowler (1986) emphasizes, linguistic codes express the author's ideologies because of their neutrality and social and cultural impacts on them.

Collaboration in the language function is represented by interpersonal metafunction (Halliday, 2007, p. 184), addressing the associations of the users or characters through pronouns, moods, modalities, and formality degrees. Muir (1972) and Halliday (1981) state that mood includes modality, speech function, and tone. Mood covers the Subject and Finite, whereas other clause components make up residue. Different mood types represent declaration, interrogation (yes-no and wh-types), imperative, and exclamation. Each mood addresses speech acts, including statements, questions, directives, and exclamations. Various speech acts also play different language functions, including information exchange (statements), searching information (questions), requesting service (directives), and demonstrating attitudes (exclamations).

Textual metafunction reflects the ideational and interpersonal meaning realization through structure and cohesion (Halliday, 2007), consequently addressing the information organization. The theme and rheme of the clause are addressed through the structure, highlighting the message's “point of departure” within the clause (Halliday, 1994) and covering the textual message (Halliday, 1981). Still, rheme covers other components in the clause and occupies the non-initial position, despite the theme, which takes the initial position.

Nevertheless, these conditions may not hold when the clause comprises “dummy it.” Theme can be marked or unmarked, reflecting the unusual and common clause structures, respectively. Moreover, the textual function also includes cohesion, the “non-structural text-forming relations”(Hasan et al., 1976). Hasan et al. (1976) investigated various cohesive devices, including ellipsis, substitution, referencing, conjunction, and lexical cohesion.

Metadiscourse is a cover term encompassing various discourse devices that facilitate the text-context relationship, enabling writers to compose texts, convey viewpoints, and attract audience (Hyland, 2005), revealing their importance in persuasive writing. Metadiscourse has not been defined in detail, leading to its examination through various definitions (Bunton, 1999; Crismore et al., 1993; Hyland, 2000; Hyland & Tse, 2004; Kopple, 1985; Milne, 2003). According to Hyland and Tse (2004), this concept reflects the ways enabling the writer-reader communication within a specific discourse to reveal their viewpoint of the text content and audience. The term is further defined as self-reflective linguistic materials highlighting the text development, the author, and potential audience (Hyland & Tse, 2004, p. 156). The writers and their readers involve actively throughout the writing process since writing reflects ‘social engagement’ (Hyland & Tse, 2004, p. 156). According to Hyland (2005), the local and global text organization is structured by FMs, covering a range of formulaic expressions like all in all, to begin with, first of all, last but not least, etc. Bhatia (1993) and Cheung (1993) emphasized FMs’ critical contribution to persuasive purposes (as cited in Hyland (2005)) through four subcategories: sequencing (first, to begin with, finally, etc.), stage labelling (at this point, in conclusion, etc.), goal announcement (aim, goal, there are some reasons, etc.), and argument shifting (OK, now, well, back to, etc.). According to Hyland (2005, p. 51), FMs can also entail announcement phrases expressing the writing stages (e.g., Now you have to and My purpose here is to).

The following paragraphs represent the overview of research and studies related to the present paper.

Assassi and Merghmi (2023) identified interactive and interactional metadiscourse markers concerning frequency and function in research papers' abstract sections in applied linguistics compiled by Algerian, Saudi, and Native researchers. They selected twenty research papers from every group using random sample selection, leading to a total of 60 papers as the research corpus. AntConc.3.2.4 was then utilized for qualitative and quantitative analyses under Hyland’s categorization of metadiscourse markers. This research used the abstracts produced by native writers as a benchmark to respond the primary research question regarding the frequency of metadiscourse device application by Algerians and Saudis compared to Native researchers. The results revealed the closeness of Algerian and native abstracts concerning the use of endophorics, MFs, code glosses, hedges, attitude markers, and self-mentions. The study also confirmed the significant distribution of FMs, although abstracts written by Saudi writers showed more closeness to the benchmark only in transition and engagement markers. Prasetyanti et al. (2023) investigated metadiscourse markers in a targeted sample, including 100 English introductory chapters of a dissertation by native English speakers and Indonesian writers utilizing Hyland’s classification. Random sampling was conducted to select the samples published during 2000-2019. The findings highlighted a higher frequency of transitions, FMs, and evidential in linguistics than in Education from the

interactive metadiscourse category. As shown, endophoric markers and code glosses had a nearly similar frequency. Nevertheless, the findings of the interaction metadiscourse corpora revealed more use of hedges, boosters, and self-mentions in linguistics than education. Engagement markers had a higher frequency in the linguistic texts' discussion sections, but the two disciplines did not behave significantly differently in utilizing attitude markers.

Pasaribu et al. (2022) compared two student groups with different grades, including third- and fifth-semester students, to examine the EFL students' competency in utilizing interactive metadiscourse within academic writing. The research, conducted utilizing a mixed quantitative and qualitative design, included 40 students in two groups, each consisting of 20 participants, supposed to compile an essay with at least 250 words about how important English mastery could be in the 4.0 disrupted era. The texts written by the students had nearly 818 interactive markers, indicating low frequency of interactive discourse markers in the students' writings. The transition markers were the first concerning frequency, with FMs, code gloss, endophoric markers, and evidential taking the next ranks. Besides, concerning the interactive metadiscourse marker application, the fifth-semester students had a slightly better performance than the third-semester students. Alqahtani et al. (2020) explored the gender differences in the application of interactive metadiscourse markers in EFL academic writings compiled by male and female EFL majors attending the College of Languages and Translation, Al-Imam Mohammad bin Saud Islamic University. They also examined the results under cultural differences and discursive psychology approaches. Analyses were conducted on the selected academic essays (n=30 for each gender) according to Hyland's (2005) proposed metadiscourse framework. Electronic essay analysis was initially conducted utilizing a concordance software program to ensure an acceptable reliability level. The next step included a qualitative examination of all interactive metadiscourse markers to discover their actual functions. As shown, the two genders used interactive markers, including transitions, FMs, and code glosses, differently, with a statistically significant difference and females surpassing males. However, the qualitative analysis revealed the potential role of the students' psychological and cultural variations in gender differences concerning metadiscourse markers' application.

Takač et al. (2019) studied discourse acts, text sequences, or stages known as FMs in a corpus of 80 argumentative writings by early undergraduate Croatian L2 English learners at the B2 level compared to native speakers. Patterns of L2 learners' FMs application were analysed and compared to English native speakers', exploring the FMs and coherence associations, seeking to analyse the FMs application in academic argumentative essays produced by English L2 users. As shown, L2 learners tended toward selecting and overusing a specific set of FMs, particularly to sequence and label stages, mainly relying on individual items, including firstly or to conclude, to demonstrate their desired functions (Takač & Teaching, 2018). This finding was justifiable since both subcategories formed a vital property of argumentative essays, sequencing text parts, ordering arguments, and clearly labelling text stages. Ebadi et al. (2015) examined the MD characteristics in the discussion and conclusion sections of Iranian and native English writers in the geology hard science. Two Research Article groups by Native English (NE) and Native Persian (NP) writers in Geology were randomly selected for investigation. The MD markers, comprising interactive and

international devices underwent manual counting and recording. Both English (8.58%) and Persian (3.07%) writers showed significant similarities in using this MD resource, which could be associated with the strict and demanding nature of the studied sections.

Most previous studies on metadiscourse markers reported the frequencies and functions of metadiscourse markers from an applied linguistic perspective. This study could extend this viewpoint and provide academic writing instructors and syllabus designers with clear pictures of the patterns of FMs application in the academic essays of different disciplines.

### 3. METHODOLOGY

#### 3.1. Corpus

The study corpus was supplied by MICUSP, comprising 56 students' essays (a total of 170.760 words) from two disciplines (30 in Philosophy (PHI) and 26 in Psychology (PSY)). Biber et al. (1998) listed the following main characteristics for corpus-based analysis. First, due to its empirical nature, it focuses on the actual usage patterns in natural texts while utilizing an extensive and organized set of natural texts, called “corpus”, for analysis. This method also uses computers extensively to perform analyses, utilizing both automatic and interactive methodologies. Besides, corpus-based analysis relies on both quantitative and qualitative analytical procedures, providing the most appropriate means of analyzing what language learners need, according to (Carretero, 2016). Corpus particulars are presented in Table 1.

Table 1:

*Corpus Particulars*

Disciplines	Paper	Type of paper	Number	Total word count
Philosophy	30	Argumentative	20	97.512
		Critique/Evaluation	10	
Psychology	26	Argumentative	16	73.248
		Critique/Evaluation	10	

#### 3.2. Analytical Framework

The current paper utilized Hyland (2005) interactive model of metadiscourse markers, which considered one group of interactive metadiscourse markers, FMs. Hyland’s model was used in this study primarily because of its potential applicability and straightforwardness, providing explicit definitions and sufficient examples for every category brought in the appendix of his book, *Metadiscourse* (218-224). Table 2 presents the subcategories and examples:

Table 2:

*FMs subcategories*

Macro Category	Subcategory	Examples
FMs	Sequencing	(in) chapter X, first, next, lastly, I begin with
	Stage labelling	all in all, at this point, in conclusion, on the whole
	Goal announcement	my focus, goal, objective is to, I seek to, my purpose is to)
	Topic shifting	back to, in regard to, return to, turn to

### 3.3. Data Analysis Procedures

Four steps were taken to analyze the collected data (Figure 1). First, the 56 students' argumentative and evaluative essays were downloaded from MICUSP, providing nearly 830 A-grade papers (approximately 2.6 million words) from several disciplines within four academic divisions (Humanities and Arts, Social Sciences, Biological and Health Sciences, Physical Sciences) of the University of Michigan and saved in 2 separate PDF files (Figure 1). Second, under Hyland (2005) interactive model of metadiscourse markers, only one group of interactive metadiscourse markers, FMs, and argumentations and evaluations were scrutinized. Hyland (2005) interactive model of metadiscourse markers contributed to identifying FMs and their subcategories (Table 2).

Third, the selected texts were analysed closely considering the proposed category, and the sample texts were read individually to record FMs number and type. This step was followed by rereading the sample texts sentence by sentence to find FMs once again and ensure avoiding any mistakes throughout the first count (Figure 1). Each FM category was then rechecked to ensure correct classification, after which the results were tabulated and elaborated, as shown in Figure 1.

Figure 1:

The Flow Diagram of the Data Analysis Procedures



## 4. RESULTS AND DISCUSSIONS

This section presents and discusses the results concerning the frequency and functions of FMs in academic students' essays. The information is then tabulated and elaborated. To this purpose, this section is organized into three subsections.

### 4.1. FMs Frequency in PHI and PSY

The first research question considered the FMs frequency in essays by Philosophy and Psychology students as a result of the discourse community they belonged to. The results reveal that the frame markers are out of the scope of students' attention and have low density. As proved, genre affects the types of discourse acts conducted (Ädel, 2006, p. 58). FMs, a fundamental written discourse component, help frame information regarding 'text boundaries or elements of schematic text structure' Hyland and Tse (2004, p. 168). FMs clearly represent the discourse-related organizational structure (Hempel & Degand, 2006), raising the essential role of sequencing and stage labelling while informing the readers of the topic and idea shifting. Table 3 shows FMs frequency within students' writings.

Table 3:

*FMs Frequency in Philosophy and Psychology Students' Essays*

Disciplines	Function	Frequency	Word count	Per 1.000.000 words
Philosophy	FM	59	97.512	605.05
Psychology	FM	64	73.248	873.74



According to Table 3, 59 FM realizations were identified in the analysed students' essays in Philosophy (Examples 1, 2, and 3), with two FMs used simultaneously in some texts. Besides, 64 realizations were found in the analyzed students' essays in Psychology (Example 4, 5, and 6), with two frame markers used simultaneously in some texts.

This research agrees with Aimah et al. (2023) and Putri et al. (2023) who referred to metadiscourse markers as helpful means for writers to express what they wished. The results also agree with the findings of Binmahboob (2022) and Takač et al. (2019), highlighting the use of a certain set of FMs in students' essays. This study also agrees with research conducted by Alghazo et al. (2023), Alyousef (2016), Mu et al. (2015), Pooresfahani et al. (2012), and (Akbaş, 2012).

However, the present study disagrees with Assassi and Merghmi (2023) and Prasetyanti et al. (2023) who highlighted a higher frequency of transitions, FMs, and evidential in linguistics than in Education when regarded from the interactive metadiscourse category but more use of hedges, boosters, and self-mentions in linguistics compared to education concerning the findings of the interaction metadiscourse corpora. The results also oppose the research conducted by Pasaribu et al. (2022), Alqahtani et al. (2020), and Sancak (2019). Zakaria and Malik (2018) indicated that Arab writers had a greater inclination for the deployment of the interactive markers (Total counts = 919) than interactional ones (Total counts = 592) as there was a higher percentage of interactive (60.8%) than interactional (39.2%) metadiscourse usage. Yüksel et al. (2018) found that regardless of experience in writing and L1 language background, interpersonal metadiscourse markers were used more frequently than textual metadiscourse markers. Finally, the results contradict those reported by Ozdemir et al. (2014), Anwardeen et al. (2013), and Keshavarz and Kheirieh (2011).

- Example 2

*This paper **explores** the relations between some influential theories of explanation and scientific understanding.*

- Example 3

The **fourth** and **final** observation is that there is a great deal of internal coherence among sensations of the difference senses (Locke, 1847).

- Example 4

**Begin** by presenting the empirical constraints of a naturalist theory of meaning. Both, indeterminacy of meaning and ontological relativity follows from this.

- Example 5

The **aim** of this paper is two-fold.

- Example 6

**Next**, I would like to discuss the cultural system, which...

- Example 7

**In addition** to high ability and self-efficacy, another predictor...

#### 4.2. FMs Functions and Frequency in PHI and PSY

The second research question focused on the FMs functions in essays compiled by Philosophy and Psychology students. The second subcategory in interactive resources, Hyland (2005)'s FMs, characterized as items framing knowledge of elements of the discourse (Table 4) reveal sequencing (*I begin with, I end with, Third*) stage labelling (*All in all, To conclude, In summary*), goal announcement (*I argue, Purpose, In this paper*), and topic shifting (*Turn to, Back to, So...*).

As seen in Example 8, the FM is displayed as a sequence. Sequencing devices make the structure of the propositional contents or elements of text explicit to provide the audience with deeper insights into the message (Hyland, 1998).

- Example 8

*The **second** issue I take with Hempel's model is that there seems to be a heavy psychological component in the requirement of explanatory relevance, but its importance is not addressed.*

According to Example 9, the FM is displayed to announce goals, indicating either the writers' general discourse intent or the intended goal for a particular piece of text. Articulating individual intentions contributes as a significant rhetorical tool through which Hyland and Jiang (2018) and authors can provide direction for their arguments and ensure their readers' understanding of where the text is headed.

- Example 9

*In this paper I **examine** the reliability theory of justification.*

Based on Example 10, the FM is displayed as a label stage, signaling the present discourse activities while offering a clear tool through which writers mark the forthcoming text stages or rhetorical functions.

- Example 10

*The sobering **conclusion** I made is that, if all of humanity possesses individual perceptions with the potential for bias, we have no way to ever perceive the nature of true reality.*

The FM related to the topic shift function was not found in the analysed essays. Topic shifters reflect changes in attention focus, keeping movement from the writer's desired point to another.

The third research question sought to highlight the most and the least frequently utilized FMs within essays by Philosophy and Psychology students concerning the discourse community they belonged to (Table 4).

Table 4:

*FM frequency in function*

FMs	Frequency (Per 1.000.000 Words)				Total
	Sequencing	Stage labelling	Goal announcement	Topic shifting	
<b>Philosophy</b>	358.93	1.025	235.86	0	595.81
<b>Psychology</b>	587.04	1.365	273.04	0	861.44

Concerning FM frequency in function, Table 4 shows a total of 595.81 and 861.44 FMs in every 1.000.000 words in Philosophy and psychology, respectively. Hence, Philosophy had 358.93 sequencing, 1.025 stage labelling, 235.86 goal announcement, and 0 topic-shifting frame markers in 1.000.000 words. There are also 587.04 sequencing, 1.365 stage labelling, 273.04 goal announcements, and 0 topic-shifting FMs in psychology, highlighting that this field had more FMs. Based on Table 4, sequencing FMs were the most frequently used subcategory within both disciplines, while topic-shifting FMs had the lowest frequency.

The frequency analysis of the above four FM categories showed that undergraduate and postgraduate students primarily used items for the writer's goal announcement and to a specific extent for idea or point sequencing rather than topic shifting or text stage labelling.

The results in Figures 2, 3, and 4 show, **a)** the type and classifications of FMs employed in this research following Hyland's (2005) interactive model of metadiscourse markers only on one group of interactive metadiscourse markers, FMs, **b)** these markers' frequency in 56 students' essays, and **c)** in more detail, the type of frame markers with the most and the least realizations in academic students' essays.

Figure 2:  
FMs frequency in functions (PHI)

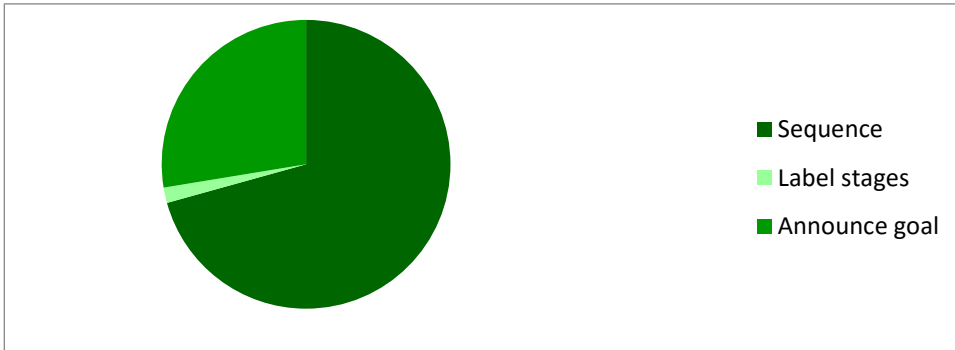


Figure 3:  
FMs frequency in functions (PSY)

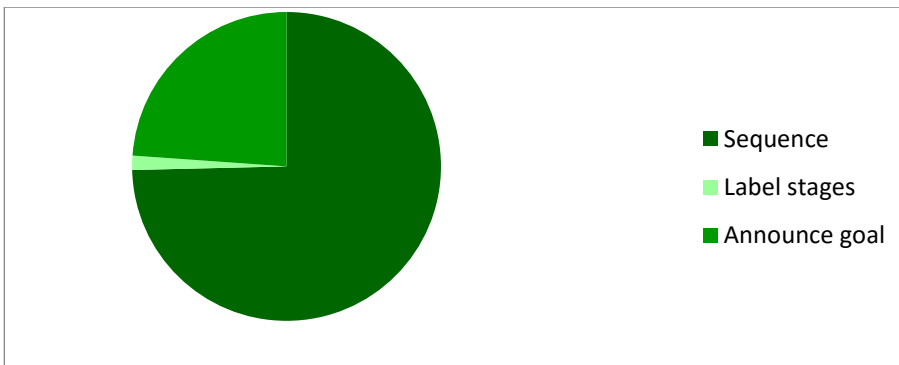
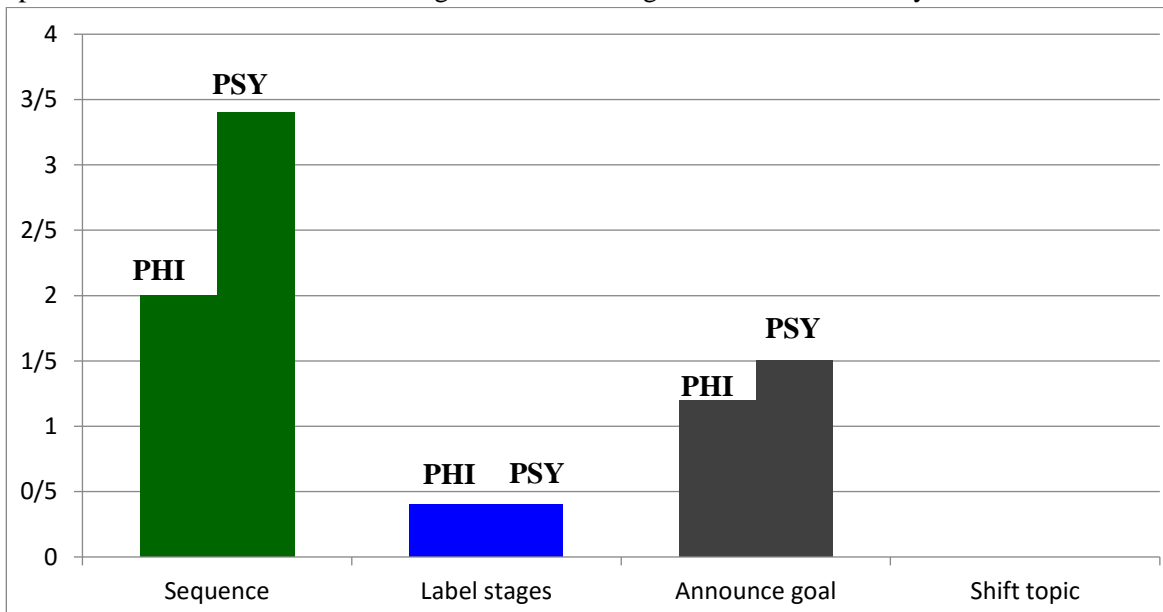


Figure 4  
Comparison of Frame Markers in Undergraduate and Postgraduate Students Essays



### 4.3. The most frequently utilized FMs in PHI and PSY

The list of frame markers in Table 5 reveals those with the highest frequency in Philosophy and Psychology.

Table 5:

*The Most Frequently Utilized FMs in PHI and PSY*

Philosophy			
Sequencing	Stage labelling	Goal announcement	Topic shifting
Begin, Finally, Start, First (ly), Next, Second (ly), Third (ly), Fourth (ly), End, Last (ly), Also	-	Example, Argue, Discuss, Goal, Explore, Aim, In this paper	-
Psychology			
Third (ly), First (ly), Second (ly), Finally, Lastly, Next, However	-	This paper, Aim, Discuss, Examine, This article, In this paper	-

According to Table 5, the students employed a restricted variety of FMs, consequently over-relying on a specific category in their writings. Frame markers like *begin, first, last, second, goal, explore, etc.*, in Philosophy or in Psychology *third, finally, however, discuss, in this paper, examine, etc.*, were used far more often than the others, as they tended to have a higher frequency in books, articles, or textbooks than others. In some essays, such difference can be associated with the genre impact, and the nature of the topic or sentences requires a particular set of FMs. As Ahmadi (2016) stated, these findings can be attributable to the knowledge-knower structures characteristic of the disciplines and the epistemologies underlying the research paradigms.

There can be several reasons for the downward average distribution of frame markers in students' essays, possibly leading to 'pragmatic fossilization' (Dumlao & Wilang, 2019), weak associations, and disinterest on the audience's part (Asassfeh et al., 2013, p. 579). Based on previously conducted studies, L2 learners utilize a similar collection of metadiscourse devices (firstly, secondly, thirdly, etc.), as they sequence their ideas in writing (Ädel, 2006; Anwardeen et al., 2013; Asassfeh et al., 2013; Chan et al., 2010; Dumlao & Wilang, 2019; Mohamed & Rashid, 2017; Qin & Uccelli, 2019).

As Ädel (2006) argued, enumerators (first, second, third) contribute to argumentative text, enabling the writers to support their arguments and facilitating the argument identification through numerical labels when done succinctly.

Besides, such markers (furthermore, moreover, in addition, besides) were frequently utilized and considered as transitions rather than FMs in previous papers (Anwardeen et al., 2013; Hyland, 2005; Mohamed & Rashid, 2017; Qin & Uccelli, 2019), suggesting that the instructional material employed in the current paper highlighted these markers with various categories than in the latest corpus research works. Misconceptualization of such forms may result from categorizing these markers under various rather than their suggested applications. Thus, those developing materials must adhere to and investigate the most current corpus research to discover the norms and the newly emerging trends in the discourse register of the professional language users.

## 5. CONCLUSION

Writers aim to reach specific goals through academic writing, including persuasion, argument, description, contrast, and comparison of facts, which also serves different objectives (Ballenger, 2010). Cross-disciplinary research reflect investigations and creative methods that comprise two or more academic disciplines. Cross-disciplinary research in learning and instruction contribute critically to addressing the sophisticated challenges of 22<sup>nd</sup>-century education. This paper examined the frequency and functions of FMs within academic students' essays, comprising argumentation and evaluation.

Concerning the first research question, FMs can be found pretty frequently in students' essays in Philosophy and Psychology, with an insignificant difference between Philosophy and Psychology. There were 59 and 64 FM realizations in the analysed philosophy and psychology student essays, respectively. Concerning the second research question, FMs have four different functions comprising stages labelling (e.g., *to conclude*), topic shifting (e.g., *as for, in terms of*), sequencing (e.g., *to begin with, lastly*), and goal announcement (e.g., *my purpose, focus*) (Hyland, 2005). To answer the third research question, Philosophy had a total of 595.81 FMs in 1.000.000 words. Similarly, Psychology found 861.44 FMs per 1.000.000 words. The sequencing FMs were the most frequently used subcategory in both disciplines, while topic shifting FMs were the least frequently employed in both disciplines.

The term frame appears in Hyland (2005)'s categorization of interactive metadiscourse in metadiscourse analysis, an explicit label of textual indefiniteness to help the reader follow the unfolding discourse. Knowing and recognizing the functions and meaning of frame markers can help in teaching and learning academic writing for different disciplines. While teaching FMs, both the function and the meaning of FMs should be explained by the teachers, enabling learners to discover what every FM category may offer. Besides, learners should be encouraged to consider the audience of their texts, how they would like the audience to understand the written text, to enhance their metadiscourse knowledge in general, as it forms a critical communication element.

The research findings provide some pedagogical indications for both teaching and learning academic writing while creating reader-friendly academic writing. English language teachers can also use the findings to identify the learners' strengths and weaknesses, assisting them in mastering the language and addressing their weaknesses concerning metadiscourse markers. In addition, material developers can benefit from the research findings to provide appropriate texts and instructions for the learners. Finally, the research findings set the grounds for future researchers to concentrate on various dimensions of metadiscourse markers employed in academic writing.

## REFERENCES

- Ädel, A. J. M. i. L., & English, L. (2006). *Metadiscourse in L1 and L2 English*. 1-255. <https://www.torrossa.com/en/resources/an/5002254>
- Ahmadi, P. (2016). Metadiscourse in academic writing: Does it really help ESP students to write effective Research articles. 5th International Conference on Research in Science and Technology, London.
- Aimah, S., Mulyadi, D., & Ifadah, M. J. U. (2023). Metadiscourse markers written in introduction section of final project of Unimus EFL learners. *UNIMUS*. <http://repository.unimus.ac.id/7173/>
- Akbaş, H. E. J. Ö. D. (2012). Determinants of bank profitability: An investigation on Turkish banking sector. *Öneri Dergisi*, 10(37), 103-110. <https://www.acarindex.com/pdf/acarindex-1401-9308.pdf>
- Alghazo, S., Al-Anbar, K., Altakhaineh, A. R. M., & Jarrah, M. J. T. i. L. (2023). Interactive metadiscourse in L1 and L2 English: Evidence from editorials. *Topics in Linguistics*, 24(1), 55-66. <http://dx.doi.org/10.2478/topling-2023-0004>
- Alqahtani, S. N., Abdelhalim, S. M. J. T., & Studies, P. i. L. (2020). Gender-based study of interactive metadiscourse markers in efl academic writing. *Theory and Practice in Language Studies*, 10(10), 1315-1325. <http://www.academypublication.com/issues2/tpls/vol10/10/tpls1010.pdf#page=139>
- Alyousef, H. S. J. S. S. (2016). A multimodal discourse analysis of international postgraduate business students' finance texts: an investigation of theme and information value. *Social Semiotics*, 26(5), 486-504. <https://doi.org/10.1080/10350330.2015.1124518>
- Anwardeen, N. H., Luyee, E. O., Gabriel, J. I., & Kalajahi, S. A. R. J. E. L. T. (2013). An Analysis: The Usage of Metadiscourse in Argumentative Writing by Malaysian Tertiary Level of Students. *English Language Teaching*, 6(9), 83-96. <https://eric.ed.gov/?id=EJ1077130>
- Asassfeh, S. M., Alshboul, S. S., & Al-Shaboul, Y. M. (2013). *Distribution and Appropriateness of Use of Logical Connectors in the Academic Writing of Jordanian English-Major Undergraduates*. *Journal of Educational and Psychological Sciences*.-2013, Vol. 14, No. 3, Pp. 559-583. University of Bahrain.

<http://dx.doi.org/10.12785/JEPS/140320>

Assassi, T., & Merghmi, K. J. A. I. S. J. (2023). Formulaic Sequences and Meta-Discourse Markers in Applied Linguistics Research Papers. A cross-linguistic corpus-based analysis of native and non-native authors' published articles. *International Scientific Journal*, 24(27), 154-175. <https://orcid.org/0000000344125991>

Ballenger, J. (2010). Women's Access to Higher Education Leadership: Cultural and Structural Barriers. *Forum on public policy online*. (Vol. 2010, No. 5). Oxford Round Table. 406 West Florida Avenue, Urbana, IL 61801. <https://eric.ed.gov/?id=EJ913023>

Bhatia, V. K. (1993). *Analysing genre: Language use in professional settings*. Routledge. <https://books.google.com/books>

Biber, D., Conrad, S., & Reppen, R. (1998). *Corpus linguistics: Investigating language structure and use*. Cambridge University Press. <https://books.google.com/books>

Binmahboob, T. J. E. L. T. (2022). The Use of Metadiscourse by Saudi and British Authors: A Focus on Applied Linguistics Discipline. *English Language Teaching*, 15(2), 78-89. <http://dx.doi.org/10.5539/elt.v15n2p78>

Blömeke, S., Gustafsson, J.-E., & Shavelson, R. J. J. Z. f. P. (2015). Beyond dichotomies. *Zeitschrift für Psychologie*. <http://dx.doi.org/10.1027/2151-2604/a000194>

Bunton, D. J. E. f. s. p. (1999). The use of higher level metatext in Ph. D theses. *English for specific purposes*, 18, S41-S56. [https://doi.org/10.1016/S0889-4906\(98\)00022-2](https://doi.org/10.1016/S0889-4906(98)00022-2)

Campbell, D. T. (2014). Ethnocentrism of disciplines and the fish-scale model of omniscience. In *Interdisciplinary relationships in the social sciences* (pp. 328-348). Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9780203788363-19/ethnocentrism-disciplines-fish-scale-model-omniscience-donald-campbell>

Carretero, M. (2016). Cutting, J.(2015). *Pragmatics: A resource book for students*. In: John Benjamins Publishing Company. <http://dx.doi.org/10.1075/resla.29.2.10car>

Chan, S., Tan, H. J. I. J. o. E., & ICT, D. u. (2010). Extracting and comparing the intricacies of metadiscourse of two written persuasive corpora. *International Journal of Education and Development using ICT*, 6(3), 124-146. <https://www.learntechlib.org/p/42383/>

Cheung, B. M. K. J. P. o. E. f. p. c. H. K. C. o. P. o. H. K. (1993). Text analysis of direct mail sales letters. *Perspectives on English for professional communication. Hong Kong: City of Polytechnic of Hong Kong*.

Crismore, A., Markkanen, R., & Steffensen, M. S. J. W. c. (1993). Metadiscourse in persuasive writing: A study of texts written by American and Finnish university students. *Written communication*, 10(1), 39-71. <https://doi.org/10.1177/0741088393010001002>

Dumlao, R. P., & Wilang, J. D. J. I. J. o. A. L. (2019). Variations in the use of discourse markers by L1 and L2 English users. *Indonesian Journal of Applied Linguistics*, 9(1), 202-209. <http://dx.doi.org/10.17509/ijal.v9i1.15206>

Ebadi, S., Rawdhan, A. S., Marjal, B. E. J. J. o. A. L., & Research, L. (2015). A Comparative Study of the Use of Metadiscourse Markers in Persian and English Academic Papers. *Journal of Applied Linguistics and Language Research*, 2(4), 28-41. <http://www.jallr.com/index.php/JALLR/article/view/60>

Fang, Z. (2021). *Demystifying academic writing: Genres, moves, skills, and strategies*. Routledge. <http://dx.doi.org/10.1016/j.system.2021.102696>

Fowler, R. (1986). *Linguistic criticism*. Oxford: Oxford University Press.

Gillett, A., Hammond, A., & Martala, M. J. (2009). *Successful academic writing*. <https://lcn.loc.gov/2009008664>

Hall, K. L., Feng, A. X., Moser, R. P., Stokols, D., & Taylor, B. K. J. A. j. o. p. m. (2008). Moving the science of team science forward: collaboration and creativity. *American journal of preventive medicine*, 35(2), S243-S249. <https://doi.org/10.1016/j.amepre.2008.05.007>

Halliday, M. (1994). (1985) *An introduction to functional grammar*. London: Edward Arnold.

Halliday, M. A. (1981). Text semantics and clause grammar: some patterns of realization. The seventh LACUS forum.

Halliday, M. A. K. (1973). *Explorations in the functions of language*.



- Halliday, M. A. K. (1985). *Language, context and texts: a social semiotic perspective*. . In. New York: Victorian Deekan University press.
- Halliday, M. A. K. (2007). *Language and Education: Volume 9*. A&C Black. <https://books.google.com/books>
- Hasan, R., Halliday, M. A. J. L., & JR, M. (1976). *Cohesion in English*. <https://www.scirp.org/reference/ReferencesPapers?ReferenceID=2122385>
- Hempel, S., & Degand, L. (2006). The use of sequencers in academic writing: a comparative study of French and English. International Symposium: Discourse and Document. *In International Symposium: Discourse and Document (Vol. 5, No. 1, pp. 35-39)*. <http://dx.doi.org/10.1016/j.pragma.2007.02.001>
- Hyland, K. (2000). *Disciplinary discourses: Social interactions in academic writing*. Longman.
- Hyland, K. (2005). *Metadiscourse: Exploring interaction in writing*. London & New York: Continuum.
- Hyland, K., & Jiang, F. K. J. E. f. S. P. (2018). "In this paper we suggest": Changing patterns of disciplinary metadiscourse. *English for Specific Purposes*, 51, 18-30. <https://doi.org/10.1016/j.esp.2018.02.001>
- Hyland, K., & Tse, P. J. A. I. (2004). Metadiscourse in academic writing: A reappraisal. *Applied linguistics*, 25(2), 156-177. <http://dx.doi.org/10.1093/applin/25.2.156>
- Hyland, K. J. H. i. s. r. a. (1998). Hedging in scientific research articles. 1-317.
- Hyland, K. J. N. J. o. E. S. (2010). Metadiscourse: Mapping interactions in academic writing. *Nordic Journal of English Studies*, 9(2), 125-143. <http://dx.doi.org/10.35360/njes.220>
- Kadir, N. A., Rahmat, N. H., Wahid, H. S. A., & Dzuradeen, N. S. J. E. J. o. A. L. S. (2020). Positive Side of Covid-19? A Metadiscourse Analysis of A Personal Blog. *European Journal of Applied Linguistics Studies*, 2(2). <http://dx.doi.org/10.5281/zenodo.3863038>
- Keshavarz, M. H., & Kheirieh, Z. J. J. o. E. S. (2011). Metadiscourse elements in English research articles written by native English and non-native Iranian writers in applied linguistics and civil engineering. *Journal of English Studies*, 1(3), 3-15.
- Kopple, W. J. V. (1985). Some exploratory discourse on metadiscourse. *College composition and communication*, 82-93.
- Lee, J. J., & Deakin, L. J. J. o. s. l. w. (2016). Interactions in L1 and L2 undergraduate student writing: Interactional metadiscourse in successful and less-successful argumentative essays. *Journal of second language writing*, 33, 21-34. <http://dx.doi.org/10.1016/j.jslw.2016.06.004>
- Locke, J. (1847). *An essay concerning human understanding*. Kay & Troutman.
- Milne, E. J. E. i. d. l. U. C. (2003). Metadiscourse revisited: a contrastive study of persuasive writing in professional discourse. Regreso al metadiscursio: estudio contrastivo de la persuasión en el discurso profesional. *Estudios ingleses de la Universidad Complutense*, 11, 29-52.
- Mirshamsi, A., & Allami, H. (2013). *Metadiscourse markers in the discussion/conclusion section of Persian and English master's theses*.
- Mohamed, A., & Rashid, R. J. I. J. o. E. L. (2017). The metadiscourse markers in good undergraduate writers' essays corpus. *International Journal of English Linguistics*, 7(6), 213-220. <http://dx.doi.org/10.5539/ijel.v7n6p213>
- Mu, C., Zhang, L. J., Ehrich, J., & Hong, H. J. J. o. E. f. A. P. (2015). The use of metadiscourse for knowledge construction in Chinese and English research articles. *Journal of English for Academic Purposes*, 20, 135-148.
- Muir, J. J. (1972). *A modern approach to English grammar: an introduction to systemic grammar*.
- Ozdemir, N. O., Longo, B. J. P.-S., & Sciences, B. (2014). Metadiscourse use in thesis abstracts: A cross-cultural study. *Procedia-Social and Behavioral Sciences*, 141, 59-63. <https://doi.org/10.1016/j.sbspro.2014.05.011>
- Pasaribu, A. N., Pasaribu, T. K., Sinambela, E., & Manullang, V. R. J. E. R. J. o. E. E. (2022). Interactive Metadiscourse Markers In Indonesian EFL Students' academic Writing. *Journal of English Education*, 10(3), 883-890. <https://doi.org/10.1016/j.sbspro.2014.05.011>
- Pooresfahani, A. F., Khajavy, G. H., & Vahidnia, F. J. E. L. R. (2012). A contrastive study of

metadiscourse elements in research articles written by Iranian applied linguistics and engineering writers in English. *English Linguistics Research*, 1(1), 88-96. <http://dx.doi.org/10.5539/elr.v1n1p88>

Prasetyanti, D. C., Tongpoon-Patanasorn, A., & Sahan, A. (2023). *Analyzing Metadiscourse Markers in Introduction Chapters of Dissertation in Various Disciplines*. 1st Lawang Sewu International Symposium on Humanities and Social Sciences 2022 (LEWIS 2022). Atlantis Press. [http://dx.doi.org/10.2991/978-2-38476-078-7\\_40](http://dx.doi.org/10.2991/978-2-38476-078-7_40)

Putri, A. N., Hastomo, T., Farhan, M., Yunaini, K. J. J. o. E. T., Applied Linguistics, & Literatures. (2023). A Study Of Interaction And Interactive Metadiscourse On Ukraine-Russia Conflict News Articles. 6(1), 89-100.

Qin, W., & Uccelli, P. J. J. o. P. (2019). Metadiscourse: Variation across communicative contexts. *Journal of Pragmatics*, 139, 22-39. <https://doi.org/10.1016/j.pragma.2018.10.004>

Sancak, D. (2019). *The Use of transitions, frame markers and code glosses in Turkish EFL learners' opinion paragraphs* Middle East Technical University]. <http://etd.lib.metu.edu.tr/upload/12624312/index.pdf> <https://hdl.handle.net/11511/44903>

Takač, V. P., Ivezić, S. V. J. D., & Interaction. (2019). Frame markers and coherence in L2 argumentative essays. *Discourse and Interaction*, 12(2), 46-71. <http://dx.doi.org/10.5817/DI2019-2-46>

Takač, V. P. J. L. J. o. L., & Teaching. (2018). Sentence-initial interactive metadiscourse and text coherence in EFL argumentative essays. *Lonaka Journal of Learning and Teaching*, 9(2), 13-29. [https://www.bib.irb.hr/986056/download/986056.1361-Article\\_Text-4082-1-10-20181121.pdf](https://www.bib.irb.hr/986056/download/986056.1361-Article_Text-4082-1-10-20181121.pdf)

Vogel, R. J. D., & Interaction. (2008). Sentence linkers in essays and papers by native vs. non-native writers. *Discourse and Interaction*, 1(2), 119-126. <https://www.cceol.com/search/article-detail?id=766494>

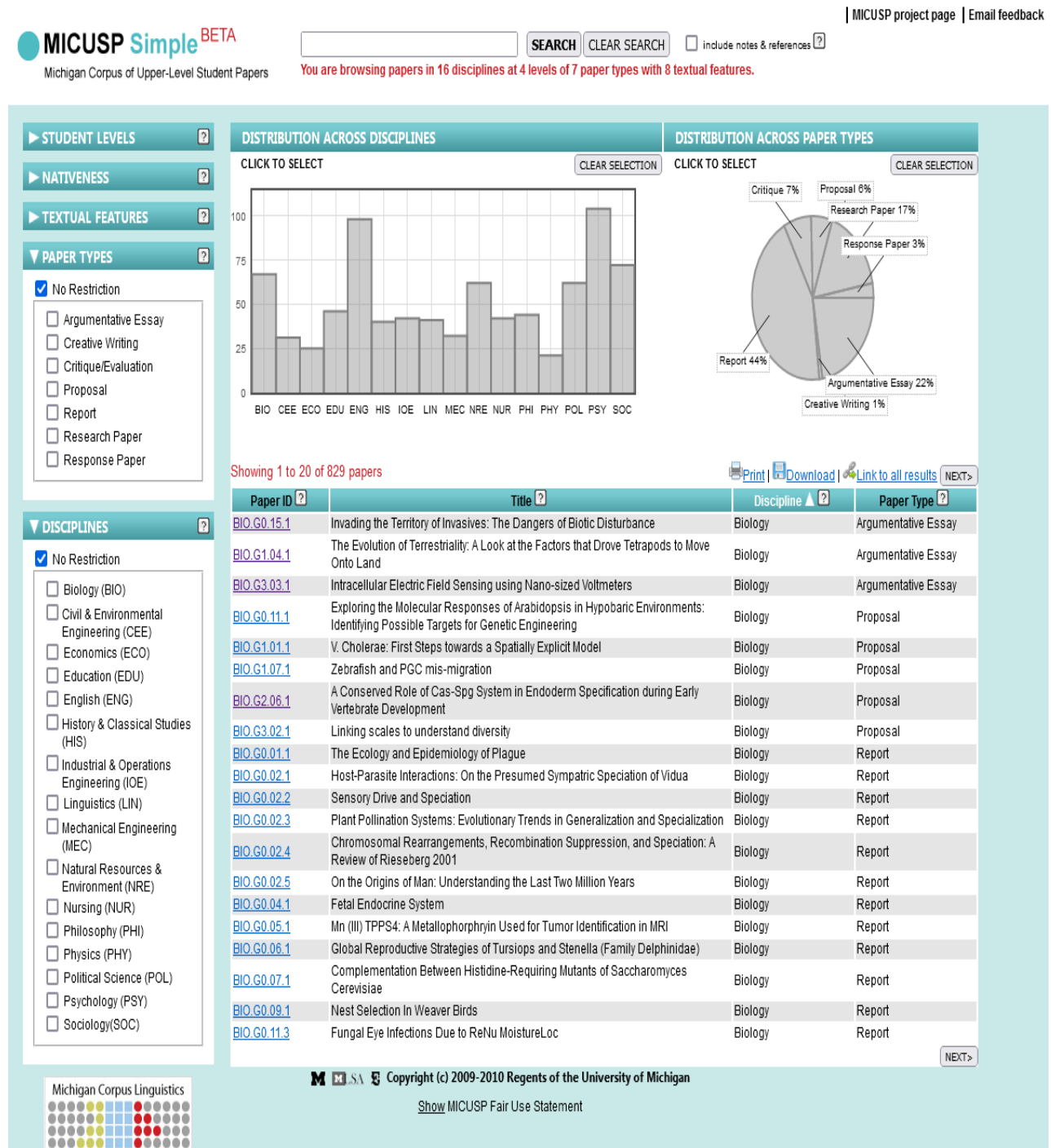
Yüksel, H. G., Kavanoz, S. J. A. i. l., & studies, l. (2018). Dimension of Experience: Metadiscourse in the Texts of Novice Non-Native, Novice Native and Expert Native Speaker. *Advances in language and literary studies*, 9(3), 104-112. <https://eric.ed.gov/?id=EJ1185916>

Zakaria, M. K., & Malik, F. A. (2018). Metadiscourse in academic writing of pre-university Arab students at the International Islamic University Malaysia (IIUM). MATEC Web of Conferences. (Vol. 150, p. 05086). EDP Sciences. <https://doi.org/10.1051/mateconf/201815005086>



APPENDIX

**Figure S1**  
Michigan MICUSP Corpus



**Figure S2***The Student Essay Sample Analysis*

emphasizes society as a whole, with contribution from each individual. A good analogy for this model will be the movement of water drops. When two water drops meet each other, they merge into one big drop; and as more water drops are added in, the water volume grows as a whole. As for the hypothetical contract view, the one that I think most plausible combines individual rights with social welfare together. In such a society, individual rights and social welfare are balanced based on different stages of human needs, according to the Maslow's hierarchy of needs. My entire argument will start with pointing out disadvantages of the other two frameworks based on this hierarchy and comparing them to the hypothetical contract view, that I prefer. Then, I will modify some aspects of this view followed by the greatest difficulty that I find.

First of all, I will introduce the Maslow's hierarchy of needs, which is usually depicted as a pyramid with five levels of needs. From the very lowest bottom to the top, it consisted of physiological need, the need for safety, the need for love and belongings, the need for esteem and the need for actualization. The four lower levels are usually in the group of deficiency needs, while the top level is called the growth need. Maslow

**Figure S3***FMs Example in Analyzed Student Writings*

Title: **Basic Frameworks of Moral Justification and Hierarchy of Human Needs**

cat	Type	Sentence	Tool
2	Self-mention	the one that I think most plausible combines individual rights with social welfare together	I
1	Evidential	according to the Maslow's hierarchy of needs.	According to
2	Self-mention	My entire argument will start with pointing out disadvantages of the other two frameworks based on this hierarchy and comparing them to the hypothetical contract view, that I prefer	My/ I
1	Frame Marker	My entire argument will start with pointing out disadvantages of the other two frameworks based on this hierarchy and comparing them to the hypothetical contract view, that I prefer	Will start
2	Self-mention	then, I will modify some aspects of this view followed by the greatest difficulty that I find.	I
1	Frame Marker	then, I will modify some aspects of this view followed by the greatest difficulty that I find.	modify
2	Self-mention	First of all, I will introduce the Maslow's hierarchy of needs, which is usually depicted as a pyramid with five levels of needs	I
1	Frame Marker	First of all, I will introduce the Maslow's hierarchy of needs, which is usually depicted as a pyramid with five levels of needs	Will introduce