

Topical Structure Analysis of Students' Written Discourse

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Abstract. The present study examined the 30 written discourses of 15 teacher education and 15 computer education students in a single topic, Finding Your Inner Hero: Rizalians' Semblance of Sustainability and Social Importance, using the TSA Model of Liisa Lautamati (1987). The quantitative method was adopted to examine the physical characteristics of the paragraphs; the number of independent and dependent clauses; the predominantly used topical progressions; and the topical depth. The findings revealed that students' written discourses showed greater frequency in sequential progression and extended parallel progression. This further means they had to explain the given topic a lot to express their thoughts. Consequently, the longer the explanation, the clearer the ideas. However, it was observed that students must undergo intensive instruction in English grammar and vocabulary building, which are essential in quality writing. Addressing the predicament of their writing skills will better prepare them to become competitive and productive not just in their academic life but as citizens beyond the threshold of Jose Rizal University.

Keywords: Inner Hero, Quantitative Research, Topical Structure, University Students, Written Discourse.

1. THEORETICAL FRAMEWORK

The study is based on Liisa Lautamatti's (1987) topical structure analysis model, which she developed from the Prague School of Linguistics' theme-rheme or topic-comment theory. It examines the semantic relationships between sentence topics and overall discourse topics by looking at topic repetitions, shifts, and reoccurrences. Coherence is taken to be following van Dijk (1977) a semantic property of discourse formed through the interpretation of each individual sentence relative to the interpretation of other sentences. Interpretation implies interaction between the text and the reader, and it is written in this theoretical perspective, as opposed to focusing solely, that this study as well as the studies of Witte and Scheneider and Connor take place.

The Prague School of linguists laid the foundation for topical structure analysis by first distinguishing theme from enunciation. Witte (1983), Vilem Mathesius used the term theme to identify "what the sentence is about" and the term enunciation to refer to "what is said about" the theme. In a point relevant to the later discussion of the theoretical basis for topical structure analysis, Mathesius maintained that "the theme" of a sentence announces 'what is known or at least obvious in a given situation and from which the speaker proceeds in his discourse,' while enunciation adds new or unknown information to the discourse," a distinction that has also been cast in terms of given and new information. Over time the term enunciation gave way to rheme, and rheme to comment. The term theme, meantime, changed to topic, following the usage of Charles Hockett. The term topic is used to refer only to sentence topic, which is distinct from discourse topics. According to Halliday (1985), theme is the element that serves as the point of departure of the message and what the speaker/writer has in mind to start. The remainder of the message is called the rheme. In the theme-rheme relation, the theme sets the background for the rheme - the following information.

Discourse Topic. The concept emerged from the theoretical framework of the Prague School of linguists. In particular, as Witte (1983) points out, Frantisek Danes showed that topics of successive sentences can be identified in relation to what Danes called a "hypertheme," in effect a discourse topic, which may or may not be explicitly stated in the text. The discourse topic is what the text, taken as a whole, is about.

Sentence Topics are units of meaning organized hierarchically in the text, make a semantic contribution to the development of the discourse topic. Lautamatti puts it thus: "The development of the discourse topic within an extensive piece of discourse may be thought of in terms of a succession of hierarchically ordered subtopics, each of which contributes to the discourse topic, and is treated as a sequence of ideas, expressed in the written language as sentences. We know little about restrictions concerning the relationship between sentences and subtopics, but it seems likely that most sentences relating to the same subtopic form a sequence. The way the written sentences in discourse relate to the discourse topic is called topical development of discourse.

The sequence of sentences, Witte (1983) writes, advance the "discourse topic by developing a succession topics, sequences that Lautamatti calls topical progressions. Further, Lautamatti identifies three possible types of progression of sentences: parallel, sequential, and extended parallel progression. Simpson (2000) introduces another probable type of progression which she calls 'extended sequential progression'. Connor (1996) shows that coherence can be mapped using a system of three distinct types of progression; Hoenisch (1996; 2004) codifies the progression using letters

To date, the current study is an ambitious attempt to compare the written discourse of fourth-year teacher education students and computer engineering students, taking into account the 'difference' of their academic

preparation and application in the use of English, as the former group focuses on educational theory and pedagogy, among other things. In contrast, the latter group focuses on basic digital literacy, programming, and coding, among other things. Another distinction highlighted by the study is that the 30 respondents' written discourses concentrate on a particular theme. Thus, two groups from distinct academic areas produced their discourse to express their "inner hero" through writing. As a result, the study's findings serve as a roadmap for developing a writing course across curricula, filling the gap in the research arena.

2. METHODOLOGY

2.1. Data Analysis

A quantitative research method was adopted to provide a clear direction for the study. Creswell (2023) defines the quantitative method as an inquiry into a social or human problem, based on testing a theory composed of variables, measured with numbers, and analyzed with statistical procedures, to determine whether the predictive generalizations of the theory hold. Given the premises, the frequency of independent and dependent clauses, and the number of words in the 30 written discourses/compositions, was tallied. Similarly, the frequency of the four topical progressions was counted and mapped out using topical analysis to determine topical depth. As a result, second language writing using English as the target language will guide the teachers in designing an accurate intervention plan to improve the students' writing skills.

2.2. Participants

The study was conducted on August 15 and 17, 2024, at Jose Rizal University's College of Computer Studies and Engineering and College of Education, Arts, and Sciences. The research population consists of 15 fourth-year Teacher Education students and 15 fourth-year Computer Engineering students, a total of 30 students.

2.3. Research Instrument

The respondents were asked to write a 300-word discourse for more than an hour inside the classroom and the finished outputs have remained unedited before and after the researchers completed the topical structure analysis. Moreover, the written discourses consist of 5 paragraphs at most, and the least of the discourses consist of 3 paragraphs from each respondent, of which 3 paragraphs from each respondent were included in the analysis. David Nunan (1991) defines a paragraph as a piece of meaning-focused work involving learners in comprehending, producing, and/or interacting in the target language, and that tasks are analyzed or categorized according to their goals, input data, activities, setting, and roles. Corollary to the foregoing premises, they wrote the discourse on the given topic/theme, "Finding Your Inner Hero: Rizalians' Semblance of Sustainability and Social Importance," with an emphasis on the core Rizalian values of being Responsible, Courteous, Considerate, and Integrity (RCCI), as the university is named after the national hero of the Philippines, Dr. Jose P. Rizal. Foster (1983, cited in Pajares & Johnson, 1994) stresses that although in-class writing samples may reflect imperfections, these may well be "the most reliable measure available."

3. RESULTS AND DISCUSSION

Lautamatti (1987) discusses three essential sentence characteristics that are relevant to identifying thematic progression. She recognizes the initial sentence element (ISE), which appears first in the sentence. This could be the subject of the sentence or an opening phrase. The second part is the mood subject (MS/GS), sometimes known as the sentence's grammatical subject. The third element is the topical subject (TS), which is the topic of the phrase or what is discussed in the clause.

Table 1: Physical Structure of Written Discourse.

	Teacher Education		Computer Engineering	
	f	%	f	%
Independent Clause	180	55.73	239	52.41%
Dependent Clause	143	44.27	217	47.59%
Total No. of Words (IC & DC)	4462		4595	

Table 1 shows 180 independent clauses and 143 dependent clauses from the 30 written discourses among the teacher education students. While, there were 239 independent clauses and 217 dependent clauses of the written discourses by the 15 computer engineering students. A total of 4462 words from the teacher education and 4595 from the computer engineering students. The data support the findings of Wang and Guo (2014) that students typically started with a coherent paragraph and changed it as they remembered more information, placing fresh information haphazardly in certain paragraphs. Similarly, the JRU respondents, the students wrote quite good written discourse that discussed the topic with several explanations.

Table 2: Topical Progressions Adopted.

	Teacher Education		Computer Engineering	
	f	%	f	%
Parallel Progression	29	17.16%	31	15.42%
Sequential Progression	51	30.18%	49	24.38%
Extended Parallel Progression	71	42.01%	87	43.28%
Extended Sequential Progression	18	10.65%	34	16.92%
Total	169	100.00%	201	100.00%

Table 2 summarizes the topical development in the 30 discourses written in English by the JRU students in teacher education and computer engineering. The data reveals that there is a topical recurrence in all the paragraphs. All the types of progression are reflected. For teacher education - Parallel Progression (PP), 29 or 17.16%; Sequential Progression (SP) 51 or 30.18%; Extended Parallel Progression (EPP), 71 or 42.01%; and Extended Sequential Progression (ESP), 18 or 10.65% were shown in the paragraphs as reflected in the table. In like manner, for computer engineering, Parallel Progression (PP), 31 or 15.42%; Sequential Progression 49 or 24.38%; (SP) Extended Parallel Progression (EPP), 87 or 43.28%; and Extended Sequential Progression (ESP), 34 or 16.92%. Hence, all respondents were found to have observed topical progression in the development of their discourses with recurrences in greater frequency in extended parallel progression and sequential progression. The findings reinforce the findings of Chan's study (2018) that "Topical depth is low in writing with focus on theme(s), but high for object description or narrating events. These patterns apply to both L1 and L2 performances." It further explains that to a single topic chosen before the writing process, several explanations have to be made to explain the topic further and complete the written discourse.

Table 3: Teacher Education Discourse Topical Depth (Option 1).

Clause No.	Topical Depth					Topic No.
1	2	3	4	5		
1	Rizalian					1
2	I, I'm	Responsible				1
3	I	Responsible				2
4		Follow the fundamental or basic rules and regulations		wear proper uniform, no late, etc.		3
5	Rizalian I, my, my					1 1 4
6	I					1 4
7				Using Canvas & JRU Site		
8				Internet access		2
9		Courteous Considerate with Integrity		Independent		5
10				Professor & Dean		6
				Future Educator		6

Table 3 reveals the Teacher Education Discourse Topical Depth (Option 1) which shares the same data with Table 4 (Option 2) although in a different way of mapping out topical depth analysis. It appears that Paragraph No. 1 (CE-R1-WD) has two Parallel Progressions (PP), as demonstrated in Clauses 1 and 5, with one topical subject as "Rizalian"; seven Extended Parallel Progressions (EPP) as shown in Clauses 2, 3, 5 and 6 (I, I'm, my); three Sequential Progressions (SP) as revealed in Clauses 2, 4 & 8 being "Responsible" (repeated twice); "Follow the fundamental or basic rules and regulations"; & "courteous, considerate with integrity" respectively; six Extended Sequential Progression (ESP) in Clause 4, "wear proper uniform", "no late etc."; Clause 5 "academic and social importance"; Clause 6, "using canvass and JRU Site"; Clause 7, "internet access"; Clause 8, "independent"; Clause 9, "Professor and Dean"; & Clause 10, "Future educator." Finally, it could be noted that the main topic subject "Rizalian" is situated at the end line of the first clause.

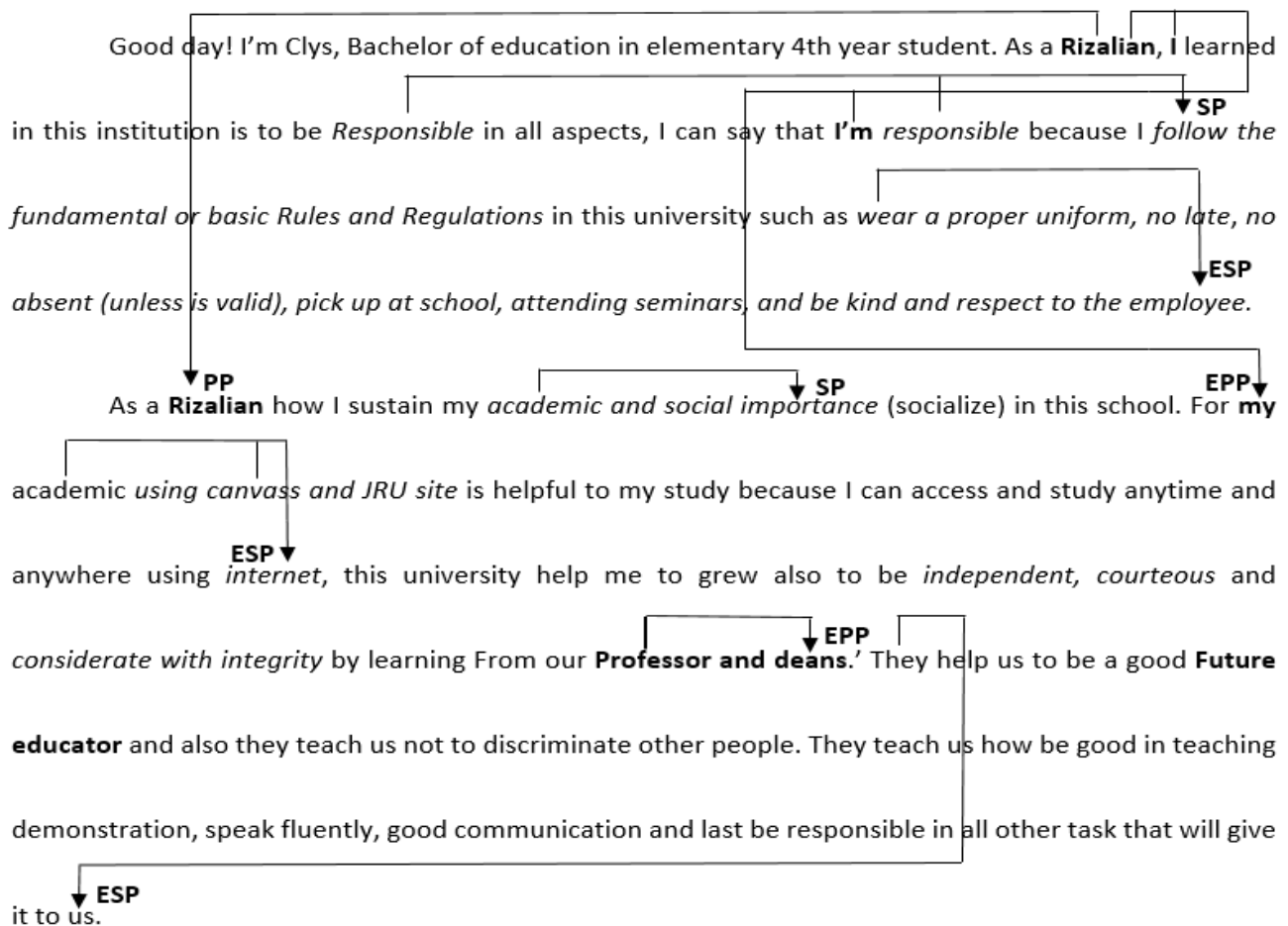
Table 4: Teacher Education Discourse Topical Depth (Option 2)

Table 4 reveals the Teacher Education Discourse Topical Depth (Option 2) which shares the same data with Table 3 (Option 2) although in a different way of mapping out topical depth analysis. It appears that Paragraph No. 1 (CE-R1-WD) has two Parallel Progressions (PP), as demonstrated in Clauses 1 and 5, with one topical subject as "Rizalian"; seven Extended Parallel Progressions (EPP) as shown in Clauses 2, 3, 5 and 6 (I, I'm, my); three Sequential Progressions (SP) as revealed in Clauses 2, 4 & 8 being "Responsible" (repeated twice); "Follow the fundamental or basic rules and regulations"; & "courteous, considerate with integrity" respectively; six Extended Sequential Progression (ESP) in Clause 4, "wear proper uniform", "no late etc."; Clause 5 "academic and social importance"; Clause 6, "using canvass and JRU Site"; Clause 7, "internet access"; Clause 8, "independent"; Clause 9, "Professor and Dean"; & Clause 10, "Future educator." Finally, it could be noted that the main topic subject "Rizalian" is situated at the end line of the first clause.

Table 5: Computer Engineering Discourse Topical Depth (Option 1).

Clause No.	Topical Depth				Topic No.
	1	2	3	4	
1		I	Jose Rizal University		2
2		I, I	immaculate		2
3		I, I	Core Values Responsible Considerate Courteous		3 2 3
4				Changes of behavior	4 3 3
5		I	values & morals		2 3
	Inner hero	I'm			2 1
6		I		Irresponsible & trouble maker personality	2 4
7	Inner hero				1 2
8		me, my	Rizalian, my		2
9	Inner hero				1 2
		me, Rizalians			
10	It				1

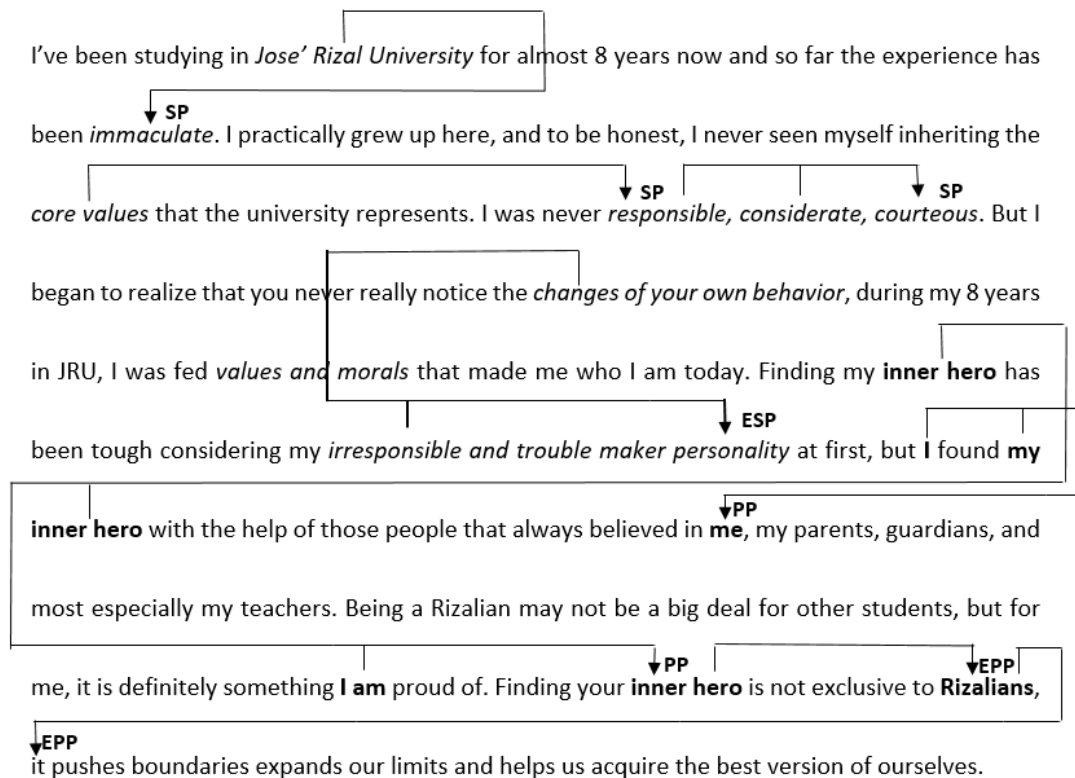
Table 6: Computer Engineering Discourse Topical Depth (Option 2)

Table 5 reveals the Computer Engineering Discourse Topical Depth (Option 1) which shares the same data with Table 6 (Option 2) although in a different way of mapping out topical depth analysis. It appears that Paragraph No. 1 (CE-R1-WD) has 4 Parallel Progressions (PP), as shown in Clauses 5, 7, 9 and 10, with one topical subject as “Inner Hero” repeated 3 times; and a Pronoun Reference “It” pertains to “Inner Hero.” fourteen Extended Parallel Progressions (EPP) as revealed in Clauses 1 (I), 2 (I,I), 3 (I, I), 5 (I, I’m), 6 (I), 7 (me, my), 8

(Rizalian, my), & 9 (me, Rizalians); seven Sequential Progressions (SP) as revealed in Clauses 1, 3, & 5 being “Jose Rizal University”, “core values”, “responsible”, “considerate”, “courteous”, “values & morals”; three Extended Sequential Progressions (ESP) like “changes of behavior”, “irresponsible & trouble maker personality.” Hence, it could be noted that the main topic subject “Inner Hero” appears in the middle of the paragraph, Clause 5, then Clause 7 & Clause 9. This style of writing conforms to the contention of Liiza Lautamate that the “third element” is the topical subject (TS), which is the topic of the phrase or what is discussed in the clause. Although she did discredit the fact that some writers may indicate the topical subject at the first clause of the first paragraph or the next.

4. CONCLUSION

The present study attempted to test the validity and utility of the Lautamatti TSA Model derived from the Topic-Comment Theory since 1987. Significantly, the results of the physical structure analysis and topical structure analysis of the written discourses of college students reflected the findings from earlier studies. The students’ discourses remained unedited in the conduct, analysis, and completion of the survey so that authentic results could be derived from authentic data. Consequently, the study’s findings cannot be taken as a generalization for the entire university, instead, it only holds to the chosen subjects. Additionally, the findings serve as a “flare” to signal that there is a felt need to revisit the existing curriculums across colleges of JRU and perhaps include a technical writing course to enhance the writing skills of students, because writing has been identified and reported as part of the 6th Annual Global Skills Report of 2024 for students to acquire proficiently. Hence, the urgency to highlight this skill along with speaking skills need to be underscored.

Notably, TSA was originally conceived to apply to English text alone, as this framework proved to be an effective means of identifying the degree of coherence among the texts written by non-English writers and less mature writers of the target language. Simpson (2000) recommended other academic fields and other types of writing be explored to test the workability of the framework.

5. RECOMMENDATIONS

Writing has always been regarded as the “bane” of academic work rather than the “bone” because it is by far the most challenging skill among the three others (listening, speaking, and reading) in learning a language. The present study has just unravelled that writing has remained an uphill battle to be fought with and won in the academic arena. In writing, beginning writers or less mature ones need to have a thorough knowledge of grammar and adequate vocabulary, as these are essential elements of writing using the TSA model or even other writing frameworks.

Hence, the recent findings will address the joint program of the Commission on Higher Education (CHED) and the Government-Academe-Industry Network (GAIN) - the National Roadmap for Global Competitiveness in Communication Skills (NRGCCS) with the purpose of molding and honing the students in higher education institutions (HEIs) with transnational skills in the target language for lifelong learning and productive living.

REFERENCES

- Carter, N, Bryant-Lukosius, D, DiCenso, A, Blythe, J, & Neville, A. J. (2014). The use of triangulation in qualitative research. *Oncol Nurs Forum*. 41(5), pp. 545-7. <http://dx.doi.org.libezproxy.open.ac.uk/10.1188/14.ONF.545-547>
- Catabay, M. (2023). Analysis of Second language learners’ errors in composition writing: basis for the proposed English remedial program in higher institution. *Journal of Law and Sustainable Development*. ISSN: 2764-4170
- Çepni, G. & Bada, E., (2019). The impact of teaching topical structure analysis on writing performance of Turkish EFL speakers. *PEOPLE: International Journal of Social Sciences*. ISSN:2454-5899.DOI-<https://dx.doi.org/10.20319/pijss.2019.51.366378>
- Chan, W. S. (2018). Topical structure analysis. ISBN: 978-1-911185-75-8 (Online) ©2018. The Author | ©AICSSH-AICMSE 2018 August (Oxford) | ©2018 FLE Learning
- Chaya, W. (2016). The effect of topical structure analysis instruction on university students’ writing quality. *English Language Teaching*; Vol. 6, No. 7; 2013, ISSN 1916-4742 E-ISSN 1916-4750. Canadian Center of Science and Education
- Connor, U. (1996). *Contrastive rhetoric: Cross-cultural aspects of second language writing*. Cambridge: Cambridge University Press
- Connor, U., & Farmer, M. (1990). The teaching of TSA as a revision strategy for ESL writers. In B. Kroll (Ed.), *Second language writing: research insights for the classroom* (pp. 126-139). Cambridge University Press
- Creswell, J. W. & Creswell, J.D. (2023). *Research design: Qualitative, quantitative, and mixed methods approaches*. SAGE Publishing
- Dijk, Teun A. van (1977). *Discourse and power*. Houndmills, Basingstoke, Hampshire: Palgrave Macmillan. ISBN 9781137072993.
- Enosh, G., Tzafir, S. S., & Stolovy, T. (2014). The development of client violence questionnaire (CVQ). *Journal of Mixed Methods Research*, 9(3), 273–290. <https://doi.org/10.1177/1558689814525263>
- Fetters, M. D. (2016). Haven’t we always been doing mixed methods research? Lessons learned from the development of the horseless carriage. *Journal of Mixed Methods Research*, 10(1), 3–11. <https://doi.org/10.1177/1558689815620883>
- Genç, B., Darmaz, V., & Ülkersoy, N. (2018). An analysis of topical structure in argumentative essays of EFL learners. *SDU International Journal of Educational Studies*, 5(2), 33-39. <https://doi.org/10.33710/sduijes.479353>
- Halliday, M.A.K. & Hasan, R. (2013). *Cohesion in English*. London. eBook ISBN9781315836010. DOI<https://doi.org/10.4324/9781315836010>
- Halliday, M. A. (1985). *An introduction to functional grammar*. London: Edward Arnold
- Hart, E. K. & Annear, C. M. (2020). *Research coherence: A framework for successful student research*. College teaching, DOI: 10.1080/87567555.2020.1758022
- Hasan, R. (1984). Coherence and cohesive harmony. In J. Flood (Ed) *Understanding Reading Comprehension: Cognition, Language, and the Structure of Prose*. Newark, DE: International Reading Association

- Hellalet, N (2013). Textual coherence in EFL student writing. *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*. e-ISSN: 2279-0837, p-ISSN: 2279-0845, www.Iosrjournals.Org
- Johnson, R. B. & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14–26. <https://doi.org/10.3102/0013189X033007014>
- Lautamatti, L. (1987). *Observations on the development of the topic in simplified discourse*. In U. Connor & R. B. Kaplan (Eds.), *Writing across languages: Analysis of L2 Texts* (pp. 87-114). Reading, MA: Addison-Wesley Publishing Company Inc
- Liangprayoon, S., Chaya, W., ackraphong, T.T. (2013). The effect of topical structure analysis instruction on university students' writing quality. *English Language Teaching*; Vol. 6, No. 7; 2013 doi:10.5539/elt.v6n7p60
- Maxwell, J. A. (2016). Expanding the history and range of mixed methods research. *Journal of Mixed Methods Research*, 10(1), 12–27. <https://doi.org/10.1177/155868981557113>
- Mensah, I. J. & Tabiri, M. O. (2020). Review of literature on coherence and cohesion in text quality among ESL students. <https://www.researchgate.net/publication/349608323>
- Nunan, David (1989). *Designing tasks for the communicative classroom*. Cambridge University Press
- Nunan D. Communicative tasks and the language curriculum. *TESOL Quarterly*. 1991; 25(2):279- 295
- Pajares, F. & Johnson, M. (1996). The role of self-efficacy, outcome expectancy, and apprehension. *Research in the Teaching of English*, 28(3), 318-329
- Poudel, A. P. (2018). Academic writing: Coherence and cohesion in paragraph <https://www.researchgate.net/publication/322537095>
- Regala-Flores, E., & Yin, K. (2015). Topical structure analysis as an assessment tool in student academic writing. *3L the Southeast Asian Journal of English Language Studies*, 21(01), 103– 115. <https://doi.org/10.17576/3L-2015-2101-10>
- Schneider, M. & Connor, U. (1991). Analyzing topical structure: Not all topics are equal. *Studies in Second Language Acquisition* 12, 411-427 <http://dx.doi.org/10.1017/S0272263100009505>
- Shabana, N. O. (2018). Topical structure analysis: Assessing first-year Egyptian university students' internal coherence of their EFL writing. *Springer eBooks* (pp. 53–78). https://doi.org/10.1007/978-3-319-64104-1_3
- Sanders, Spooren, & Noordman. (1992). Toward a taxonomy of coherence relations Tilburg university: discourse processes
- Saville, N. (2012). Applying a model for investigating the impact of language assessment within educational contexts: *The Cambridge ESOL Approach*. Cambridge ESOL: Research Notes 50
- Siekman, L. Parr, J. M., Busse, V. (2022). *Structure and coherence as challenges in composition: A study of assessing less proficient EFL writers' text quality* <https://doi.org/10.1016/j.asw.2022.100672>. www.elsevier.com/locate/asw
- Simpson, J. (2000). Topical structure analysis of academic paragraphs in English and Spanish. *Journal of second language writing*. DOI: 10.1016/S1060-3743(00)00029-1
- Swales, J. (2023). *The C.A.R.S. Model*. The USC libraries. URL:<https://libguides.usc.edu/writing/Guide>
- van Dijk, T.A. (1977). *Text and context: Explorations in the semantics and pragmatics of discourse*. London: Longman
- Wang, Y. & Guo, M. (2014). On the theoretical framework of the study of discourse cohesion and coherence. *Studies in Literature and Language*
- Witte, et al. (1981). *Coherence, cohesion and writing quality*. College composition and communication. 32 (2), 189-204. Retrieved from <https://www.la.utexas.edu/users/faigley/work/coherence.pdf>
- Witte, S. P. (1983). Topical structure and revision: An exploratory study. College composition and communication, 34, 313-341. Southern Illinois University Press
- Witte, S.P. (1983). Topical structure and writing quality: Some possible text- based explanations of readers' judgements of students' writing. *Visible Language*, 17, 177- 205
- Yu, X.L. (2021). A Study on the role of sentence structure analysis in English learning. Open Access Library Journal, 8: e7859. <https://doi.org/10.4236/oalib.1107859>