

# Comparative Analysis of Reading Strategies among Tertiary ESL Learners: A Case Study

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## ABSTRACT

In comprehending a text, the use of relevant reading strategies by the students is essential in order to assist them in understanding the reading material which subsequently improves their academic performance. However, insufficient comparative studies have investigated the reading strategies used by ESL learners at tertiary level based on their academic achievement. The aim of this study is to investigate the type of reading strategies employed by tertiary level ESL learners during the three phases of reading which are during pre, while and post reading for both high and low achievers. A total of 60 undergraduate ESL learners from a private university in Malaysia answered a set of reading strategies questionnaires adapted from Strategy Of Reading Skills (SORS). It was found that high achievers use metacognitive strategies more frequently as compared to ESL low achievers who are inclined to use bottom-up strategies. The findings suggest that to be a successful reader, the use of appropriate reading strategies should be encouraged to help students to comprehend the reading text. The data obtained is useful for teachers who provide variation in reading activities targeting both high and low achievers ESL learners.

**Keywords:** Bottom-Up, Metacognitive Strategies, Reading Strategies, Top-Down

## INTRODUCTION

Reading is an essential skill for an individual to decode and obtain information. For English as a Second Language (ESL) learners, reading is one of the fundamental receptive skills to be acquired before mastering the two productive skills i.e. speaking and writing. Therefore, implementing reading strategies is necessary for ESL learners because it is part of the language learning process. Reading strategies can be divided into three which include Bottom-up (the association of letters, syllables words and text information), Top-down (how one perceives the world and interpret new information drawing from background knowledge) (A. B., Jumariati & Nasrullah, 2021) and metacognitive strategies (the intentional and conscious process of used by readers during comprehending a text) (Maasum & Maaruf, 2012).

The educational institutions in Malaysia constantly aim to provide the best to English as a Second Language Learners (ESL) to improve and master their language skills. The introduction of the English Language Education Reform in Malaysia: The Roadmap 2015-2025 by the Ministry of Education reflects the country's resilient pledge to significantly enhance Malaysia's English language proficiency (Mohd Don & Abdullah, 2019). Despite the significant effort, an analysis of the national examination SPM of 2022, revealed that a total of 52, 674 candidates (14.3%) did not achieve the passing grade in English. Another analysis of Malaysian University Entrance Test (MUET) results of session 1/2021, only (0.31%) and (7.13%) achieve the Common European Framework (CEFR) band C1+ and C1 respectively for 800/3 Reading. Thus, it is significant to

examine the underlying factors of contributing to the persistent challenge, specifically targeting reading difficulties.

Most of the research works on reading strategies concentrated on strategy applications and their effectiveness in the reading process. Nevertheless, the differences in the reading strategy deployment based on the levels of the learners are insufficient. The previous study suggests that reading strategies were generally applied by two groups of ESL learners, high and low achievers (Nordin, Rashid, Syed Zubir & Sadjirin, 2013). So, it is necessary to further examine the use of reading strategies applied by high and low achiever learners in the current year. Consequently, this study aims to achieve the following objectives and answer the research questions as below:

1. To determine the preferred and least preferred reading strategies utilized by ESL learners.
2. To identify the reading approaches employed by high-performing students.
3. To identify the reading approaches employed by low-performing students.

## LITERATURE REVIEW

Suraprajit (2019), defined reading strategies as a particular technique of encountering a task or a problem, modes of performance to accomplish a particular end and designated plan in controlling certain information. The reading strategies give benefits to readers in helping them to acquire new knowledge and retrieval of information. Moreover, reading strategies can eliminate difficulties when they are having a problem in comprehending a reading text (Suraprajit, 2019). However, ESL learners often confront a lot of difficulties during reading such as inadequate vocabulary, structural complexity, lexical efficiency, poor reading skills, language inaccessibility and another major cause that makes ESL learners fail in reading is due to their lack of interest in reading.

In addition, reading strategies have been defined as a specific plan that the readers use to help them to understand the reading text (Roomy & Alhawsawi, 2019). The great readers use a lot of strategies to help them in comprehending the reading text because the strategy used is flexible and can be adapted to meet the requirement of the reading task (Roomy & Alhawsawi, 2019). Assisting students to be aware of and master diverse reading strategies can help them to be proficient and independent readers (Roomy & Alhawsawi, 2019). Reading strategies are planned, aiming to manipulate and control the reader's effort to decode the text, make sense of the words and to comprehend the meanings of the text. (Albiladi, 2019). Besides, the reader can use this reading strategy to show the way to comprehend the text, identify the type of the reading materials and think of the task based on the text (Albiladi, 2019). In addition, reading strategies are related to brain function (Albiladi, 2019). When learners are reading a text and at the same time, they also try to figure out the meaning of the text that they are reading. Being aware of the comprehension process is very important for ESL learners during reading. So, the guidance and scaffolding from the teachers are needed for the students to help them understand and comprehend the reading material where they seem to lack in vocabulary, and this problem hinders their reading comprehension (Albiladi, 2019).

Bottom-up model is a decoding process of constructing the meaning from the passage from the "bottom" like letters and words to the larger units at "the top" like phrases, clauses and linkage. In order to construct their textual meaning from a text, readers primarily focus on the reading text, beginning with decoding the text's letters, words, and syntactic elements when reading, but they neglect their previous and background information (Suraprajit, 2019). This model refers to a single-direction part-to-whole processing of a written or printed text that is also known as decoding. This model mirrors the reading jigsaw of text because the readers have to assembling all the puzzles or individual units of text to the right pieces together where it is helping the readers to construct an overall interpretation of the reading text where they use metal data-processing device to put linguistic signal in order such as start from letters then morphemes and then syllables, net will be words, phrases and discourse markers. In a bottom-up model, readers put high emphasis on individual words, going through the text repeatedly and stopping for grammatical difficulties (Eunjeo, 2009, as cited in Surapjit, 2019). Valanta (2016) also states that bottom-up theory is readers read progress in learning parts of language such as

words to understand the meaning of the whole text. Bottom-up models in reading comprehension is a process of uniting pieces of words of a reading text into one whole complete reading text in order to understand the whole meaning of the text where it is like the readers are playing a jigsaw puzzle. In order to comprehend the author's written message, the readers will begin with translating the parts of written language such as letters into speech sounds. Then, by forming the letters together they form certain words and those combined words unite to understand the message from the text (Valanta, 2016).

The top-down model concept is about guessing the meaning of the target reading text. Goodman (1971) study's (as cited in Suraprajit, 2019) comments that the top-down model as "a psycholinguistic guessing game" (p. 455). The researcher explained that the readers who use this kind of model will predict the text's meaning primarily based on their prior or background knowledge. Reading theorists see reading as an engaging process-driven activity where the readers constantly create meaning from the text by merging their background knowledge and their linguistics expertise (Anderson, 1984; Noli & Sabariah, 2011). Thus, to find out the overall purposes or main ideas of the reading text, the readers apply this model by interpreting assumptions or drawing conclusions. Also, the top-down model is known as a cognitive process where the mind of the reader starts to process in bringing the readers' experience, prediction and background or world knowledge in order to understand and comprehend the text in which these are playing an important role in this model (Suraprajit, 2019). General strategies or global strategies is very much alike to this model where it uses a tool to predict the text, construct a goal of reading and independent reading. The readers use their own intelligence and experience to comprehend the text is a concept of this model (Suraprajit, 2019).

Paris and Winograd (1990) mention that metacognitive strategies should be viewed as a chance to empower students with the knowledge and confidence they need to manage their learning. Meanwhile, Anderson (2006) defined metacognitive reading as the ability to make your thinking visible. Readers use metacognitive strategies to monitor their mental processes. Metacognitive methods are higher-order skills that assist readers in determining one's understanding when reading a text. These techniques help readers in becoming more aware of their reading process and themselves as learners. Learners can use these strategies to discover available resources, determine which of these resources are crucial for the task at hand, and set comprehension goals. Likewise, according to Semtin and Maniam (2015), metacognitive methods necessitate learning planning, thinking about the learning process, monitoring one's comprehension, and evaluating information after finishing a task. Singhal (2001) also believes that the learners undertake metacognitive behaviours to plan, arrange, and evaluate their learning. Such strategies include focused attention and self-evaluation, organisation, goal planning and achievement, seeking to practise opportunities, etc. Self-monitoring and error correction are two other examples of metacognitive strategies in the context of reading.

Various studies have been completed previously related to reading strategies. For instance, one of the previous studies, Semtin and Maniam (2015), revealed that the frequency of using cognitive strategies is nearly equivalent to the use of metacognitive strategies. Öztürk (2018) on the other hand reported that the student teachers from two prominent universities in Turkey mainly employ metacognitive strategies in terms of Problem Solving in reading. Rastlegar, Kermani, and Khabir (2017) in their study used various quantitative techniques to test their predictions on the association between metacognitive reading strategies and reading comprehension achievement of ESL students in Iran. Their findings imply a link between the adoption of metacognitive reading methods and reading comprehension achievements. Furthermore, the data show that students who can apply metacognitive reading strategies are more successful in reading. Suraprajit (2019) explores the use of reading strategies by concentrating on bottom-up and top-down models for academic and business texts among Thai tertiary students in Thailand. According to the study, top-down reading methods were utilised the most for academic and business reading, while bottom-up reading strategies were used the least for both reading materials.

## METHOD

The research design employed in this study utilized quantitative methods to gather and analyze data aimed at identifying the reading strategies employed by high and low English as a Second Language (ESL) achiever

undergraduates at a private university in Malaysia during pre-reading, while-reading, and post-reading phases. Quantitative method was employed, involving the use of questionnaires to collect data from participants, specifically focusing on the reading strategies employed during various phases of text engagement. For the comparative analysis, the participants were divided into two groups: ESL high achievers (CGPA >3.50) and ESL low achievers (CGPA <2.50). Sixty undergraduate students were recruited using snowball sampling, with selection based on academic performance categorizing them as either high or low ESL achievers. The questionnaire, adapted from the Reading Strategy Questionnaire (RSQ) and the Strategy Of Reading Skills (SORS), consisted of 36 items related to Bottom-up, Top-down, and Metacognitive reading strategies across the three reading phases. Participants evaluated statements on a four-point Likert scale ranging from "never" to "always." For data analysis, the obtained responses were processed using the SPSS program (Version 26). Descriptive analysis, including means and standard deviations, was employed for each type of reading strategy item in each reading phase. The interpretation of the results followed the scale proposed by Oxford and Burry-Stock (1995), where a mean score of 3.5 or higher indicated high usage, 2.5 to 3.49 reflected moderate usage, and 2.49 and lower denoted low usage.

The results section of the study presented an overall analysis of the three types of reading strategies (Bottom-up, Top-down, and Metacognitive) during pre, while, and post-reading phases. Mean and standard deviation calculations were used to compare usage levels, with the Oxford and Burry-Stock (1995) scale serving as the benchmark for interpretation. The results aimed to shed light on the varying degrees of strategy usage across different reading phases, providing insights into the reading behaviors of ESL undergraduates.

## RESULTS AND DISCUSSION

The data collected is analysed in a form of descriptive statistics by doing an overall analysis of the three types of reading strategies employed by the ESL learners which are Bottom-up approach (BU), Top-down approach (TD) and Metacognitive strategies (M). Calculation of the mean and the standard deviation from the data collected will be compared for each item in three different reading phases which are pre, while and post reading by using Oxford and Burry-Stock (1995) indicator (0.1 - 2.49 = low usage, 2.5 - 3.49 = moderate usage, and 3.5 - 5.0 = high usage).

### The Least and Most Preferred Reading Strategies (Pre-Reading)

Table 1. The Least and Most Preferred Reading Strategies (Pre-Reading)

Pre-Reading				
Reading Strategies	Item	N	M	1 SD
Top Down	Before I read a text, I will predict the content from the title.	60	2.87	1.049
Top Down	Before I read a text, I will not quickly read a text to get general idea of the meaning.	60	2.58	.979
Bottom Up	Before I read a text, I will not translate every sentence into the first language.	60	2.70	.889
Bottom Up	Before I read a text, I will focus on the phrases and clauses in sentences.	60	2.73	1.056
Metacognitive	Before I read a text, I will preview the text to see what is it about before reading it.	60	2.73	1.056
Metacognitive	Before I read a text, I will set a purpose for reading.	60	2.48	1.017

Table 1 presents the most and least used types of reading strategies employed by the ESL learners during the pre-reading stage. Based on the table, the most employed reading strategies employed by the ESL undergraduate students is top-down approach where they often to predict the content from the title (mean=2.87) meanwhile, the least employed types of reading strategies used by ESL learners during pre-



reading are bottom-up approach where ESL students rarely focus on the phrases and clauses in sentences (mean=2.42).

**The Least and Most Preferred Reading Strategies (While-Reading)**

Table 2. The Least and Most Preferred Reading Strategies (While-Reading)

While-Reading				
Reading Strategies	Item	N	M	1 SD
Top Down	While I am reading a text, I will not skip sentences that I do not understand.	60	2.95	.946
Top Down	While I am reading a text, I will try to comprehend the text with translation.	60	2.60	.942
Bottom Up	While I am reading a text, I will not divide the sentence into parts by using slashes.	60	3.00	.974
Bottom Up	While I am reading a text, I will not read the whole text from the beginning to the end.	60	2.42	.996
Metacognitive	While I am reading a text, I will pay attention to the reading.	60	3.03	.956
Metacognitive	While I am reading a text, I will not analyse and evaluate the text.	60	2.63	.882

Table 2 demonstrates the most and least used types of reading strategies employed by the ESL learners during the while-reading stage. As can be seen from the table, the ESL undergraduate students preferred to use metacognitive strategies the most where they always pay close attention to their reading (mean=3.03) and the least preferred reading strategy in while reading is the bottom-up approach where they didn't prefer not to read the whole text from the beginning to the end (mean=2.42).

**The Least and Most Preferred Reading Strategies (Post-Reading)**

Table 3. The Least and Most Preferred Reading Strategies (Post-Reading)

While-Reading				
Reading Strategies	Item	N	M	1 SD
Top Down	After I read a text, I will be confirming or disconfirming my prediction.	60	2.73	1.023
Top Down	After I read a text, I will evaluate the text and the writer.	60	2.52	.911
Bottom Up	After I read a text, I will not read again the whole text loudly.	60	2.63	.918
Bottom Up	After I read a text, I will reread the difficult areas aloud.	60	2.50	1.172
Metacognitive	After I read a text, I ask myself questions I like to have answered in the text.	60	2.82	.965
Metacognitive	After I read a text, I do not go back and forth in the text to find a relationship among ideas in it.	60	2.57	.998

Table 3 presents the most and least used types of reading strategies employed by the ESL learners during the post-reading stage. As shown in table, ESL undergraduate students use metacognitive strategies the most where they preferred to ask themselves questions to have answered in the text (mean=2.82) and the least favourite types of reading strategies employed during post reading is bottom-up approach where the ESL undergraduate students prefer not to reread the difficult areas aloud. (mean=2.50).

### Reading Strategies (High Achievers)

Table 4. Reading Strategies High Achievers

Reading Strategies (High Achievers)					
Stages	Reading Strategies	Item	N	M	I SD
Pre	Top Down	Before I read a text, I will predict the content from the title.	30	3.33	.711
	Bottom Up	Before I read a text, I will not translate every sentence into first language.	30	2.83	.913
	Metacognitive	Before I read a text, I will preview the text to see what it is about before reading it.	30	3.4	.814
While	Top Down	While I am reading a text, I will not skip sentences that I do not understand.	30	3.43	.679
	Bottom Up	While I am reading a text, I will not try to not understand the meaning of each word in the next.	30	3	1.017
	Metacognitive	While I am reading, I will pay close attention to the reading.	30	3.6	.498
Post	Top Down	After I read a text, I will be confirming or disconfirming my prediction.	30	3.23	.728
	Bottom Up	After I read a text, I will summarize the main idea of the text	30	3.37	.809
	Metacognitive	After I read a text, I summarize what I read to reflect on important information in the text.	30	3.43	.679
		Valid N (listwise)	30		

As shown in Table 4, during pre-reading, high achiever learners employ metacognitive strategies the most for pre- (mean=3.4), while- (mean=3.6), and post- (mean=3.43) reading. Meanwhile, the least used reading strategy for high achiever learners are Bottom Up Approach pre- (mean=2.83), while- (mean=3), and post- (mean=3.23) reading.

### Reading Strategies (Low Achievers)

Table 5. Reading Strategies Low Achievers

Reading Strategies (Low Achievers)					
Stages	Reading Strategies	Item	N	M	I SD
Pre	Top Down	Before I read a text, I will not use my background knowledge for prediction	30	2.83	.699
	Bottom Up	Before I read a text, I will not focus on the sentence structures.	30	3.6	.808
	Metacognitive	Before I read a text, I will not decide what to read closely and what to ignore.	30	2.73	.868
While	Top Down	While I am reading a text, I will not skip sentences I do not understand.	30	2.90	.885
	Bottom Up	While I am reading a text, I will not divide the sentence into parts by using slashes.	30	3.7	.891
	Metacognitive	While I am reading, I will not take notes while reading to help me understand what I read.	30	2.6	.698
Post	Top Down	After I read a text, I will not summarise the text.	30	3.00	1.145
	Bottom Up	After I read a text, I will not read again the while text loudly.	30	3.47	.819
	Metacognitive	After I read a text, I will not discuss what I read with others to check my understanding	30	2.43	.679
		Valid N (listwise)	30		

As shown in Table 5, during reading, low achiever learners employ Bottom Up reading strategies the most for pre- (mean=3.6), while- (mean=3.7), and post- (mean=3.47) reading. Meanwhile, the least used reading strategy for high achiever learners are Bottom Up Approach pre- (mean=2.73), while- (mean=2.6), and post- (mean=2.43) reading.

## CONCLUSION

According to the findings, ESL undergraduates in the study predominantly utilized metacognitive reading strategies across the three phases of reading—pre-reading, while-reading, and post-reading. This particular strategy, which is also favored by ESL high achievers, involves a conscious monitoring of mental processes during reading, incorporating awareness, reasoning, and conscious thought to comprehend the text's content. As a frequently employed strategy, metacognitive approaches leverage learners' abilities to engage in visible thinking, utilizing problem-solving strategies, global approaches, and support strategies. This includes setting a purpose for reading, re-reading to enhance understanding, guessing unknown words from context, reading aloud or silently for cognitive meaningfulness, translation, and note-taking.

This finding aligns with the results of studies conducted by Semtin and Maniam (2015), Öztürk (2018), and Rastlegar, Kermani, and Khabir (2017). Semtin and Maniam (2015) reported higher mean frequencies of metacognitive strategy use compared to cognitive strategies, contributing to enhanced reading comprehension for ESL students. Öztürk (2018) observed that student teachers from reputable Turkish universities were not only aware of but also widely employed metacognitive strategies. Similarly, Rastlegar, Kermani, and Khabir (2017) established a correlation between adopting metacognitive reading methods and improved reading comprehension, emphasizing the success of students employing metacognitive strategies during reading. ESL undergraduate learners demonstrated a tendency to pay close attention to their reading, engaging in self-questioning to extract information from the text and employing previewing techniques to comprehend the content. This reflective approach aids in maintaining focus during reading and extracting key information from the text.

Conversely, the least employed reading strategies among ESL undergraduate learners were Bottom-Up approaches. This suggests a preference among ESL learners to avoid focusing on phrases and clauses in sentences, refrain from reading the entire text from start to finish, and bypass the repetition of challenging sections aloud. Despite being the least favored strategy, ESL low achievers tended to use the bottom-up approach to assist in text comprehension. This finding corresponds with studies conducted by Suraprajit (2019) and Valanta (2016), both of which identified the bottom-up approach as the least utilized reading strategy during pre-reading, while-reading, and post-reading. The possible reason for this preference may be a lack of awareness among ESL learners regarding the significance of focusing on phrases, reading the entire text, rereading challenging sections, dividing sentences into parts, and reading the text aloud, possibly perceiving such activities as time-consuming.

In conclusion, the study indicates that ESL undergraduate learners employ a moderate level of reading strategies. Metacognitive strategies were the most frequently used, while bottom-up strategies were the least favored. Additionally, ESL high achievers exhibited a higher frequency of metacognitive strategy usage compared to ESL low achievers, who leaned more toward employing bottom-up strategies during their reading activities. From the conclusion, it can be gathered the appropriate reading strategies need to be employed for learners across their proficiency. Educators should also encourage learners to use the proven effective strategies that could consequently benefit the low achiever learners.

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## REFERENCES

1. Anderson, J. C. (2000). *Assessing reading*. Cambridge University Press.
2. B., B. N., Jumariati, & Nasrullah. (2021). Bottom-up or top-down reading strategies: Reading strategies used by EFL students. *Advances in Social Science, Education and Humanities Research*. <https://doi.org/10.2991/assehr.k.211021.005>
3. Albiladi, W. S. (2019). Effective English reading strategies: English language learners' perceptions. *Preprints, 2019120127*. <https://doi.org/10.20944/preprints201912.0127.v1>
4. Maasum, T. N., & Maarof, N. (2012). Empowering ESL readers with metacognitive reading strategies. *Procedia - Social and Behavioral Sciences*, 69, 1250–1258. <https://doi.org/10.1016/j.sbspro.2012.12.058>
5. Mohd Don, Z., & Abdullah, M. H. (2019, May 22). The reform of English language education in Malaysia. *Free Malaysia Today*. <https://www.freemalaysiatoday.com/category/opinion/2019/05/22/the-reform-of-english-language-education-in-malaysia/>
6. Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Developmental Education*, 25(3), 2-11.
7. NGO Untuk Malaysia. (2023, June 22). 90,000 failed SPM Maths, 52,000 failed English, says NGO. *Free Malaysia Today*. <https://www.freemalaysiatoday.com/category/nation/2023/06/22/90000-failed-spm-maths-52000-failed-english-says-ngo/>
8. Noli, M. N., & Sabariah, M. R. (2011). Reading strategies of English as a second language (ESL) high and low achievers. *English Language Journal*, 4, 49-66.
9. Nordin, N. M., Rashid, S. Md., Zubir, S. I., & Sadjirin, R. (2013). Differences in reading strategies: How ESL learners really read. *Procedia - Social and Behavioral Sciences*, 90, 468–477. <https://doi.org/10.1016/j.sbspro.2013.07.116>
10. Öztürk, S. Y. (2018). Use of metacognitive online reading strategies by student teachers of English. *European Journal of Foreign Language Teaching*, 3(3), 17-31. <https://doi.org/10.5281/zenodo.1297197>
11. Paris, S. G., & Winograd, P. (1990). How metacognition can promote academic learning and instruction. In B. F. Jones & L. Idol (Eds.), *Dimensions of thinking and cognitive instruction* (pp. 15–51). Lawrence Erlbaum Associates.
12. Rastlegar, M., Kermani, E. M., & Khabir, M. (2017). The relationship between metacognitive reading strategies use and reading comprehension achievement of EFL learners. *Open Journal of Modern Linguistics*, 7(2), 65-80.
13. Romy, M. A., & Alhawsawi, S. (2019). Understanding reading strategies of EFL Saudi students. *English Language Teaching*, 12(6), 33-44. <https://doi.org/10.5539/elt.v12n6p33>
14. Romly, R., Badusah, J., & Maarof, N. (2017). Metacognitive online reading strategies in reading academic texts among ESL university students. *Transdisciplinary Education STED 2017*. [https://www.researchgate.net/publication/316273424\\_Metacognitive\\_online\\_reading\\_strategies\\_in\\_reading\\_academic\\_texts\\_among\\_ESL\\_university\\_students](https://www.researchgate.net/publication/316273424_Metacognitive_online_reading_strategies_in_reading_academic_texts_among_ESL_university_students)
15. Semtin, S. A., & Maniam, M. (2015). Reading strategies among ESL Malaysian secondary school students. *International Journal of Evaluation and Research in Education*, 4(2), 54-63. <https://doi.org/10.11591/ijere.v4i2.4492>
16. Sheorey, R., & Mokhtari, K. (2001). Coping with academic materials: Differences in the reading strategies of native and non-native readers. *System*, 29, 431-449.
17. Singhal, M. (2001). Reading proficiency, reading strategies, metacognitive awareness, and L2 readers. *The Reading Matrix* 1, 1-9.
18. Suraprajit, P. (2019). Bottom-up vs top-down model: The perception of reading strategies among Thai university students. *Journal of Language Teaching and Research*, 10(3), 454-460. <https://doi.org/10.17507/jltr.1003.07>



19. Valanta, A. (2016). A comparative study of bottom-up and top-down approaches in maximizing reading comprehension. *Academia*.  
[https://www.academia.edu/25303130/A\\_COMPARATIVE\\_STUDY\\_OF\\_BOTTOM\\_UP\\_A](https://www.academia.edu/25303130/A_COMPARATIVE_STUDY_OF_BOTTOM_UP_A)