The Perception of Reading Strategies among Pakistani University Students: Bottom-Up VS Top-down Model

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ABSTRACT

Reading strategies play a vital role in improving reading comprehension among students whose first language is not English. In Pakistan, English is widely used as a second language in higher education, making effective reading strategies essential for students' academic success. The use of reading strategies helps learners understand texts more deeply and complete their academic tasks effectively. The present study investigates the use of reading strategies by focusing on the bottom-up and top-down models in both academic and business texts among Pakistani university students. A total of 150 undergraduate students from different universities in Pakistan participated in this study. A 45 item questionnaire was distributed to the participants to collect data. The findings revealed that top-down reading strategies were used more frequently by students when reading both academic and business texts, while bottom-up reading strategies were used less frequently. The results suggest that future studies should include a larger number of participants, examine the relationship between language proficiency and strategy use, conduct in-depth interviews, and compare the strategies used by low- and high-proficiency readers.

Keywords: *Top-Down Model, Bottom-Up Model, Academic Text*

INTRODUCTION

English plays a significant role in societies across the world. Besides speaking, writing, and listening, reading is also an essential skill for individuals who wish to communicate effectively. Chawwang (2008) emphasized that reading is one of the most important skills because it serves as a valuable tool for gaining knowledge. Since English is used in both academic settings and daily life, it has become a lifelong skill for many individuals (Kucukoglu, 2013). Without strong reading abilities, individuals may lose opportunities for personal development as well as career success (Anderson et al., 1985). Therefore, students who aim to gain a deeper understanding of texts must develop appropriate reading techniques or strategies. The ability

to read effectively is closely connected to how much success a person can achieve in both personal and professional contexts (Block & Israel, 2005).

Reading also fulfills a variety of purposes. First, it can serve as a source of relaxation. Many people enjoy reading their favorite books during their free time. Second, reading plays an important role in professional and business environments. For example, professionals often deal with numerous emails and written documents in their daily work, and effective reading skills support such communication. Third, reading is often done for the purpose of gaining knowledge. University students, for instance, are usually required to read academic books, journals, and other scholarly materials in the courses they enroll in. These different purposes clearly demonstrate the importance of reading skills. In Pakistan, reading is also considered highly important, particularly reading in English. This is because English functions as a key language in higher education, business communication, and international collaboration. It also helps Pakistani professionals and students communicate with individuals from other countries where English is widely used for various academic and professional purposes.

Despite its importance, reading in English is still considered challenging for many learners. According to PISA (2015), the Programme for International Student Assessment reported that the proportion of low achievers in reading in several countries remains below the Organization for Economic Co-operation and Development (OECD) average, which is around 20% of students in OECD countries. Similarly, reports from EF EPI (2017) indicated that English proficiency levels in many non-native English speaking countries remain relatively low and below the global average.

Reading difficulties have also been highlighted in numerous previous studies. Hayikaleng, Nair & Krishnasamy (2016) noted that students often experience problems when reading academic texts, which is consistent with the findings of Kasemsap & Lee (2015), who reported that many students demonstrate weak English reading comprehension skills. Several researchers have also explored the possible reasons behind these reading challenges. Chawwang (2008) examined English language problems among students and found that the difficulties mainly involve three areas: sentence structure, vocabulary, and reading comprehension. Another study conducted by Pangsapa (2012) investigated English reading problems among editorial staff. The results showed four major difficulties: misunderstanding technical terms, lack of vocabulary knowledge, difficulty dealing with complex and lengthy sentences containing multiple clauses or paragraphs, and unfamiliar words.

Because of these challenges, the use of reading strategies becomes essential in helping learners overcome reading difficulties. Garner (1987) described reading strategies as deliberate and purposeful activities used by active learners, often to overcome cognitive problems encountered during reading. Brown (2007a) defined reading strategies as specific approaches or techniques used to handle tasks or problems, as well as planned methods for managing and processing information to achieve particular goals. Various strategies can improve reading comprehension; however, the present study focuses specifically on top-down and bottom-up reading strategies among tertiary-level students when they read academic and business texts.

Top-down Model

The top-down model focuses on predicting or guessing the meaning of a text. Goodman (1971) described this model as "a psycholinguistic guessing game," suggesting that readers interpret texts primarily by relying on their background knowledge and prior experiences. This model is commonly applied when readers make assumptions, draw conclusions, identify the general purpose of a text, or determine its main ideas (Nuttall, 1996).

Furthermore, the top-down model is associated with cognitive processes in which text interpretation begins in the reader's mind. The meaning derived from the reader's knowledge, expectations, assumptions, and questions about the text is then confirmed by identifying letters and words present in the text (Aebersold & Field, 1997). In other words, readers activate their previous experiences and world knowledge to understand what they read. Correll & Eisterhold (1998) also argued that prediction and background knowledge play an essential role in this model. This approach allows readers to anticipate the content, establish reading objectives, and monitor their comprehension. Because of these features, the top-down model is similar to what Block (1986) referred to as general strategies and what Sheorey & Mokhtari (2001) described as global strategies.

Additionally, the top-down approach is often considered concept-driven, meaning that comprehension largely depends on what readers contribute to the reading process, such as their intelligence, experiences, and prior knowledge (Brown, 2007b; Abbott, 2010; Lui, 2010).

Bottom-up Model

The bottom-up model describes reading as a decoding process, where meaning is constructed by moving from smaller elements of language to larger units. This process begins with basic components such as letters and words and gradually builds toward larger structures like phrases, clauses, and sentence connections (Carrell & Eistenhold, 1983). In this approach, readers first decode the letters, words, and grammatical structures of a text before constructing its overall meaning. Unlike the top-down model, this process focuses mainly on the text itself and pays little attention to the reader's prior knowledge.

Dole et al. (1991) explained that the bottom-up model involves a single-direction process in which readers move from parts to the whole when interpreting written texts. This process is often referred to as decoding. Another way to understand this model is to view reading as assembling pieces of a puzzle. By putting together different textual elements correctly, readers gradually build a complete interpretation of the text (Celce-Murcia, 2001).

Brown (2007b) further described the bottom-up model as a type of data-processing system in which linguistic signals—such as letters, morphemes, syllables, words, phrases, and discourse markers—are processed in sequence. Eunjeo (2009) also explained that this model emphasizes careful attention to individual words, repeated reading, and pauses to resolve grammatical difficulties. Finally, Dambacher (2010) noted that bottom-up processes focus on interpreting sensory signals and are closely related to retrieving the mental representation of words.

Research Problem

Reading comprehension is an essential skill for university students, particularly in countries where English is used as a second language. In Pakistan, English is widely used in higher education, and students are frequently required to read academic books, research articles, and business-related materials. However, many university students face difficulties in understanding English texts due to limited vocabulary, complex sentence structures, and insufficient reading strategies. These challenges often affect their academic performance and ability to interpret information effectively.

Although reading strategies such as top-down and bottom-up approaches can help improve comprehension, many students are not fully aware of how to apply these strategies when reading different types of texts. In particular, there is limited research examining how Pakistani university students use reading strategies when dealing with academic and business texts. Therefore, it is important to investigate the types and frequency

of reading strategies used by university students and to compare how these strategies vary across different text types.

Research Objectives

- To investigate the types and frequency of reading strategies used when reading academic texts based on the top-down and bottom-up models among university students in Pakistan.

- To examine the types and frequency of reading strategies used when reading business texts based on the top-down and bottom-up models among university students in Pakistan.

- To compare the reading strategies used by university students when reading academic texts and business texts.

Research Questions

1. What types and frequency of reading strategies based on the top-down and bottom-up models are used by university students in Pakistan when reading academic texts?

2. What types and frequency of reading strategies based on the top-down and bottom-up models are used by university students in Pakistan when reading business texts?

1. Is there any difference in the reading strategies used by university students when reading academic texts compared to business texts?

LITERATURE REVIEW

Several researchers (Block, 1986; Carrell, 1989; and Kong, 2006) have categorized reading strategies into two primary groups. The first category includes bottom-up or local strategies, which focus on elements such as letters, vocabulary, and textual details, and top-down or global strategies, which involve the use of background knowledge, understanding the general meaning of the text, and recognizing the overall structure of the text. The second category includes cognitive strategies, which are associated with processing the target language, and metacognitive strategies, which relate to self-monitoring, self-regulation, and managing one's own learning process. The current study concentrates on the first category, specifically bottom-up and top-down reading strategies.

Numerous previous studies have examined the bottom-up and top-down models of reading strategies. For example, Oranpattanachai (2010) explored how reading proficiency influences the reading processes of Thai pre-engineering students. The results indicated that the key difference between high-proficiency and low-proficiency readers was the frequency with which they used reading strategies, particularly top-down strategies, which were used more frequently by proficient readers.

Similarly, Yildiz-Genc (2009) studied the relationship between first language (L1) and second language (L2) reading, focusing on the types of reading strategies used by Turkish learners of English as a foreign language. The findings revealed that students applied both bottom-up and top-down strategies while reading texts in their second language. However, the use of top-down strategies was more frequent in both L1 and L2 reading, whereas bottom-up strategies were used less frequently and in fewer forms.

In addition, Geladari, Griva & Mastrothanasis (2010) reported that proficient readers tend to employ a wider range of top-down strategies. In contrast, readers with lower proficiency levels often depend more heavily

on bottom-up strategies, particularly for decoding words, and they may lack awareness of the overall reading process.

On the other hand, Boonkongsaen, Sujinpram & Verapreyagoon (2016) investigated the English reading strategies used by Thai science students. Their findings indicated that the participants mainly relied on bottom-up strategies when reading English texts.

Furthermore, several studies (Huang, Chern, & Lin, 2009; Yuksel & Yuksel, 2012; Surattanasing & Gampper, 2013; Saengpakdeejit, 2014; Nisbet & Huang, 2015; Wright, 2015; Yousefian, 2015; and Zare & Maftoon, 2015) have examined reading strategies among students by focusing on problem-solving strategies, which are associated with bottom-up processing, global strategies, which relate to top-down processing, and support strategies, which are also connected to bottom-up processing (Mokhtari & Sheorey, 2002).

RESEARCH METHOD

Participants

The participants of this study consisted of 150 undergraduate students from the Faculty of Management Sciences and the Faculty of Economics at a university in Pakistan. A non-random sampling method was used to recruit the participants. Among the students from the Faculty of Economics, there were 35 males (25.90%) and 100 females (74.10%). In the Faculty of Management Sciences, the participants included 25 males (14.82%), 114 females (84.44%), and 3 LGBT students (0.74%).

Students from the Faculty of Management Sciences were enrolled in a course titled Analytical Reading for Business, which mainly focuses on business-related reading materials. In contrast, students from the Faculty of Economics were taking a Technical English course, which focuses primarily on reading academic texts.

Instrument

The research instrument used in this study was a questionnaire adapted from Fevziye (2006), who investigated the awareness of reading strategies among university students in Turkey. The questionnaire in the current study was designed to collect information about the reading strategies used by Pakistani undergraduate students, particularly focusing on bottom-up and top-down reading strategies.

The questionnaire consisted of two main sections: personal information and reading strategy use. In total, it included 45 items, comprising 15 bottom-up strategies and 30 top-down strategies. These items were further organized into three categories:

- Strategies used before reading a text (pre-reading)

- Strategies used while reading a text (while-reading)

- Strategies used after reading a text (post-reading)

Participants were asked to indicate how frequently they used each strategy by responding on a five-point Likert scale, ranging from (1) never or not sure, (2) rarely, (3) sometimes, (4) often, and (5) almost always.

Data Collection and Analysis

The questionnaires were distributed to the participants at the end of their course. Before completing the questionnaire, the researcher informed the students that their responses would not influence their final course grades. Participants were encouraged to provide honest responses when rating each item. They were also told that their feedback would help improve and develop the reading courses offered at the university.

After collecting the completed questionnaires, the data were analyzed using descriptive statistical analysis in order to identify the types and frequency of reading strategies used by the students.

RESULTS

Table 1

The Most Used Strategies in Reading Academic Text

No.	Reading Strategy	Mean	SD
1	Visuals (graphs, pictures, & tables) are important for my reading.	3.87	1.00
2	I look at the comprehension questions before reading the text.	3.85	1.13
3	I change reading speed depending on the difficulty of a text.	3.76	1.02
4	I use my background knowledge about the topic for my reading.	3.71	0.94
5	I consider the title to predict the content.	3.66	0.93

Table 1 illustrates the five most frequently used strategies in academic reading among the participants. These strategies include:

1. "Visuals such as graphs, pictures, and tables are important for my reading," which is applied before reading and falls under the top-down strategy.

2. "I look at the comprehension questions before reading the text," which is applied while reading and is categorized as a top-down strategy.

3. "I change reading speed depending on the difficulty of a text," which occurs during reading and belongs to the bottom-up strategy.

4. "I use my background knowledge about the topic for my reading," which is used before reading and represents a top-down strategy.

5. "I consider the title to predict the content," which is also used before reading and is part of the top-down strategy.

Based on the five-point Likert scale interpretation (1.0–2.4 = low use, 2.5–3.4 = medium use, and 3.5–5.0 = high use), the mean scores of all five strategies fall within the high-use category.

Table 2

The Least Used Strategies in Reading Academic Text

No.	Reading Strategy	Mean	SD
1	I read aloud the entire text.	2.26	1.08
2	After reading the text in detail, I evaluate the text and the writer's viewpoint.	2.36	0.99
3	I try to understand the text without translating it into my native language.	2.50	1.18
4	I use slashes to divide a sentence grammatically.	2.56	1.09
5	If I face difficult parts, I read aloud.	2.62	1.29

Table 2 shows the five least frequently used strategies in academic reading. According to the mean scores on the Likert scale, the first two strategies — "I read aloud the entire text" (used while reading and categorized as a bottom-up strategy) and "After reading the text in detail, I evaluate the text and the writer's viewpoint" (used after reading and categorized as a top-down strategy) — fall within the low-use category.

The remaining strategies — "I try to understand the text without translating it into my native language," "I use slashes to divide a sentence grammatically," and "If I face difficult parts, I read aloud" — are classified under the medium-use category. These strategies are mainly used during reading, with some belonging to top-down strategies and others to bottom-up strategies.

Table 3

The Most Used Strategies in Reading Business Text

No.	Reading Strategy	Mean	SD
1	I consider title to predict the content.	3.91	0.91
2	I use my background knowledge about the topic for my reading.	3.88	0.88
3	Visuals (graphs, pictures, & tables) are important for my reading.	3.85	0.96
4	I link the content with what I already know.	3.74	0.84
5	I underline important parts.	3.72	1.06

Table 3 presents the five most commonly used strategies in business reading. These include:

1. "I consider the title to predict the content," used before reading and categorized as a top-down strategy.

2. "I use my background knowledge about the topic for my reading," also used before reading and classified as a top-down strategy.

3. "Visuals such as graphs, pictures, and tables are important for my reading," applied before reading and belonging to the top-down strategy.

4. "I link the content with what I already know," used during reading and categorized as a top-down strategy.

5. "I underline important parts," which occurs while reading and is also considered a top-down strategy.

Based on the five-point Likert scale, the mean values of all these strategies fall within the high-use level.

Table 4

The Least Used Strategies in Reading Business Text

No.	Reading Strategy	Mean	SD
1	I read aloud the entire text.	2.28	0.96
2	After reading the text in detail, I evaluate the text and the writer's viewpoint.	2.51	0.92
3	I pay attention to tenses.	2.52	0.95
4	I use slashes to divide a sentence grammatically.	2.54	1.02
5	I ask questions related to the text or what I have read.	2.70	0.82

Table 4 highlights the five least frequently used strategies in business reading. The strategy "I read aloud the entire text," which is used during reading and classified as a bottom-up strategy, was identified as the least used strategy and falls within the low-use category.

The other strategies — "After reading the text in detail, I evaluate the text and the writer's viewpoint," "I pay attention to tenses," "I use slashes to divide a sentence grammatically," and "I ask questions related to the text or what I have read" — fall within the medium-use category. These strategies involve both top-down and bottom-up processes and are typically applied either during reading or after reading the text.

DISCUSSION

The findings of the present study indicate that top-down strategies were the most frequently used reading strategies by the participants when reading both academic and business texts. Among the five most commonly used strategies, four top-down strategies were identified in academic reading, while all five strategies used in business reading were top-down strategies. Through the use of top-down strategies, students tend to predict the meaning and information contained in the text and rely on their background knowledge and prior experiences to interpret the material (Goodman, 1971; Block, 1986; Grabe, 1991; Correll & Eisterhold, 1998; Sheorey & Mokhtari, 2001; and Kong, 2006).

The results suggest that participants approached the reading tasks with a purpose in mind. They attempted to anticipate the ideas or themes of the text and used their previous knowledge to understand and obtain a general overview of the content (Yousefian, 2015). The findings of this study are consistent with previous research conducted by Huang, Chern, & Lin (2009); Oranpattanachai (2010); Yousefian (2015);

Boonkongsaen, Sujinpram, & Verapreyagoon (2016); and Yildiz-Genc (2009). Huang, Chern, & Lin (2009) reported that the use of reading strategies improves learners' comprehension, and global strategies (top-down strategies) play an important role in enhancing understanding, particularly among learners with lower proficiency levels.

Similarly, Yildiz-Genc (2009) suggested that the frequent use of top-down strategies in second language (L2) reading allows learners to compensate for limited language proficiency by relying on their prior knowledge of the topic or by predicting the content of the text. In addition, Geladari, Griva & Mastrothanasis (2010) and Oranpattanachai (2010) found that learners with higher proficiency levels tend to use more top-down strategies compared to those with lower proficiency. This may indicate that the participants in the present study possess a relatively strong reading ability.

Furthermore, the frequent use of top-down strategies during the pre-reading stage suggests that many students tend to prepare themselves before engaging with a text. In other words, they try to anticipate the content and ideas presented in the reading material so that they can gain an overall understanding of the writer's message.

In contrast, bottom-up strategies were identified as the least frequently used strategies for both academic and business reading. Many participants reported that they rarely read aloud, use slashes to analyze grammatical structure, or focus on verb tenses while reading. These findings are consistent with previous studies conducted by Ledger & Merga (2018); Yousefian (2015); Oranpattanachai (2010); and Yildiz-Genc (2009). Among these strategies, "reading aloud the entire text" was identified as the least frequently used strategy. This may suggest that participants do not consider oral language practices to be an important component of second language reading.

However, some scholars emphasize the importance of oral language in L2 reading. For instance, Ninsuwan (2015) highlighted that reading aloud can help students develop greater confidence in pronouncing unfamiliar words and can also assist in improving vocabulary retention. Additionally, the limited use of bottom-up strategies during and after reading may indicate that students prefer not to spend too much time analyzing detailed linguistic features while reading.

Another important finding is that there was no significant difference in the most and least frequently used strategies when comparing academic and business texts. The results show that university students relied primarily on top-down strategies in both contexts, while bottom-up strategies were used less frequently.

CONCLUSION

Overall, the results of this study show that students employ both top-down and bottom-up reading strategies during the three stages of reading: pre-reading, while-reading, and post-reading. However, top-down strategies were used more frequently when reading both academic and business texts, indicating a high level of usage, whereas bottom-up strategies were used less frequently, with usage levels ranging from medium to low. In other words, the findings reveal no significant differences in the most and least frequently used strategies between academic and business reading.

Additionally, the results provide valuable insights into the reading strategies used by university students in Pakistan. The findings suggest that students tend to apply reading strategies more frequently before beginning the reading process, which indicates that they usually plan and prepare themselves before engaging with the text. This preparation helps them gain an overview of the material and achieve deeper comprehension.

On the other hand, students appear to use fewer strategies during and after reading, which suggests that they may focus more on understanding the general meaning rather than analyzing the text in detail after reading it. Therefore, future research should examine the effects of reading strategies at different stages of reading, including pre-reading, while-reading, and post-reading. Furthermore, the findings suggest that different types of texts do not significantly influence the use of reading strategies, as the most and least frequently used strategies remained similar for both academic and business texts.

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