Exploring the Influence of Background Knowledge on Reading Anxiety

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ABSTRACT

This quantitative study investigates the influence of background knowledge on reading anxiety among university students across different disciplines and reading text preferences. Specifically, the study examines the relationships between background knowledge and various types of reading anxiety, including top-down, bottom-up, and classroom-related anxiety, while also exploring learners' perceptions of these constructs. A survey design was employed, involving a convenience sample of 111 university students from diverse academic backgrounds. Data were collected using a structured questionnaire adapted from Milao and Vibulphol (2020) and Zoghi (2012). The internal consistency of the adapted instrument within the current study context was confirmed via reliability testing, yielding a high overall Cronbach's alpha coefficient of .933. Collected data were statistically examined using descriptive statistics, independent samples t-tests, one-way Analysis of Variance (ANOVA), and Pearson bivariate correlation analysis via SPSS. The findings revealed that while background knowledge and reading anxiety do not differ significantly across academic disciplines, significant differences emerge based on reading text preferences (digital vs. hardcopy). Furthermore, background knowledge demonstrated strong, significant positive correlations with both top-down and bottom-up reading anxiety, and a moderate positive correlation with classroom reading anxiety. These findings offer valuable insights to inform pedagogical practices aimed at reducing anxiety and improving reading performance, though the use of a relatively small convenience sample may limit the broader generalizability of the findings and introduce potential sampling bias.

Keywords: Reading Strategies, Classroom Reading Anxiety, Top-Down, Bottom-Up

INTRODUCTION

Background of Study

As one of the pivotal skills in second language learning, mastering reading skills allows students to acquire knowledge, maximise their vocabulary capacity, and improve comprehension and understanding. Despite the importance, many students in English as a Second Language (ESL) classrooms experience obstacles, including reading anxiety, which impedes their academic performance and motivation. Dang's (2024) and Liu's (2025) studies have shown that reading anxiety has affected comprehension abilities, which can induce fear and apprehension if left unaddressed.

Another prominent factor associated with reading anxiety is background knowledge, which includes students' previous understanding, familiarity, readiness, and experiences of the subject being studied. Based on Smith et al. (2021), having sufficient background knowledge increases the ability to connect with the new materials and contents, which directly assists the students' understanding. Not having that – or lacking it, however, induces struggles to understand the text, which leads to frustrations and thus increased anxiety, suggesting the crucial role of background knowledge in reading comprehension.

There are several dimensions revolving around reading anxiety, including top-down, bottom-up, and classroom reading anxiety. Classroom reading anxiety refers to conditions experienced in a classroom environment, such as fear of negative evaluations, apprehension while being asked to read aloud, and fear of making mistakes while reading (Sardar et al., 2019), while top-down anxiety emerges from difficulties of understanding from limited experiences and knowledge; bottom-up anxiety, on the other hand, is accumulated from issues with grammar and decoding vocabulary (Tutoli et al., 2026).

Although past studies have explored reading anxiety and reading strategies, limited research has specifically examined how background knowledge influences different dimensions of reading anxiety, particularly top-down, bottom-up, and classroom reading anxiety among ESL learners. As most studies focus on vocabulary and grammar difficulties, there is a need to examine learners' prior knowledge and experiences. Therefore, this study seeks to investigate the influence of background knowledge on reading anxiety and to determine how reading strategies may help learners reduce anxiety during reading activities. The findings of this study may provide useful information for academicians specifically in ESL settings in designing effective reading instruction that promotes comprehension and lowers anxiety among ESL learners at the same time.

Statement of Problem

The acquisition of English proficiency is a cornerstone of the Malaysian Education Blueprint 2013-2025, aimed at producing highly competent graduates capable of competing in a globalized workforce. However, a significant barrier to achieving this mandate is the prevalence of Foreign Language Reading Anxiety (FLRA), which recent empirical studies confirm is a widespread psychological and cognitive hurdle among ESL students. When students experience high levels of reading anxiety, they develop a systemic dislike for English that creates a mental block, preventing them from engaging with the language and ultimately resulting in a decline in academic achievement (Saito, Garza & Horwitz, 1999).

The complexity of reading anxiety is heavily rooted in cognitive processing barriers. Students frequently struggle with bottom-up reading anxiety where they experienced the stress of decoding individual words and grammatical structures as well as top-down reading anxiety, where the inability to grasp the global meaning of a text causes deep frustration (Wu, 2011). Recent research highlights that these cognitive stressors are primarily triggered by text features such as unfamiliar vocabulary, topics, and cultural content. Fitrawati et al. (2023) found that encountering unknown words and unfamiliar topics is the single most dominant factor causing reading anxiety. Without sufficient background knowledge, learners experience heightened cultural uncertainty, reduced confidence, and significantly impaired reading comprehension (Ghaith, 2020; Dang, 2022). Furthermore, these psychological pressures are often exacerbated by the classroom environment (Aydin, 2013) and spill over into writing and speaking, creating a holistic communication deficit that diminishes graduate employability.

To mitigate these profound cognitive and psychological issues, recent literature explicitly calls for targeted instructional interventions. Fitrawati et al. (2023) recommend that educators proactively address unfamiliar language and topics by expanding students' background knowledge, while Dang (2024) suggests that future instructional practice must encourage strategy training such as problem-solving and global strategies to help students cope with text difficulty and lower their anxiety.

Answering these direct recommendations from current researchers, this study investigates the specific dimensions of background knowledge, strategy use, and environmental variables such as the impact of digital versus print mediums (Zhu, 2021) on reading anxiety. By exploring how these variables interact to influence cognitive stress, this research provides the nuanced data necessary to implement the specific confidence-building

and schema-activating interventions recommended by recent literature (Ghaith, 2020; Fitrawati et al., 2023). Ultimately, addressing these specific dimensions will help ensure that the goals of the national education blueprint are met and that graduates possess the linguistic competence required for professional success.

Objective of the Study and Research Questions

This study is done to explore the influence of background knowledge on reading anxiety. Specifically, this study is done to answer the following questions;

- Is there a significant relationship between background knowledge and reading anxiety across disciplines?

H_{01}: There is no significant relationship between background knowledge and reading anxiety across disciplines

- Is there a significant relationship between background knowledge and reading anxiety across reading text preference?

$H_{01}2$ There is no significant relationship between background knowledge and reading anxiety across reading text preference?

- How do learners perceive background knowledge in reading?
- How do learners perceive top-down reading?
- How do learners perceive bottom-up reading?
- How do learners perceive classroom teaching?
- Is there a relationship between background knowledge and different types of reading anxiety?

$H_{01}3$ There is no significant relationship between background knowledge and different types of reading anxiety

LITERATURE REVIEW

Theoretical Framework of the Study

Reading Strategies

The theoretical framework of reading strategies within academic settings is predominantly anchored in metacognitive development and Schema theory, which interact dynamically with affective variables like reading anxiety. Schema theory dictates that reading comprehension is not merely a passive decoding process but a transactional interaction where readers actively utilize pre-existing background knowledge (schemata) to construct meaning from a text (Solati et al., 2024). When readers confront highly unfamiliar texts lacking adequate background knowledge, cognitive friction occurs, which frequently activates domain-specific reading anxiety. According to Attentional Control Theory, this induced anxiety disrupts performance by flooding working memory with intrusive, anxious thoughts, thereby reducing the individual's cognitive capacity to process information effectively (Macdonald et al., 2021). To mitigate this cognitive overload, proficient readers deliberately employ targeted reading strategies such as global, problem-solving, and support strategies which serve as essential cognitive and metacognitive mechanisms to consciously manage comprehension barriers and regulate affective distress (Weinstein & Mayer, 1986). Consequently, a reader's ability to utilize strategic reading behaviors heavily mediates the relationship between their existing background knowledge and the level of reading anxiety they experience during text processing.

Reading Anxiety

In the context of language learning, Saito, Garza, and Horwitz (2002) define reading anxiety as a feeling of fear and worry while engaging in reading tasks in language classrooms. In both ESL and EFL settings, reading anxiety is acknowledged as a prominent key in affecting the comprehension level and overall academic achievement in the classroom. As put forward by Tsai and Lee (2018) and Öztürk (2023), having high reading anxiety has caused students to face difficulties in understanding text and vocabulary, apart from struggling with grammar, which eventually affects their abilities to apply reading strategies. As mentioned in the previous section, the dimensions of reading anxiety can be categorised into top-down, bottom-up, and classroom reading anxiety. Many studies have thus found that reading anxiety may reduce students' confidence and induce withdrawal (Ahmad, Hussain & Khan, 2019), as well as interfere with students' cognitive processing (Lui, 2025). On the other hand, Dang (2026) has also indicated that reading anxiety can be reduced by applying effective reading strategies and having ample knowledge on task subjects.

Past Studies

Past Studies on Reading Anxiety

Recent empirical studies show that foreign-language reading anxiety is common and is influenced by students' familiarity with reading content. In particular, unfamiliar topics or insufficient background knowledge worsen anxiety, whereas effective reading strategies tend to reduce it.

Many studies have examined reading anxiety and its causes. Dang (2022) investigated English-reading anxiety among 307 advanced Vietnamese university students and measured their topic familiarity (a proxy for background knowledge). Using the Saito et al. (1999) Foreign Language Reading Anxiety Scale (FLRAS) and a 5-point topic-familiarity questionnaire, the study found that 96.7% of learners had moderate reading anxiety. Crucially, higher familiarity with text topics (i.e. more background knowledge) was strongly negatively correlated with anxiety. It has found that students who knew more about a topic worried less about understanding the text, had more confidence, and felt less cultural uncertainty. The implication is that teachers should build students' topical/background knowledge and choose familiar themes to alleviate anxiety.

Ghaith (2020) also studied reading anxiety, focusing on strategy use. He surveyed 103 Lebanese EFL undergraduates (using a comprehension test, the Survey of Reading Strategies (SORS), and the FLRAS) to see how anxiety and metacognitive strategies affected reading comprehension. Ghaith (2020) found that students who used global and problem-solving reading strategies scored higher on comprehension. Conversely, higher reading anxiety significantly impaired comprehension and reduced use of supportive strategies. He concluded that FL reading anxiety can be mitigated by teaching effective reading strategies and adopting humanistic, confidence-building instructional approaches.

Dang (2024) similarly explored the link between anxiety and strategy use. In a survey of 324 Vietnamese university students (using the FLRAS and SORS), she reported that about 68.5% had moderate anxiety, while 15.7% fell into low or high categories. Notably, learners with lower anxiety used strategic reading techniques more often. Statistically, she found a negative correlation between FLRA and reading-strategy use: as strategy use increased, anxiety decreased. In practice, the study suggests encouraging strategy training such as problem-solving and global strategies to help students cope with text difficulty and reduce anxiety.

Fitrawati et al. (2023) examined reading anxiety among 30 Indonesian university EFL students. Using the FLRAS and a follow-up questionnaire on anxiety sources, they found that 67% of students reported moderate anxiety and 20% high anxiety. In the findings, two main sources emerged; text features and personal factors. Text features like unfamiliar vocabulary, topics, and culture were most salient, especially encountering unknown words and topics. For example, 46.66% of students agreed that unfamiliar cultural content often left them unable to understand the text. Personal factors which are fear of making errors and worry about comprehension were also noted. Fitrawati et al. (2023) highlight that "unfamiliar vocabulary" was the single most dominant factor, implying that expanding background knowledge through vocabulary and content could ease anxiety. They

recommend that instructors address unfamiliar language and topics in advance, such as pre-teaching key terms or providing cultural context.

Collectively, these studies draw a consistent picture: reading anxiety is common among EFL learners (often at a moderate level) and is linked to both textual and learner factors. Importantly, several researchers explicitly tie anxiety to background knowledge. Dang (2022) and Fitrawati et al. (2023) show that unfamiliar topics, vocabulary, or cultural content which essentially a lack of relevant background knowledge could significantly raise anxiety. Ghaith (2020) and Dang (2024) find that fostering strategic reading, which often draws on schema and knowledge, can reduce anxiety. In short, the literature suggests that strengthening learners' prior knowledge and strategy use can mitigate reading anxiety. These findings inform the present study by highlighting background knowledge as a key affective factor; we expect that readers with richer schema for a text's topic will experience less anxiety than those without such knowledge.

Conceptual Framework of the Study

Reading anxiety is a cycle. For learners, fear of reading may hinder other stages of their learning activities (Rahmat, et.al, 2020). This is especially so for learners in higher institutions. Knowledge is received and transmitted via reading; having reading anxiety affects students' academic performance. According to Milao & Vibulphol (2020) and Zoghi (2012, there are two types of reading anxiety; top-down and bottom-up reading anxiety. Top-down reading anxiety includes lack of background knowledge and also general reading ability. Next, bottom-up reading anxiety includes lack of vocabulary and grammar. Learners' fear of reading may also stem from classroom reading. This study (refer to Figure 1) thus explores if there is a relationship between background knowledge and different types of reading anxiety.

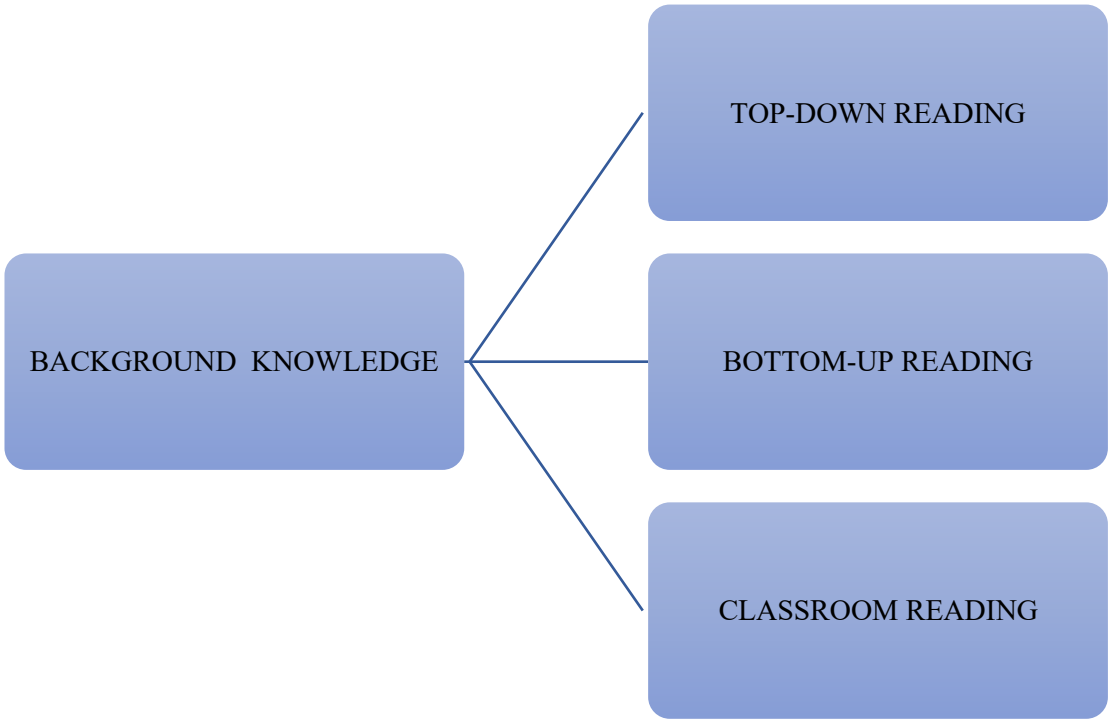

Figure 1- Conceptual Framework of the Study

Background Knowledge on Reading Anxiety

METHODOLOGY

This quantitative study was conducted to explore the influence of background knowledge on reading anxiety. A cross-sectional survey design was deployed, and a convenience sample of 111 participants responded to the instrument. The primary instrument used is a 5-point Likert-scale survey adapted from Milao & Vibulphol (2020) and Zoghi (2012). Table 1 shows the standardized categories used for the Likert scale.

Table 1- Likert Scale Use

Scale	Interpretation
1	Strongly Disagree
2	Disagree
3	Uncertain
4	Agree
5	Strongly Agree

To verify the instrument's performance specifically within the current research context, a local reliability and internal consistency analysis was performed on the data collected from the 111 participants. The overall 27-item instrument achieved an excellent internal consistency reliability coefficient of alpha = .933, which strongly justifies its application in this study based on the reliability parameters established by Ahmad et al. (2024) (see Table 3).

Table 2- Distribution of Items in the Survey

SECTION	TYPE OF ANXIETY	CONSTRUCT	No. of Items
B	TOP-DOWN READING	Background and Cultural Knowledge	3
		General Reading Ability	4
C	BOTTOM-UP READING	Vocabulary	8
		Grammar	6
D	CLASSROOM READING	Teaching Methods	6
	TOTAL		27 (.933)

Table 2 clarifies the distribution of the items across the specific macro-categories and sub-constructs of cognitive and environmental reading anxiety. The instrument is structurally divided into four key sections: Section A (Demographic Profile; 3 items) and Sections B, C, and D (Psychometric scales; 27 items), which combine to form the comprehensive 30-item tool.

Section B focuses on top-down reading anxiety, which occurs when a reader struggles with macro-level text processing and conceptual decoding (7 items total). Section C isolates bottom-up reading anxiety, evaluating the psychological friction that occurs during lower-level, text-driven linguistic decoding (14 items total). Section D addresses classroom reading anxiety, shifting the focus from text features to external instructional elements and teaching methods (6 items total).

Table 3- Reliability Levels, Cronbach's Alpha Ranges, and Their Interpretations

Reliability Level	Cronbach's Alpha range	Interpretation
Excellent	0.9 and above	Indicates very high internal consistency
Good	0.80-0.89	Reflects strong internal consistency
Acceptable	0.70-0.79	Indicates acceptable internal consistency
Questionable	0.60-0.69	Reflects questionable internal consistency
Poor	Below 0.6	Indicates poor internal consistency

Table 3 reveals the breakdown of Cronbach Alpha scores by Ahmad, et.al (2024). The information is used to justify the Cronbach alpha scores for this study. The analysis shows a Cronbach alpha of .933 for all 27 items; thus, revealing a good reliability of the instrument chosen/used. Further analysis using SPSS is done to present findings to answer the research questions for this study.

Data Analysis Methods

To statistically examine the relationships and perceptions surrounding the variables, data were exported into SPSS. The statistical analysis plan was executed as follows:

1. Descriptive Statistics (Percentages, Means, and Standard Deviations) were computed to map the demographic distribution (RQ1, RQ2) and assess learners' explicit perceptions of background knowledge, top-down anxiety, bottom-up anxiety, and classroom teaching dynamics (RQ3, RQ4, RQ5, RQ6).

2. Inferential Statistics were utilized to test the null hypotheses. A One-Way Analysis of Variance (ANOVA) was executed to evaluate variations in background knowledge and reading anxiety across academic disciplines (RQ1). An Independent Samples T-Test was conducted to capture mean variations based on reading medium preferences (RQ2).

3. Exploratory Statistics using Pearson Bivariate Correlation (r) were calculated to determine the strength, direction, and significance of the relationship between background knowledge and the three dimensions of reading anxiety (RQ7).

FINDINGS

Demographic Analysis

According to Zienefuss, et.al (2021), research reports demographic data in percentages to establish sample representatives and allow for generalizability to a larger population. The reporting also provides an overview of participants' characteristics. Percentages offer a clear and understandable picture of the sample makeup.

Table 5- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	32%
		Female	68%
2	Discipline	Science & Technology	41%
		Humanities & Social Sciences	22%
		Business & Management	37%
3	Reading text preference	Digital	62%
		Hardcopy	38%

The demographic profile of the 111 participants, as summarized in Table 5, reveals distinct trends across gender, academic discipline, and reading medium preferences. In terms of gender distribution, the sample is predominantly female, making up 68% of the respondents, while male participants account for the remaining 32%. When looking at their academic backgrounds, the largest segment of participants comes from the Science & Technology discipline at 41%, followed closely by Business & Management at 37%, whereas the Humanities & Social Sciences cohort represents the smallest group at 22%. Finally, regarding their reading text preference, a clear majority of 62% of the participants prefer utilizing digital platforms for reading, contrasted with 38% who still favor traditional hardcopy materials.

Inferential Statistics

According to Shah (2023), there are three main functions of a T-test. Firstly, T-tests are done to compare means. This test is also done to determine if the average scores (mean) or values of two groups, or one group against a known value, are different enough to be considered statistically meaningful and are not just due to random chance. Secondly, a T-test is done to test hypotheses. Researchers use t-tests to test hypotheses about means, such as whether a new treatment significantly impacts a variable or if there's a difference in performance between two distinct groups. Lastly, T-test is used to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a pre-determined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to conclude the populations from which their samples were drawn.

However, a one-way ANOVA (Analysis of Variance) is a statistical method used to compare the means of three or more independent (unrelated) groups to determine if there is a statistically significant difference between them. It is a parametric test that evaluates the effect of a single independent variable (the factor) on a dependent variable.

Across Discipline

This section presents data to answer research question 1: Is there a significant relationship between background knowledge and reading anxiety across disciplines?

H_{01}: There is no significant relationship between (a) background knowledge and (b) reading anxiety across disciplines

Table 6: ANOVA results: background knowledge and reading anxiety across disciplines

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
BACKGROUND	S&T	46	3.3261	.68309	.10072	3.1232	3.5289	1.67	4.33
	H&SS	24	3.4167	.78174	.15957	3.0866	3.7468	1.67	5.00
	BM	41	3.6260	.76447	.11939	3.3847	3.8673	1.67	4.67
	Total	111	3.4565	.74118	.07035	3.3170	3.5959	1.67	5.00
READING_ANXIETY	S&T	46	3.1087	.62679	.09241	2.9226	3.2948	1.67	4.38
	H&SS	24	3.2986	.69120	.14109	3.0067	3.5905	2.50	5.00
	BM	41	3.2673	.61717	.09639	3.0725	3.4621	2.04	4.50
	Total	111	3.2083	.63745	.06050	3.0884	3.3282	1.67	5.00

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
BACKGROUND	Between Groups	1.999	2	.999	1.847	.163
	Within Groups	58.430	108	.541		
	Total	60.428	110			
READING_ANXIETY	Between Groups	.795	2	.397	.977	.380
	Within Groups	43.903	108	.407		
	Total	44.698	110			

An ANOVA test was performed to see if there are significant relationships between (a) background knowledge and (b) reading anxiety across disciplines. There were no significant differences for (a) background knowledge (p=0.163) and (b) reading anxiety (p=0.380) across disciplines. Null hypothesis is accepted

Across reading text preference

This section presents data to answer research question 2: Is there a significant relationship between background knowledge and reading anxiety across reading text preference?

$H_{01}2$ There is no significant relationship between (a) background knowledge and (b) reading anxiety reading text preference?

Table 7: T-Test results: background knowledge and reading anxiety across reading text preference

Group Statistics

	Q3READ	N	Mean	Std. Deviation	Std. Error Mean
BACKGROUND	DIGITAL	69	3.4203	.72683	.08750
	HARDCOPY	42	3.5159	.76934	.11871
READING_ANXIETY	DIGITAL	69	3.1196	.65904	.07934
	HARDCOPY	42	3.3542	.57861	.08928

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means							
						Significance		Mean	Std. Error	95% Confidence Interval of the Difference	
		F	Sig.	t	df	One-Sided p	Two-Sided p	Difference	Difference	Lower	Upper
BACKGROUND	Equal variances assumed	.024	.877	-.657	109	.256	.512	-.09558	.14543	-.38383	.19266
	Equal variances not assumed			-.648	82.898	.259	.519	-.09558	.14747	-.38891	.19774
READING_ANXIETY	Equal variances assumed	1.704	.194	-1.903	109	.030	.060	-.23460	.12330	-.47897	.00977
	Equal variances not assumed			-1.964	95.437	.026	.052	-.23460	.11944	-.47171	.00250

A two-sample t-test was performed to test the relationship between background knowledge and reading anxiety across reading text preference. There was a significant difference in background knowledge (p=0877). and reading anxiety across (p=0.194), reading text preference.

Descriptive Statistics

Why is there a need to report the mean and standard deviation? According to Vetter (2017), Mean (M) represents the average, or centre of a data set. Standard deviation (SD) indicates the typical distance of individual observations from the mean which shows the data's variability or spread. A low SD means the data points are clustered close to the mean whole a high. SD indicates they are more spread out. It is good to have a high SD.

Findings for Background knowledge

This section presents data to answer research question 3: How do learners perceive background knowledge in reading?

Table 8- Mean and Standard Deviation for Background and Cultural Knowledge (BCK)

ITEM	Mean	SD
BCKQ1 I do not feel at ease when the title of the text is unfamiliar to me.	3.14	1.01
BCKQ2 It is worrying to me when the ideas expressed in the text are culturally unclear	3.58	0.85
BCKQ3 I get upset when I lack the previous knowledge about the ideas expressed in the text.	3.65	1.04

Table 8 presents the mean and standard deviation background and cultural knowledge. From the table, Item 3 is reported to have the highest mean with 3.65 and 1.04 SD, followed by Item 2 (M=3.58; SD=0.85) and lastly Item 1 with only 3.14 for mean and 1.01 SD.

Findings for Top-down reading anxiety

This section presents data to answer research question 4: How do learners perceive top-down reading?

Table 9- Mean and Standard Deviation for General Reading Ability (GRA)

ITEM	Mean	SD
GRAQ1 I worry when I cannot get the gist of the text although no new vocabulary items or grammatical	3.43	0.94

points exist in the text.		
GRAQ2 When I cannot recognize minor ideas (details) of the text, it is worrying to me.	3.40	0.96
GRAQ3 I am nervous when I cannot spot the main idea of a paragraph.	3.59	0.99
GRAQ4 It bothers me when I cannot express my opinions or feelings about the text.	3.39	0.97

Table 9 presents the mean and standard deviation for general reading ability. The data shows that Item 3 has the highest mean at 3.59, with a standard deviation of 0.99. This is followed by Item 1, which has a mean of 3.43 and a standard deviation of 0.94. There are only slight differences in the means and standard deviations between Item 2 (M=3.40; SD=0.96) and Item 5 (M=3.39; SD=0.97).

Findings for Bottom-up reading anxiety

This section presents data to answer research question 5: How do learners perceive bottom-up reading? In the context of this study, this is measured by (i) Vocabulary and (ii) Grammar

Table 10- Mean and Standard Deviation for Vocabulary(V)

ITEM	Mean	SD
VQ1I feel uneasy when I cannot figure out the meanings of unknown words.	3.49	0.97
VQ2 It bothers me when I encounter a lot of words whose meanings are unclear	3.67	0.92
VQ3I get upset when I cannot figure out the meaning of a word that I feel I have seen before	3.73	0.99
VQ4 It bothers me when I feel unable to look up a word in the dictionary.	3.32	0.93
VQ5 I get confused when the word that I know has a different meaning in the sentence.	3.55	0.98
VQ6 I get upset when I come across idioms that are unfamiliar to me.	3.07	1.11
VQ7 It makes me feel uneasy when an unfamiliar word is made up of several parts or syllables.	3.34	0.95
VQ8 I feel worried when the unknown word is difficult to pronounce.	3.18	1.09

Table 10 presents how vocabulary impacts bottom-up reading anxiety. The data reveals that learners experience the highest levels of anxiety when they cannot figure out the meaning of a word they feel they have seen before (M = 3.73, SD = 0.99), closely followed by the bother of encountering many unclear words (M = 3.67, SD = 0.92). Learners also reported considerable confusion when a word they know takes on a different meaning in a new sentence (M = 3.55, SD = 0.98) and general unease when they simply cannot figure out unknown words (M = 3.49, SD = 0.97). Conversely, the factors that caused the least amount of upset were encountering unfamiliar idioms (M = 3.07, SD = 1.11) and feeling worried about difficult-to-pronounce unknown words (M = 3.18, SD = 1.09)

Table 11- Mean and Standard Deviation for Grammar(G)

ITEM	Mean	SD
GQ1 I am nervous when a certain sentence is long and has a complex structure	3.23	1.05
GQ2 When a certain sentence is grammatically unfamiliar is worrying to me.	3.35	1.02
GQ3 It bothers me when a passive voice is used in a sentence.	2.86	0.94
GQ4 I feel upset when the tense of a certain sentence is unclear to me.	3.10	0.94
GQ5 I worry when I am unable to recognize different parts of speech such as adjectives, adverbs, or connective words.	3.31	0.97
GQ6 I get confused when what I know about a grammatical point does not make any sense.	3.48	0.85

Table 11 shows the grammar component of bottom-up reading anxiety. According to the findings, the most significant source of grammar-related anxiety is when learners get confused because a grammatical point they already know does not seem to make sense in context (M = 3.48, SD = 0.85). Grammatically unfamiliar sentences also provoked high worry (M = 3.35, SD = 1.02), as did the inability to recognize different parts of speech like

adjectives or connective words (M = 3.31, SD = 0.97). Interestingly, the lowest reported anxiety in this category was triggered by the use of passive voice in a sentence (M = 2.86, SD = 0.94), while unclear sentence tenses (M = 3.10, SD = 0.94) and long, complex structures (M = 3.23, SD = 1.05) caused moderate levels of nervousness.

Findings for Classroom teaching

This section presents data to answer the research question 6: How do learners perceive classroom teaching?

Table 12- Mean and Standard Deviation for Teaching Methods (TM)

ITEM	Mean	SD
TMQ1 It bothers me when the instructor calls on me to read out.	2.89	1.32
TMQ2 It worries me when the instructor calls on me to translate a piece of an English text into our first language.	3.16	1.13
TMQ3 When the instructor asks me reading comprehension questions, it is worrying to me.	2.97	1.16
TMQ4 It upsets me when the instructor chooses uninteresting texts to read in class.	2.59	1.16
TMQ5 It makes me feel uneasy when the instructor corrects my pronunciation or translation mistakes.	2.50	1.12
TMQ6 I am nervous when the instructor uses English as a medium of instruction and hardly ever makes use of our first language.	2.58	1.07

The descriptive statistics for Classroom Reading Anxiety related to Teaching Methods (TM), presented in Table 12, indicate moderate overall anxiety levels among the 111 participants, with specific instructional practices generating higher distress than others. The highest source of anxiety is triggered by TMQ2, where participants express the most worry when asked by the instructor to translate English text into their first language (M = 3.16, SD = 1.13), followed closely by TMQ3 regarding anxiety when answering direct reading comprehension questions (M = 2.97, SD = 1.16). Being called on to read aloud in class (TMQ1) also yields a notable level of apprehension (M = 2.89, SD = 1.32), which notably shows the highest variation in participant responses. Conversely, items regarding the choice of uninteresting reading materials (TMQ4; M = 2.59, SD = 1.16), the exclusive use of English as a medium of instruction (TMQ6; M = 2.58, SD = 1.07), and receiving immediate teacher corrections on pronunciation or translation mistakes (TMQ5; M = 2.50, SD = 1.12) register the lowest anxiety means on the scale. These findings suggest that interactive, high-stakes public performance tasks in the classroom elicit stronger reading anxiety among learners than the instructor's language choices, feedback mechanisms, or material selection.

Exploratory Statistics

According to He (2024), correlation is a statistical technique that shows how strongly two variables are related to each other or the degree of association between the two. It's a common tool for describing simple relationships without making a statement about cause and effect. This section presents data to answer the research question on correlation.

Findings for Relationship between background knowledge and different types of reading anxiety

This section presents data to answer research question 7: Is there a relationship between background knowledge and different types of reading anxiety?

To determine if there is a significant association in the mean scores between background knowledge and different types of reading anxiety (top-down, bottom-up and classroom reading), data is analysed using SPSS for correlations. Results are presented separately in table 13 below.

Table 13- Correlation between background knowledge and different types of reading anxiety (top-down, bottom-up, and classroom reading)

		Top-down	Bottom-Up	Classroom Reading
Background	Pearson (Correlation	.521**	.581**	.348**
	Sig (2-tailed)	<.001	<.001	<.001
	N	111	111	111

**Correlation is significant at the 0.01 level (2-tailed)

Table 13 shows there is an association between background knowledge and different types of reading anxiety (top-down, bottom-up, and classroom reading). According to He (2024), the coefficient is significant at the .05 level, and positive correlation is measured on a 0.1 to 1.0 scale. Weak positive correlation would be in the range of 0.1 to 0.3, moderate positive correlation from 0.3 to 0.5, and strong positive correlation from 0.5 to 1.0.

Background & Top-down Reading Anxiety

Correlation analysis shows that there is a high significant association between background & top-down reading anxiety (r=.521**) and (p=.<.001). This means that there is also a strong positive relationship between background & top-down reading anxiety.

Background & Bottom-Up Reading Anxiety

Correlation analysis shows that there is a high significant association between background & bottom-up reading anxiety (r=.581**) and (p=.<.001). This means that there is also a strong positive relationship between background & bottom-up reading anxiety.

Background & Classroom Reading Anxiety

Correlation analysis shows that there is a moderate significant association between background & classroom reading anxiety (r=.348**) and (p=.<.001). This means that there is also a moderate positive relationship between background & classroom reading anxiety.

CONCLUSION

Summary of Findings and Discussions

The findings for each research question are summarised below, followed by how the results relate to past studies discussed in the literature review. The study found no significant relationship between background knowledge and reading anxiety across different academic disciplines (RQ1). However, it reported a significant difference in background knowledge and reading anxiety when comparing learners' preferences for digital versus hardcopy texts (RQ2 – reading text preference). When looking at learners' perceptions, distress was highest when they lacked previous knowledge about the ideas expressed in a text (RQ3 – background knowledge). Conversely, learners felt the lowest level of unease when simply facing an unfamiliar text title. The study also found that anxiety related to general reading ability (RQ4 – top-down reading anxiety) was highest when learners were unable to spot the main idea of a paragraph. The lowest source of worry in this category was the inability to express opinions or feelings about the text.

Findings for RQ5 (bottom-up reading anxiety related to vocabulary and grammar) revealed that learners experienced the highest anxiety when they could not figure out the meaning of a word they felt they had seen before. The lowest amount of upset was caused by encountering unfamiliar idioms. While the highest source of grammar-related anxiety occurred when a grammatical point the learner already knew did not make sense in context. Interestingly, the lowest reported anxiety was triggered by the use of passive voice. RQ6 explored the classroom reading anxiety related to teaching methods. It was found that interactive public performance tasks generated the most anxiety, with the highest worry occurring when instructors asked learners to translate an English text into their first language. The lowest anxiety was registered when instructors corrected pronunciation or translation mistakes. While the last research question, RQ7 revealed a strong positive relationship between background knowledge and both top-down and bottom-up reading anxiety. There was also a moderate positive relationship between background knowledge and classroom reading anxiety.

The findings of this current study align well with several established theories and past empirical studies regarding reading anxiety, schema theory, and vocabulary barriers. The finding that a lack of conceptual background knowledge serves as the highest source of reading distress (RQ3) corroborates the work of Dang (2022), who demonstrated that unfamiliar topics significantly impair reading anxiety among university students, while topic familiarity bolsters reader confidence. This is further supported by Fitrawati et al. (2023), who identified unfamiliar cultural and topical features as main textual barriers that paralyze comprehension and induce reader anxiety.

Regarding bottom-up anxiety (RQ5), the finding that vague vocabulary, particularly words that feel familiar but remain unrecallable triggers intense anxiety, matches the conclusions of Fitrawati et al. (2023). Their research identified unfamiliar vocabulary as the single most dominant personal and textual anxiety factor among EFL learners, validating the notion that lexical gaps disrupt bottom-up decoding and increase affective filters. The finding that learners experience high top-down anxiety when they cannot spot the main idea of a paragraph (RQ4) relates heavily to the use of reading strategies. This study is in accordance with the studies by Ghaith (2020) and Dang (2024). Ghaith observed that reading anxiety directly impairs global comprehension, while Dang noted a negative correlation between anxiety and strategy use. Both researchers argue that training students in global reading strategies such as skimming for the main idea helps learners cope with text difficulty and directly mitigates top-down reading anxiety.

Finally, the strong correlations identified between background knowledge and various dimensions of reading anxiety (RQ7) echo the broader academic consensus. The collective insights of Dang (2022, 2024), Ghaith (2020), and Fitrawati et al. (2023) reinforce the primary conclusion of this study: expanding a learner's prior schema and equipping them with targeted reading strategies are critical interventions required to reduce cognitive overload and alleviate foreign language reading anxiety.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

The study's findings provide strong support for Schema Theory, which posits that reading is a transactional process requiring readers to draw upon their pre-existing background knowledge (schemata) to construct meaning. The data demonstrate a strong positive correlation between background knowledge and both top-down and bottom-up reading anxiety. This suggests that when learners lack sufficient schemata and encounter unfamiliar texts, the resulting "cognitive friction" directly triggers reading anxiety. Empirically, the study shows that learners experience the greatest distress specifically when they lack prior knowledge of the concepts presented in a text.

These results are consistent with Attentional Control Theory, which argues that anxiety overwhelms a learner's working memory with intrusive thoughts, thereby reducing their cognitive capacity to process texts effectively. For instance, the high anxiety reported by learners when they struggle to recall the meaning of a familiar word or when a known grammatical structure seems unclear in context exemplifies this kind of cognitive overload.

Ultimately, the study validates its conceptual framework by demonstrating that background knowledge is significantly linked to a cycle of reading anxiety across three distinct dimensions: top-down (general reading ability), bottom-up (vocabulary and grammar), and classroom reading anxiety.

Pedagogical Implications

The findings of this study highlight several pedagogical considerations:

a) Prioritize Schema-Building (Pre-Reading Activities): Since a lack of background knowledge about a text's ideas causes the most significant distress for readers, instructors should prioritize pre-reading activities. Building students' familiarity with the topic and its cultural context before reading is essential to prevent cognitive friction and reduce anxiety.
b) Targeted Reading Strategy Training: Proficient readers employ global, problem-solving, and support strategies to manage comprehension barriers and regulate emotional distress. Given that difficulty

identifying a paragraph's main idea leads to the highest top-down anxiety, teachers should explicitly train students in global strategies such as skimming for the gist to help them independently manage challenging texts.

c) Re-evaluating Classroom Performance Tasks: The findings indicate that interactive, high-stakes public performance tasks (e.g., calling on students to translate texts or answer comprehension questions aloud) elicit the highest classroom reading anxiety. In contrast, direct teacher corrections and using English as the primary medium of instruction cause the lowest anxiety. To lower the affective filter, instructors should consider reducing impromptu public translation tasks and adopting lower-stakes methods for assessing comprehension.

d) Uniform Interventions Across Disciplines: As the study found no significant link between background knowledge and reading anxiety across academic fields (Science & Technology, Humanities & Social Sciences, Business & Management), educational institutions can implement standardized reading anxiety interventions without extensive tailoring for specific disciplines.

e) Leveraging Digital Formats: With 62% of participants preferring digital reading platforms over traditional hardcopies, educators may enhance student engagement and comfort by providing more materials in digital formats.

Suggestions for Future Research

The study found a notable difference in background knowledge and reading anxiety based on students' reading preferences (digital vs. hardcopy). Future research should examine why digital reading influences anxiety differently and whether interactive digital tools such as pop-up dictionaries can help alleviate bottom-up anxiety. Further studies should delve into the precise cognitive disconnects that heighten bottom-up anxiety. For example, researchers could explore why learners become particularly distressed when a familiar word takes on a new meaning in context, or when a known grammatical rule appears illogical in a given sentence.

Additional research should evaluate the direct impact of teaching specific metacognitive reading strategies (as outlined by Weinstein & Mayer) on reducing the link between low background knowledge and high reading anxiety. Since translating texts into students' first language generated the highest classroom anxiety, future studies should investigate the psychological pressures of translation tasks versus monolingual L2 comprehension tasks. Insights from this research could inform best practices for classroom instruction.

While this study provides meaningful baseline insights into the intersection of schema and affective barriers, certain methodological constraints should be addressed in subsequent research. First, the use of a convenience sampling technique with a small cohort of 111 participants restricts the generalizability of the findings and introduces potential sampling bias. Future studies should consider utilizing a significantly larger and more representative sample through probability sampling techniques to validate these relationships across broader university populations.

Second, while the current study successfully mapped direct relationships via descriptive and bivariate inferential methods, incorporating advanced multivariate statistical methods would strengthen the depth of analysis. Future research should implement multiple linear regression analysis or Structural Equation Modelling (SEM) to comprehensively map out the pathways, mediating factors, and predictive weightings of background knowledge on the multi-dimensional constructs of top-down, bottom-up, and classroom reading anxieties.

Third, although the questionnaire adapted from Milao and Vibulphol (2020) and Zoghi (2012) demonstrated excellent psychometric internal reliability in this current context, future investigations should conduct comprehensive exploratory and confirmatory factor analyses (EFA/CFA) to establish strong construct validity when altering language learning tools across unique geographic or cultural cohorts.

Finally, to expand beyond the constraints of purely quantitative survey indicators, future studies should employ a mixed-methods research design. Integrating qualitative instruments, such as semi-structured interviews, diaries, or focus group discussions, would provide richer, deeply nuanced insights into students lived experiences of reading anxiety, detailing the psychological mechanisms that take place when local cognitive schema fails during text processing.

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Appendix

Reading Anxiety

(Instrument adapted from Milao & Vibulphol,2020) and Zoghi, 2012)

SECT	TYPE OF ANXIETY	CONSTRUCT	No Of Items
B	TOP-DOWN READING	Background and Cultural Knowledge	3
		General Reading Ability	4
C	BOTTOM-UP READING	Vocabulary	8
		Grammar	6
D	CLASSROOM READING	Teaching Methods	6
		TOTAL	27

1	Strongly Disagree
2	Disagree
3	Uncertain
4	Agree
5	Strongly Agree

Section B- Top-Down Reading Anxiety

Background and Cultural Knowledge (BCK)

NO	ITEM
1	BCKQ1 I do not feel at ease when the title of the text is unfamiliar to me.
2	BCKQ2 It is worrying to me when the ideas expressed in the text are culturally unclear
3	BCKQ3 I get upset when I lack the previous knowledge about the ideas expressed in the text.

General Reading Ability (GRA)

NO	ITEM
1	GRAQ1 I worry when I cannot get the gist of the text although no new vocabulary items or grammatical points exist in the text.
2	GRAQ2 When I cannot recognize minor ideas (details) of the text, it is worrying to me.
3	GRAQ3 I am nervous when I cannot spot the main idea of a paragraph.
4	GRAQ4 It bothers me when I cannot express my opinions or feelings about the text.

Section C- Bottom-Up Reading Anxiety

Vocabulary(V)

NO	ITEM
1	VQ1I feel uneasy when I cannot figure out the meanings of unknown words.
2	VQ2 It bothers me when I encounter a lot of words whose meanings are unclear
3	VQ3I get upset when I cannot figure out the meaning of a word that I feel I have seen before
4	VQ4 It bothers me when I feel unable to look up a word in the dictionary.

5	VQ5 I get confused when the word that I know has a different meaning in the sentence.
6	VQ6 I get upset when I come across idioms that are unfamiliar to me.
7	VQ7 It makes me feel uneasy when an unfamiliar word is made up of several parts or syllables.
8	VQ8 I feel worried when the unknown word is difficult to pronounce.

Grammar(G)

NO	ITEM
1	GQ1 I am nervous when a certain sentence is long and has a complex structure
2	GQ2 When a certain sentence is grammatically unfamiliar is worrying to me.
3	GQ3 It bothers me when a passive voice is used in a sentence.
4	GQ4 I feel upset when the tense of a certain sentence is unclear to me.
5	GQ5 I worry when I am unable to recognize different parts of speech such as adjectives, adverbs, or connective words.
6	GQ6 I get confused when what I know about a grammatical point does not make any sense.

Section D- Classroom Reading Anxiety

Teaching Methods (TM)

NO	ITEM
1	TMQ1 It bothers me when the instructor calls on me to read out.
2	TMQ2 It worries me when the instructor calls on me to translate a piece of an English text into our first language.
3	TMQ3 When the instructor asks me reading comprehension questions, it is worrying to me.
4	TMQ4 It upsets me when the instructor chooses uninteresting texts to read in class.
5	TMQ5 It makes me feel uneasy when the instructor corrects my pronunciation or translation mistakes.
6	TMQ6 I am nervous when the instructor uses English as a medium of instruction and hardly ever makes use of our first language.