

A Study of the Influence of Top-Down Reading on Reading Anxiety

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ABSTRACT

This study investigates the influence of top-down reading processes on foreign language reading anxiety among Malaysian undergraduate students learning French as a second language. This research evaluates a multidimensional construct encompassing top-down, bottom-up, and classroom-related reading anxiety. Opting for a quantitative survey approach, data were collected from 145 university students using an adapted 27-item Likert-scale questionnaire. The findings underline the primary sources of learner anxiety across all three measured dimensions. In the Top-Down Reading Anxiety dimension, students experienced high distress when they lacked prior background knowledge about the text content ($M = 3.59$, $SD = 0.93$) and when they struggled to identify the main idea of a paragraph ($M = 3.77$, $SD = 0.89$). In the Bottom-Up Reading Anxiety dimension, linguistic barriers were prominent; students felt most anxious when facing numerous words with unclear meanings ($M = 3.72$, $SD = 0.97$) and when dealing with long, complex sentence structures ($M = 3.70$, $SD = 0.97$). Conversely, Classroom Reading Anxiety recorded lower, more uncertain scores, peaking slightly when students were asked direct reading comprehension questions by the instructor ($M = 3.07$, $SD = 1.20$) and portraying its lowest for pronunciation corrections ($M = 2.40$, $SD = 1.18$). Finally, comparative analysis showed that reading anxiety remains a uniform baseline challenge across academic streams, revealing no prominent differences between students majoring in Science & Technology (53% of the sample) and those in Social Sciences & Humanities (45% of the sample). Overall, the results highlight the need for pedagogical strategies that attain a balance between cognitive demands and affective support in foreign language reading contexts by pointing to the combined impact of limited background knowledge, global comprehension demands, and linguistic processing challenges on learners' reading anxiety.

Keywords: Reading Anxiety, Top-Down Reading, Bottom-Up Reading, Cognitive Theory, Foreign Language Reading.

INTRODUCTION

Background of Study

Malaysia has promoted foreign language learning through national education policies and reforms, extending multilingual education into higher education. Universities offer foreign language courses, such as French, as compulsory or elective subjects to students from diverse academic disciplines, many of whom have limited prior exposure to the target language. This diversity can make reading particularly challenging and anxiety-inducing, especially when learners encounter unfamiliar vocabulary, grammatical structures, or cultural references. Although reading strategies have been widely studied, their emotional impact, particularly reading anxiety associated with instructional approaches, remains underexplored in non-Western university contexts.

Reading anxiety refers to feelings of tension, worry, or apprehension experienced during reading tasks in a foreign language and is commonly linked to limited vocabulary knowledge, fear of misunderstanding texts, and concern about classroom evaluation (Saito et al., 1999). In foreign language learning, top-down reading approaches require learners to draw on prior linguistic and cultural schemata to construct meaning from texts. However, learners with limited exposure to the target language and its cultural contexts may experience difficulties in activating relevant schemata, resulting in increased cognitive strain and heightened reading anxiety. Such affective barriers may negatively affect reading comprehension and performance (Carrell & Eisterhold, 1983; Horwitz, 2001). Studies in the Malaysian higher education context similarly report that insufficient linguistic and cultural familiarity can exacerbate reading anxiety among foreign language learners (Embi & Ismail, 2010).

Despite growing interest in reading strategies and language anxiety, the relationship between specific reading approaches and anxiety remains underexamined, as many studies prioritize comprehension outcomes and strategy effectiveness. Moreover, much of the existing research has focused on English in ESL contexts. In contrast, French language learning presents distinct orthographic, grammatical, and cultural demands that may elicit different anxiety responses. Therefore, this study investigates the influence of top-down reading on reading anxiety among Malaysian university students learning French, contributing to a more nuanced understanding of learner experience in foreign language reading.

Statement of Problem

Foreign language reading at the tertiary level involves complex cognitive and affective processes, particularly for learners who have limited prior exposure to the target language. In some Malaysian public universities, French is commonly offered as a compulsory or elective subject to students from diverse academic disciplines, creating heterogeneous classrooms where learners differ in linguistic background, disciplinary training, and familiarity with foreign language learning. These conditions may intensify reading-related anxiety, especially when instructional practices require learners to construct meaning beyond surface-level decoding.

Recent research on foreign language anxiety has reaffirmed that anxiety can interfere with cognitive processing and negatively influence reading engagement and performance (MacIntyre & Gardner, 1994; Teimouri et al., 2019). A growing body of literature has conceptualized reading anxiety as a multidimensional construct, encompassing top-down, bottom-up, and classroom-related sources. However, a recent systematic review of foreign language anxiety research (2004–2023) highlighted that many studies continue to focus on English as a foreign language and treat anxiety as a broad construct, calling for future research to (a) examine specific anxiety dimensions, (b) extend investigations to other foreign languages, and (c) explore anxiety across diverse learner populations and instructional contexts (Teimouri et al., 2024).

In particular, top-down reading approaches, which rely on learners' ability to activate prior knowledge, infer meaning, and engage with global text interpretation, may pose unique challenges for learners with limited linguistic or cultural schemata. While previous studies acknowledge that instructional demands can contribute to anxiety, they offer limited insight into how learners perceive anxiety associated with specific reading processes or how different forms of reading anxiety are interrelated. Moreover, recent studies have suggested the need for further empirical work examining the interaction between reading strategies and affective responses, as well as potential differences across academic disciplines, to better inform pedagogical practices in higher education (Grabe, 2009; Bernhardt, 2011).

In response to these unresolved issues, the present study investigates the influence of top-down reading on reading anxiety among Malaysian university students learning French, examining learners' perceptions of top-down, bottom-up, and classroom reading anxiety, their interrelationships, and potential differences across academic disciplines.

Objective of the Study and Research Questions

This study is done to explore the influence of top-down reading on reading anxiety. Specifically, this study is

done to answer the following questions;

- How do learners perceive top-down reading anxiety?
- How do learners perceive bottom-up reading anxiety?
- How do learners perceive classroom reading anxiety?
- Is there a relationship between top-down reading anxiety and bottom-up reading anxiety?

(H1-There is no relationship between top-down reading anxiety and bottom-up reading anxiety)

- Is there a relationship between top-down reading anxiety and classroom reading anxiety?

(H2-There is no relationship between top-down reading anxiety and classroom reading anxiety)

- Is there a significant difference for all types of reading across disciplines?

(H3-There is no significant difference for all types of reading across disciplines)

LITERATURE REVIEW

Theoretical Framework of the Study Cognitive Load Theory (Sweller, 1988)

Cognitive Load Theory (CLT; Sweller 1988) explains how our working memory processes information. Sweller listed three main types of cognitive load: intrinsic, extraneous, and germane. CLT posits that working memory has a limited capacity, which can be overwhelmed if instructional materials are not designed effectively. This is particularly relevant to reading comprehension, as it can lead to reading anxiety in learners due to their reading difficulties (Rahmat,et.al.,2020). According to (Rahmat,et.al.,2020). Reading anxiety among learners is either top-down or bottom-up anxiety. This is also agreed by (Somro,et.al.,2019) who found that bottom-up reading anxiety and the classroom reading anxiety have a significant negative impact on academic reading. Top-down anxiety refers to learners' fear of reading because they have no prior knowledge of the content of the text. Another type of anxiety is bottom-up anxiety caused by the learners' lack of vocabulary and grammar knowledge in the target language, Zoghi (2012).

Types of Cognitive Load

Intrinsic Cognitive Load:

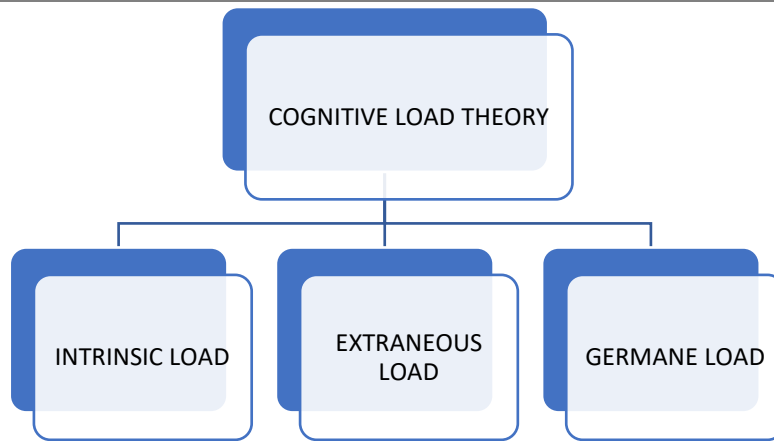
Intrinsic cognitive load refers to the inherent difficulty of a learning task. All concepts are not equal, and more complex tasks, such as those higher on Bloom's Taxonomy, require greater intrinsic cognitive load allocation. Likewise, some concepts themselves are much more intrinsically complex and reciprocally require more cognitive load to reach understanding.

Extraneous Cognitive Load:

Involves irrelevant information or poorly organized instruction that might hinder learning objectives. It detracts from the cognitive capacity needed for intrinsic load.

Germane Cognitive Load:

Represents the effort to transfer information to long-term memory through schema development. It involves activities that connect new information to existing knowledge.



Reading Anxiety (relate to the types in the instrument)

By highlighting the limited capacity of learners' working memory, Cognitive Load Theory (Sweller, 1988) explains reading anxiety in foreign language learning. According to this study, bottom-up reading anxiety reflects intrinsic cognitive load, as reading tasks become more complex due issues with vocabulary and grammar. Extraneous cognitive load is linked to reading anxiety in the classroom, where students' anxiety is increased by additional cognitive demands imposed by teaching strategies and classroom procedures. Top-down reading anxiety and germane cognitive load are strongly linked because learners must activate prior information and create meaning globally. The cognitive effort needed for schema formation may be greater for students who struggle with understanding in general or lack pertinent schemata, which can lead to higher reading anxiety. Together, these three loads enlighten the main purpose of this study: reading anxiety.

Past Studies

Past Studies on Reading Anxiety

Many studies have been done to investigate foreign language reading anxiety, focusing on the sources of anxiety and the effects of reading anxiety and reading comprehension.

The study by Saito, Horwitz, and Garza (1999) was conducted to investigate (a) the possibility of anxiety related to foreign or second language reading as well as (b) to identify its main factors. The respondents for this study were 383 university learners of French, Japanese, and Russian as foreign languages. Data were collected using the Foreign Language Reading Anxiety Scale (FLRAS), which included 20 of 33 items that focused on oral aspects of language use: listening and speaking. The findings revealed that reading anxiety is skill-specific and different from general language anxiety. Reading anxiety increases due to complex grammar, difficult vocabulary, and unfamiliar writing systems, which are strongly related to bottom-up reading anxiety. The study highlights the need for educators to provide vocabulary and grammar support. Moreover, pre-reading activities could also help to reduce anxiety.

Next, the study by Sellers (2000) also aims to identify the relationship between language anxiety and reading in Spanish (as a foreign language), specifically on (a) the effects of language anxiety on reading comprehension and (b) the effects of language anxiety on the reading process itself. The study involved 89 university learners of Spanish in two different levels. The instrument used in this study was the Cognitive Interference Questionnaire. Findings suggest that more highly anxious students hardly recall the information in the reading material. The results support the idea that reading anxiety is skill-specific.

The study by Zhao, Guo, and Dynia (2013) was conducted to investigate the relationship between reading anxiety and reading comprehension. A total of 114 respondents participated in the study. The respondents included are English-speaking university students learning Chinese as a foreign language. The researchers employed several instruments for this study: the Foreign Language Classroom Anxiety Scale (FLCAS), the Foreign Language Reading Anxiety Scale (FLRAS), a background information questionnaire, a reading performance measure, and email interviews. The study reported that factors such as course level and experience with the language's culture

significantly influenced FL reading anxiety. Other than that, unfamiliar scripts and topics, as well as worries about comprehension, are also considered the major sources of reading anxiety. The findings also suggest the importance of raising awareness of students' anxiety and providing relevant support to help them to manage this feeling.

In addition, the study by Matsuda & Gobel (2004) explored the possible links between general foreign language classroom anxiety (FLCA), foreign language reading anxiety (FLRA), gender, extended overseas experience, and classroom performance. The respondents are Japanese university students majoring in English, with a total of 252 participants. Data were collected using FLCAS (Horwitz et al., 1986) and FLRAS (Saito et al., 1999). The findings revealed that foreign language reading anxiety is multi-dimensional, reflecting not only linguistic knowledge but also learners' confidence and their perception of cultural and linguistic distance. The findings suggest important implications for having the opportunity to experience the culture of the target language and communicate with the native speakers.

Collectively, the past research agrees that reading anxiety is skill-specific and is influenced by several factors, for example, complex grammar, difficult vocabulary, and unfamiliar writing systems. The reviewed studies also highlight the importance of both linguistic and affective factors, including confidence and cultural familiarity with the target language. This implies that different types of reading and teaching approaches do play an important role in reducing reading anxiety. Therefore, this present study particularly explores learners' perceptions of each type of reading anxiety, whether it is top-down, bottom-up, or classroom reading-related anxiety. Relationships between these anxieties are also examined.

Conceptual Framework of the Study

Figure 1 reveals the conceptual framework of the study. Reading anxiety stems from reading difficulties that learners face (Rahmat,et.al., 2020). For many readers, they overcome the difficulties by using reading strategies. This study is rooted in the theory of cognitive load by Sweller (1988). He listed three main types of cognitive load: intrinsic cognitive load, extraneous cognitive load, and germane cognitive load. In reading, germane cognitive load refers to the effort that the readers depend on by using schema construction. This is done using the tow-down approach, where readers depend on their background knowledge or schemata to make sense of their reading. In the context of this study, the failure to depend on their schemata can give readers reading anxiety. According to Milao & Vibulphol (2020), top-down reading anxiety is supported by the construct (i) background and cultural knowledge and (ii) general reading ability. Next, Bottom-up reading anxiety is supported by constructs such as (i) vocabulary and (ii) grammar. Lastly, classroom reading anxiety is supported by the construct of teaching method by Zoghi (2012). This study also explores whether there is a relationship between top-down reading anxiety and bottom-up reading anxiety. This study also investigates if there is a relationship between top-down reading anxiety and classroom reading anxiety.

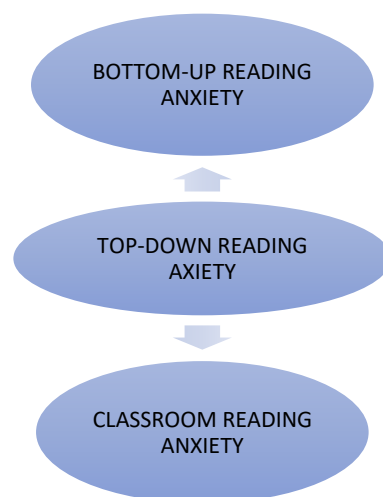


Figure 1- Conceptual Framework of the Study

The Influence of top-down reading on reading anxiety

METHODOLOGY

Research Design and Sampling

This quantitative study was conducted to explore the influence of top-down reading on reading anxiety. A convenience sample of 145 undergraduate participants responded to the survey. Data were collected using a structured 27-item survey utilizing a 5-point Likert scale.

Questionnaire Development

The items for this instrument were compiled and adapted from the validated inventories of Zoghi (2012) and Miao and Vibulphol (2020) to ensure a valid theoretical foundation in foreign language reading anxiety metrics. The questionnaire was specifically developed to isolate distinct cognitive challenges encountered by tertiary-level students when reading a foreign language. To concretize the intensity of students' affective responses accurately, responses were scored using a 5-point Likert scale ranging from a definitive negative anchor to a definitive positive anchor. Table 1 outlines the specific numerical values and their corresponding interpretations used to evaluate the questionnaire items.

Table 1- Likert Scale Use

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

Validity and Reliability Measures

Content and construct validity were established by mapping the 27 survey items directly onto three primary dimensions derived from Cognitive Load Theory: Top-Down Reading Anxiety, Bottom-Up Reading Anxiety, and Classroom Reading Anxiety. Table 2 portrays the structural distribution of the survey items across the various reading anxiety constructs, alongside their respective internal consistency scores.

The instrument contains a total of 27 questions. In particular, the Top-Down Reading construct comprises seven items that cover general reading ability (four items) and background and cultural knowledge (three items). There are fourteen items in the Bottom-Up Reading construct, eight of which evaluate vocabulary and six of which focus on grammar. Lastly, six items are dedicated to measuring classroom reading anxiety under teaching methods.

Table 2- Distribution of Items in the Survey

SECT	TYPE OF ANXIETY	CONSTRUCT	No Of Items	Toot item	Cronbach Alpha
B	TOP-DOWN READING	Background and Cultural Knowledge	3	7	.868
		General Reading Ability	4		
C	BOTTOM-UP READING	Vocabulary	8	14	.942
		Grammar	6		

D	CLASSROOM READING	Teaching Methods	6	6	.915
		TOTAL		27	.951

To interpret the internal consistency of the metrics used, a reliability analysis was conducted via SPSS software. Table 3 establishes the standard distribution and academic interpretation of the Cronbach's Alpha ranges applied to this instrument. According to Ahmad et al. (2024), Cronbach's Alpha scores falling between 0.7 and 0.9 range from acceptable to excellent.

As mentioned prior in Table 2, the analysis shows a Cronbach's alpha of .868 for Top-down reading, .942 for Bottom-Up reading, and .915 for classroom reading. The overall Cronbach's alpha for all 27 combined items is .951. According to the criteria, these scores reveal strong to excellent internal reliability for the chosen instrument. Further analysis using SPSS was executed on these reliable constructs to answer the main research questions of the study.

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

Ethical Considerations and Data Analysis

Before data collection, standard ethical protocols were administered to protect participant rights. Participation in the survey was completely voluntary, and all 145 respondents provided informed consent before accessing the questionnaire items. To eliminate administrative bias and guarantee participant privacy, all submissions were gathered entirely anonymously.

Following data collection, further analysis using SPSS software was executed on these constructs to answer the main research questions of the study. Descriptive statistics were calculated to evaluate baseline student perceptions, while inferential statistical treatments were applied to observe the systemic interrelationships and cross-disciplinary variances of reading anxiety among the cohorts.

FINDINGS

Demographic Analysis

According to Zienefuss, et.al (2021), researchers report 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 4- Percentage for Demographic Profile

Question	Demographic Profile	Categories	Percentage (%)
1	Gender	Male	43%
		Female	57%

2	Discipline	Science & Technology	53%
		Social Sciences & Humanities	45%

Table 4 presents the demographic profile of the respondents. The findings indicated that 43% of the respondents were male, while 57% were female. In terms of academic discipline, 53% of the respondents were from the Science & Technology field, and 45% were from Social Sciences & Humanities.

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, whereas a high SD indicates they are more spread out. It is good to have a high SD.

Findings for Top-down reading anxiety

This section presents data to answer research question 1: How do learners perceive top-down reading anxiety? In the context of this study, this is measured by (i) background and cultural knowledge and (ii) general reading.

Top-Down Reading Anxiety

Table 5- Mean 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.	3.56	0.95
BCKQ2 It is worrying to me when the ideas expressed in the text are culturally unclear	3.56	0.85
BCKQ3 I get upset when I lack the previous knowledge about the ideas expressed in the text.	3.59	0.93

Table 5 presents learners' perceptions of top-down reading anxiety related to background and cultural knowledge. Overall, the mean scores for all three items are relatively high (3.56-3.59), indicating that learners generally experience anxiety when their prior knowledge does not align with the text. The highest mean is observed for BCKQ3 (M 3.59, SD 0.93), suggesting that the lack of previous knowledge expressed in the text is upsetting for learners. Similarly, unfamiliar titles (BCKQ1) and culturally unclear ideas (BCKQ2), with identical mean scores (SD 3.56), also contributed to discomfort and worry, and reading anxiety among foreign language learners. These findings suggest that insufficient background and cultural knowledge play a pivotal role in triggering top-down anxiety among learners.

Table 6- Mean 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 points exist in the text.	3.57	0.96
GRAQ2 When I cannot recognize minor ideas (details) of the text, it is worrying to me.	3.51	0.99
GRAQ3 I am nervous when I cannot spot the main idea of a paragraph.	3.77	0.89
GRAQ4 It bothers me when I cannot express my opinions or feelings about the text.	3.63	0.96

As shown in Table 6, learners also report moderate to relatively high levels of anxiety related to general reading ability, with mean scores ranging from 3.51 to 3.77. The highest level of anxiety associated with difficulty in

identifying the main idea of the text (with a mean of 3.77, SD 0.89) in GRAQ3 indicates that global comprehension problems posed a major source of concern. This is followed by GRAQ4 (M 3.63, SD 0.96), suggesting that learners' difficulty in interpreting and expressing their opinions about a text contributes to reading anxiety. Additionally, learners report worry with the inability to grasp the gist of the text, despite the absence of unfamiliar vocabulary or grammatical structures (GRAQ1 M:3.57, SD:0.96), implying that comprehension difficulties extend beyond linguistic knowledge. Although GRAQ2 records the lowest mean (M: 3.51, SD 0.99), it still reflects a noticeable level of anxiety related to recognizing minor details in a text. Collectively, these findings suggest that difficulties in both global understanding and personal response play a role in shaping learners' tip-down reading anxiety.

Findings for Bottom-Up Reading Anxiety

This section presents data to answer research question 2- How do learners perceive bottom-up reading anxiety? In the context of this study, this is measured by (i) vocabulary and (ii) grammar.

Bottom-Up Reading Anxiety

Table 7- Vocabulary(V)

ITEM	Mean	SD
VQ1I feel uneasy when I cannot figure out the meanings of unknown words.	3.66	0.99
VQ2 It bothers me when I encounter a lot of words whose meanings are unclear	3.72	0.97
VQ3I get upset when I cannot figure out the meaning of a word that I feel I have seen before	3.70	0.99
VQ4 It bothers me when I feel unable to look up a word in the dictionary.	3.63	0.99
VQ5 I get confused when the word that I know has a different meaning in the sentence.	3.67	0.95
VQ6 I get upset when I come across idioms that are unfamiliar to me.	3.4	1.05
VQ7 It makes me feel uneasy when an unfamiliar word is made up of several parts or syllables.	3.43	1.05
VQ8 I feel worried when the unknown word is difficult to pronounce.	3.61	1.05

Table 7 summarizes learners' perceptions of vocabulary as a source of reading anxiety. As shown in the table, most learners feel bothered when they encounter many words whose meanings are unclear. This is reflected in item VQ2, which recorded the highest mean score (M = 3.72, SD = 0.97). When meanings are unclear, students may worry that they will misunderstand the key points of their reading. By comparison, item VQ7 (I get upset when I come across idioms that are unfamiliar to me) recorded the lowest mean score (M = 3.40, SD = 1.05), which is still above average. Overall, the results indicate that more than half of the respondents agree or strongly agree that vocabulary plays a significant role in contributing to their reading anxiety.

Table 8- Mean for Grammar(G)

ITEM	Mean	SD
GQ1 I am nervous when a certain sentence is long and has a complex structure	3.70	0.97
GQ2 When a certain sentence is grammatically unfamiliar is worrying to me.	3.68	0.93
GQ3 It bothers me when a passive voice is used in a sentence.	3.18	1.12
GQ4 I feel upset when the tense of a certain sentence is unclear to me.	3.41	1.08
GQ5 I worry when I am unable to recognize different parts of speech such as adjectives, adverbs, or connective words.	3.56	0.99
GQ6 I get confused when what I know about a grammatical point does not make any sense.	3.65	0.92

Table 8 provides an overview of the mean scores and standard deviations for grammar-related reading anxiety. The highest mean score was recorded for item GQ1 (I am nervous when a certain sentence is long and has a complex structure) ($M = 3.70$, $SD = 0.97$). In comparison, the lowest mean score was observed for item GQ3 (It bothers me when a passive voice is used in a sentence) ($M = 3.18$, $SD = 0.95$). The remaining items recorded mean scores ranging from 3.41 to 3.68, indicating moderate levels of grammar-related reading anxiety across all items.

Findings for Classroom Reading Anxiety

This section presents data to answer research question 3- How do learners perceive classroom reading anxiety?

Classroom Reading Anxiety

Table 9- Mean for Teaching Methods (TM)

ITEM	Mean	SD
TMQ1 It bothers me when the instructor calls on me to read out.	3.05	1.19
TMQ2 It worries me when the instructor calls on me to translate a piece of an English text into our first language.	2.97	1.22
TMQ3 When the instructor asks me reading comprehension questions, it is worrying to me.	3.07	1.20
TMQ4 It upsets me when the instructor chooses uninteresting texts to read in class.	2.67	1.11
TMQ5 It makes me feel uneasy when the instructor corrects my pronunciation or translation mistakes.	2.40	1.18
TMQ6 I am nervous when the instructor uses English as a medium of instruction and hardly ever makes use of our first language.	2.44	1.18

Table 9 presents the mean scores for teaching methods related to classroom reading anxiety. Overall, the findings indicated that respondents were generally uncertain regarding anxiety-provoking teaching methods, as most mean scores were close to the midpoint of the scale ($M \approx 3$). Among the items, TMQ3 (When the instructor asks me to read comprehension questions, it is worrying to me) recorded the highest mean score ($M = 3.07$), reflecting a tendency toward uncertainty to agreement. In contrast, TMQ5 (It makes me feel uneasy when the instructor corrects my pronunciation or translation mistakes) obtained the lowest mean score ($M = 2.40$), indicating a tendency toward disagreement. The remaining items also fell within the uncertain range, suggesting that students neither clearly agreed nor disagreed that these teaching practices caused reading anxiety.

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 research questions on correlation.

Findings for the Relationship between top-down reading anxiety and bottom-up reading anxiety

This section presents data to answer research question 4: Is there a relationship between top-down reading anxiety and bottom-up reading anxiety?

(H1-There is no relationship between top-down reading anxiety and bottom-up reading anxiety)

To determine if there is a significant association in the mean scores between top-down reading anxiety and bottom-up reading anxiety, data is analysed using SPSS for correlations. Results are presented separately in Tables 10 and 11 below.

Table 10- Correlation between top-down reading anxiety and bottom-up reading anxiety

		TOP-DOWN	BOTTOM-UP
TOP-DOWN	Pearson (Correlation	1	.797**
	Sig (2-tailed)		<.001
	N	145	145
BOTTOM-UP	Pearson (Correlation	.797**	1
	Sig (2-tailed)	<.001	
	N	145	145

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

Table 10 shows that there is an association between top-down and bottom-up. Correlation analysis shows that there is a highly significant association between top-down and bottom-up ($r=.797^{**}$) and ($p=.000$). According to He (2024), the coefficient is significant at the .05 level, and a 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. This means that there is also a strong positive relationship between top-down and bottom-up. The null hypothesis is rejected.

Findings for the Relationship between top-down reading anxiety and classroom reading anxiety

This section presents data to answer research question 5: Is there a relationship between top-down reading anxiety and classroom reading anxiety?

(H2-There is no relationship between top-down reading anxiety and classroom reading anxiety)

Table 11- Correlation between top-down reading anxiety and classroom reading anxiety

		TOP-DOWN	CLASSROOM READING
TOP-DOWN	Pearson (Correlation	1	.406**
	Sig (2-tailed)		<.001
	N	145	145
CLASSROOM READING	Pearson (Correlation	.406**	1
	Sig (2-tailed)	<.001	
	N	145	145

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

Table 11 shows that there is an association between top-down and classroom reading. Correlation analysis shows that there is a moderately significant association between top-down and classroom reading ($r=.406^{**}$) and ($p=.000$). 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. This means that there is also a moderate positive relationship between top-down and classroom reading. The null hypothesis is rejected.

Inferential Statistics

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both are used 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, the T-test and ANOVA are used to test hypotheses. Researchers use t-tests and ANOVA 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, the T-test and ANOVA are done to identify significant differences. The output of a t-test provides a p-value (significance value). If this p-value is below a predetermined threshold (often 0.05), it indicates a statistically significant difference, allowing researchers to conclude the populations from which their samples were drawn.

Findings for Significant Difference for types of reading across Disciplines

This section presents data to answer research question 6: Is there a significant difference for all types of reading across disciplines?

(H3-There is no significant difference for all types of reading across disciplines)

To determine if there is a significant association in the mean scores between all types of reading across disciplines, data is analysed using SPSS for correlations. Results are presented separately in Table 12 below.

Table 12- T-test for all types of reading across clusters

Independent Samples Test											
		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Significance		Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						One-Sided p	Two-Sided p			Lower	Upper
TOP_DOWN	Equal variances assumed	.097	.755	-1.205	143	.115	.230	-.14605	.12123	-.38568	.09359
	Equal variances not assumed			-1.219	106.257	.113	.226	-.14605	.11981	-.38357	.09148
BOTTOM_UP	Equal variances assumed	.051	.822	-.663	143	.254	.508	-.08794	.13261	-.35007	.17419
	Equal variances not assumed			-.663	102.828	.254	.509	-.08794	.13256	-.35085	.17497
TEACHING	Equal variances assumed	.046	.830	-1.203	143	.115	.231	-.20693	.17194	-.54679	.13294
	Equal variances not assumed			-1.186	98.502	.119	.238	-.20693	.17446	-.55310	.13925

With reference to Table 12, a T-test was conducted to examine the effects of types of reading across disciplines. The analysis shows there is no significant difference between top-down ($F=0.097, p=0.230$), bottom-up ($F=0.051, p=0.508$), and teaching methods ($F=0.046, p=0.231$) across disciplines. Therefore, the null hypothesis is accepted.

CONCLUSION

Summary of Findings and Discussions

This study examined how students perceived top-down, bottom-up, and classroom reading anxiety, as well as the connections between these aspects and possible variations among academic fields. Overall, the results show that reading anxiety is a multifaceted phenomenon that Malaysian university students studying French as a foreign language experience at discernible levels.

When it came to top-down reading anxiety, students reported feeling more anxious when they didn't have the necessary background or cultural knowledge and when they had trouble recognizing the major themes or responding to texts. These findings suggest that reading anxiety is significantly influenced by difficulties with global comprehension and schema activation. This result is in parallel with the findings of Matsuda and Gobel (2004), who emphasized learners' confidence and perceived cultural proximity as contributing factors, and Saito et al. (1999), who emphasized the role of unfamiliar content and cultural distance in reading anxiety.

Regarding bottom-up reading anxiety, students showed moderate to high anxiety levels associated with grammatical complexity and word load. Long sentence patterns, confusing grammatical forms, and difficulties

with novel lexical elements were thought to be especially anxiety-inducing. This finding supports previous research by Sellers (2000) and Zhao et al. (2013), who discovered that linguistic difficulty considerably impairs comprehension and raises anxiety connected to reading. These results reflect Zoghi's (2012) assertion that a major contributing factor to bottom-up reading anxiety is still a lack of grammatical and lexical expertise.

When it came to reading anxiety in the classroom, students typically reported moderate levels of anxiety, and many expressed uncertainties rather than strong agreement that the teaching methods caused anxiety. Corrective feedback and the use of instructional language were viewed as less intimidating, but answering comprehension questions caused some anxiety. This result somewhat mirrors the trends reported by Matsuda and Gobel (2004), indicating that learners' affective preparedness and the instructional context have an impact on anxiety in the classroom.

Strong positive correlations between top-down and bottom-up reading anxiety were found through correlation analyses, suggesting that linguistic processing issues and global comprehension difficulties are closely related. This result validates Rahmat et al.'s (2020) claim that top-down and bottom-up anxieties function interdependently rather than independently and supports the multifaceted nature of reading anxiety put forth by Saito et al. (1999). Furthermore, a moderately positive correlation was found between top-down reading anxiety and classroom reading anxiety, indicating that students who have trouble with holistic text interpretation and schema activation are more likely to feel anxious when reading in class. This result is consistent with Zhao et al. (2013), who observed that learners' emotional reactions during reading are shaped by the interaction between cognitive challenges and instructional demands.

Lastly, there were no obvious distinctions in reading anxiety between academic fields, suggesting that students in the social sciences and humanities and science and technology have similar levels of reading anxiety. This suggests that reading anxiety in foreign languages is a common problem among diverse learner populations and is more influenced by cognitive and affective factors than by disciplinary background.

Implications and Suggestions for Future Research

Theoretical and Conceptual Implications

The results provide empirical evidence for the Cognitive Load Theory (Sweller, 1988) as a framework for comprehending reading anxiety in situations involving foreign languages. Excessive intrinsic and extrinsic cognitive load may overload learners' working memory, especially when language resources and prior knowledge are scarce, according to elevated levels of top-down and bottom-up reading anxiety. The conceptual paradigm put forth by Rahmat et al. (2020), which emphasizes the interdependence of schema-based processing and language decoding demands in reading anxiety, is further supported by the substantial correlation between top-down and bottom-up anxiety.

Pedagogical Implications

In terms of pedagogy, the results highlight the significance of teaching strategies that minimize needless cognitive burden while attending to the emotive requirements of students. While explicit vocabulary and grammatical guidance might ease bottom-up reading anxiety, pre-reading exercises that draw on background and cultural knowledge may help lessen top-down reading anxiety. To create a less stressful learning environment, teachers are urged to employ supportive questioning techniques, include group reading assignments, and strike a balance between the target language and the students' native tongue.

Suggestions for Future Research

To gain a profound understanding of learners' cognitive and emotional experiences during reading, qualitative methods such as think-aloud procedures or interviews could be considered in future studies. Longitudinal studies may also examine how reading anxiety changes as students become more fluent and more culturally comfortable in using the language learnt. Plus, future research could examine the efficacy of targeted teaching strategies designed to minimise reading anxiety and cognitive load across various foreign-language contexts.

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