

Is There a Relationship between All Types of Reading Anxiety?

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DOI: <https://dx.doi.org/10.47772/IJRISS.2026.10200371>

Received: 20 February 2026; Accepted: 27 February 2026; Published: 11 March 2026

ABSTRACT

This study examines how three forms of reading anxiety; top-down, bottom-up, and classroom-based influence learners' academic reading across disciplines. Using a quantitative survey, data were collected through a five-point Likert-scale instrument adapted from Miao and Vibulphol (2020) and Zoghi (2012) to measure the relationships among these anxiety types. The respondents comprised 230 university-level students enrolled in an academic reading course at a Malaysian public university. The findings show that learners experienced the highest anxiety when identifying main ideas and interpreting overall meaning, while expressing personal responses generated comparatively lower anxiety. Vocabulary difficulty and grammatical complexity emerged as substantial contributors to bottom-up anxiety, and interactive or evaluative classroom tasks intensified classroom reading anxiety. Strong positive relationships were observed among all anxiety dimensions, whereas no significant disciplinary differences appeared, indicating similar anxiety patterns across fields. The results support the view that reading depends on coordinated top-down and bottom-up processing and that anxiety disrupts this interaction, particularly when readers struggle with global comprehension or linguistic decoding. Consistent with Attentional Control Theory (ACT), anxiety appears to redirect attention toward perceived difficulties. These findings suggest the need for instruction that strengthens background-knowledge activation, enhances vocabulary and grammar support, and incorporates low-pressure classroom practices to reduce reading anxiety across disciplines as strong correlation among anxiety types were shown.

Keywords: Top-down reading anxiety, bottom-up reading anxiety, classroom reading anxiety, multidisciplinary, university students

INTRODUCTION

Background of Study

Reading comprehension is a complex cognitive process that requires readers to coordinate attention, linguistic knowledge, and prior experience. However, many learners experience reading anxiety, which interferes with this process and negatively affects reading performance (Barnes et al, 2024). Issues related to reading anxiety and reading performance have long been a central concern for language instructors, as anxiety can significantly influence students' ability to comprehend written text (Barnes et al, 2024; Fishstrom et al, 2024). Such challenges are evident across educational levels, from primary education to university settings. Drawing on Attentional Control Theory (ACT) proposed by Eysenck et al. (2007), anxiety is seen to disrupt the efficient allocation of attentional resources by shifting focus away from task-relevant processing toward and self-monitoring. In reading contexts, anxiety may occur from various sources. Based on this theory, top-down reading anxiety occurs when learners feel uncertain about their background knowledge or understanding of the text, limiting their ability to focus on overall meaning and to use prior knowledge effectively. In contrast, bottom-up reading anxiety occurs when learners are unfamiliar with the vocabulary or complex grammar structures, causing readers to focus too

much on word-level decoding rather than understanding ideas presented in the text as a whole. Lastly, classroom reading anxiety, such as fear of being called to read aloud or evaluated by others, creates external pressure that distracts attention from the text and increases self-focus. These types of anxiety reduce attentional control and negatively affect reading comprehension, highlighting the importance of examining reading anxiety as a critical factor in understanding students' reading performance.

There have been several existing studies that generally report the moderate levels of reading anxiety among Malaysian learners across educational levels. Mohamad (2025) found that ESL foundation students experienced moderate reading anxiety despite demonstrating high reading engagement, suggesting affective challenges persists even among motivated readers. Previous research showed that contextual factors also influence reading anxiety as reflected in the study by Kamaruddin and Kaur (2023) which recorded heightened reading anxiety among Malaysian university learners in online learning environments, attributing this to reduced interaction, limited feedback, and lower self-confidence. In addition, earlier work by Samsuddin (2013) verified a negative relationship between reading anxiety and reading comprehension performance among Malaysian ESL learners, reinforcing findings from international studies that anxiety deter reading outcomes.

Aside from the aforementioned studies, a meta-analysis by Li (2022) agreed that there is a moderate correlation between language anxiety and reading performance. In systematically analysing the relationships among dissimilar types of reading anxiety with other crucial aspects including general language anxiety, reading performance, reading self-efficacy and reading strategy use, it was found that the affective factor such as reading anxiety is not to be addressed as an isolated construct, however, it is related to learners' overall affective experience with the language. Hence, learners who face higher levels of language anxiety also experience higher levels of anxiety specifically related to reading tasks. As reading skill is generally known as a receptive skill, Öztürk (2023) highlighted that the reading anxiety affected by the learners' responses to the classroom environment, which includes the teaching methods applied in the classroom (this aspect is closely related to one of the variables in this current study). In short, it is evident that reading anxiety persists and affects learners' comprehension of the language aside from their mother tongue.

Statement of Problem

In Malaysian higher education, universities expect students to approach English academic texts with confidence and strategic awareness because reading ability supports disciplinary learning, critical reasoning, and scholarly involvement. In the ideal condition, learners experience minimal anxiety, which enables them to allocate their mental effort to understanding and interpretation. Recent scholarship also highlights how supportive classroom settings actively lower language anxiety and maintain engagement, thus promoting the development of academic literacy (Andini et al., 2025; Li, 2022).

Nevertheless, research demonstrates that Malaysian university students continue to experience substantial reading anxiety. Investigations conducted in online and face-to-face contexts show that learners often report moderate to high anxiety when engaging with English academic texts. Factors such as unfamiliar vocabulary, complex grammatical patterns, insufficient background knowledge, and apprehension about classroom evaluation commonly trigger this anxiety (Kamaruddin & Kaur, 2023; Noorezam et al., 2022). Scholars have conceptualised reading anxiety as comprising three dimensions: top-down anxiety linked to background and cultural knowledge, bottom-up anxiety associated with linguistic processing, and classroom reading anxiety generated by instructional and assessment pressures. Although several Malaysian studies have documented strong reading engagement, anxiety still weakens students' perceived reading ability (Mohamad, 2025). The persistence of this problem intensifies in the post-pandemic period, as many Malaysian undergraduates display heightened anxiety that amplifies academic stress (Ghazali et al., 2024).

When institutions fail to address reading anxiety, students may incline towards reading avoidance, comprehend texts in a less effective manner, lose motivation in the classroom, and perform poorly. Meta-analytic findings establish a negative relationship between foreign language reading anxiety and achievement (Li, 2022).

Despite increasing scholarly attention, Malaysian research has primarily examined overall anxiety levels or isolated instructional settings. Limited work has explored learners' perceptions of different anxiety dimensions

or analysed how these forms of reading anxiety interact across academic disciplines. Therefore, the present study aims to investigate students' perceptions of top-down and bottom-up anxiety within classroom contexts and to examine the relationships among these anxiety types across disciplinary fields.

Objective of the Study and Research Questions

This study aims to examine how different forms of reading anxiety; top-down, bottom-up, and classroom-based shape learners' academic reading experiences across disciplines. It seeks to determine the relationships among these anxiety types and identify whether disciplinary differences influence their intensity or pattern. Through this analysis, the study provides a clearer understanding of how reading anxiety operates within diverse academic contexts.

Specifically, this study is done to answer the following questions;

1. How do learners perceive top-down reading anxiety?
2. How do learners perceive bottom-up reading anxiety?
3. How do learners perceive classroom reading anxiety?
4. Is there a relationship among all types of reading anxiety?
5. Is there a significant difference in all types of reading anxiety across disciplines?

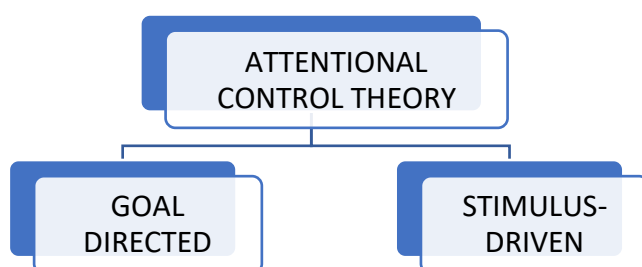
LITERATURE REVIEW

Theoretical Framework of the Study

Interactive Model for Reading

Drawing on Rumelhart's Interactive Model for Reading (1977), reading is best understood as a non-linear process in which bottom-up decoding and top-down knowledge-driven mechanisms interact to facilitate comprehension. This framework extends earlier linear models by emphasising continuous interaction among graphemic, lexical, syntactic, and semantic cues, a view later empirically supported by the interactive activation model, which demonstrated reciprocal activation across processing levels (Rumelhart & McClelland, 1982). Contemporary ESL research demonstrates that anxiety interferes with this interaction by limiting learners' ability to flexibly compensate across processing levels (Li, 2022). Lexical and syntactic difficulties amplify bottom-up anxiety, while limited disciplinary schemata and cultural knowledge trigger top-down anxiety, collectively impairing global meaning construction (Noorezam et al., 2022). Moreover, classroom-based pressures intensify these effects by constraining strategic engagement, especially within disciplines that impose high cognitive and linguistic demands (Andini et al., 2025; Kamaruddin & Kaur, 2023). Malaysian studies applying Rumelhart's framework similarly demonstrate that undergraduate readers depend on coordinated bottom-up and top-down strategies when engaging with academic texts, reinforcing the model's relevance in regional tertiary contexts (Abd. Hamid et al., 2024). Within this framework, reading anxiety emerges as a multidimensional affective construct that systematically weakens interactive processing during ESL academic reading.

Attentional Control Theory (ACT)



Attentional Control Theory (ACT), introduced by Eysenck et al. (2007), explains how anxiety affects performance by reducing a person's ability to control attention efficiently. According to this theory, anxiety does not always lead to incorrect task outcomes, but it makes cognitive processing slower and less efficient. ACT identifies two main attentional systems. The goal-directed system works in a top-down manner and helps individuals focus on task goals, ignore distractions, and apply strategies. In contrast, the stimulus-driven system operates automatically and directs attention toward noticeable or threatening stimuli. When a person becomes anxious, attention shifts from the goal-directed system to the stimulus-driven system (Eysenck et al., 2007).

In academic reading, ACT explains different types of reading anxiety. Top-down reading anxiety occurs when learners feel unsure about their background knowledge or understanding of the topic. Anxiety makes it difficult for readers to focus on overall meaning and to use prior knowledge. Bottom-up reading anxiety arises when learners face unfamiliar vocabulary or complex grammar. These features quickly draw attention and cause readers to focus too much on decoding words rather than understanding ideas. Classroom reading anxiety, such as fear of being called to read or evaluated, creates external pressure that further distracts attention and increases self-focus instead of text-focused processing.

ACT works well with Rumelhart's Interactive Model for Reading, which explains reading as an interaction between top-down and bottom-up processes. While Rumelhart's model describes how these processes work together, ACT explains why anxiety disrupts this interaction. When anxiety takes over attention, effective reading becomes more difficult. Together, these theories provide a clear framework for understanding reading anxiety among ESL university students across disciplines.

Past Studies

There are several studies that have investigated the relationship between anxiety and reading performance. Recent research consistently demonstrates that reading anxiety is a significant affective factor influencing performance across educational levels and instructional context. A study by Macdonald, Cirino, Miciak & Grills (2021) examined the role of reading anxiety as an emotional (noncognitive) variable in reading achievement among struggling fourth and fifth grade students. The study involved 272 struggling readers selected from nine schools in the southern United States. The authors measured reading anxiety and general anxiety along with cognitive predictors (working memory and verbal knowledge) and reading outcomes including word reading accuracy, oral reading fluency, and reading comprehension using established standardized instruments to assess the unique impact of reading anxiety. Regression analyses revealed that reading anxiety was moderately correlated with general anxiety ($r \approx 0.63$) but functionally distinct, as general anxiety did not significantly predict reading outcomes once other predictors were included. Reading anxiety contributed uniquely to reading comprehension, even after accounting for cognitive predictors and demographics, supporting the idea that anxiety can interfere with complex reading tasks. The study highlights that reading anxiety may undermine children's ability to process information efficiently during demanding reading tasks and suggests that reading anxiety could be an important target for future intervention, especially in late elementary struggling readers. Another recent study by Fishstrom et al. (2024) also looks at the relationship between reading and anxiety among upper elementary students with reading difficulties, with a particular focus on differentiating reading-specific anxiety from more general forms of anxiety. The study involves 536 students in grade three to five, who scored at or below the 30th percentile on a standardized reading comprehension screening, showing persistent reading difficulties. Using self-report measures of reading anxiety, general anxiety, and test anxiety alongside standardised assessments of word reading accuracy, reading fluency, and reading comprehension, the researchers examined how different types of anxiety are related to various reading outcomes. The findings revealed that although reading anxiety, general anxiety and test anxiety were moderately correlated, only reading anxiety consistently and negatively predicted reading performance, particularly in word reading fluency, text reading fluency, and reading comprehension. Considering these findings, the impact of reading anxiety appears more obvious among students with mild to moderate reading difficulties, while the relationship was weaker for students with more severe difficulties. Consequently, these results highlight reading anxiety as a prominent and meaningful affective factor that contributes to reading performance beyond general emotional distress. The study underscores the importance of incorporating socio-emotional considerations, particularly reading-specific anxiety, into reading assessment and intervention practices for struggling readers. Both studies above show that

reading-specific anxiety is distinct from general or test anxiety and is meaningfully associated with reading outcomes.

Similar patterns have been observed in second and foreign language contexts among university students. For example, the study by Soomro, Khan, and Younus (2019) which examined the effects of different types of reading anxiety which includes top-down, bottom-up, and classroom reading anxiety, on the reading performance of undergraduate engineering students in Pakistan. The study involved 100 non-English major undergraduates enrolled in English language courses which made use of a modified version of the Foreign Language Reading Anxiety Scale to capture anxiety arising from meaning construction, linguistic decoding, and classroom reading contexts. Students' reading performance was assessed using a reading comprehension test. The findings revealed that all three types of reading anxiety were significantly and negatively correlated with reading performance, signifying that higher anxiety levels were associated with poorer comprehension outcomes. Among the three dimensions, top-down reading anxiety (difficulties in understanding overall meaning and integrating background knowledge) appeared as the strongest predictor of reading performance, followed by classroom reading anxiety and bottom-up anxiety. These results underscore the comprehensive nature of reading anxiety and suggest that affective factors may greatly affect both cognitive processing and classroom engagement during reading tasks. The study highlights the importance of addressing reading-specific anxiety through instructional practices that support comprehension, reduce evaluative pressure, and foster a supportive classroom environment, particularly in English-as-a-foreign-language contexts. Next, the study by Kamaruddin and Kaur (2023) explored the prevalence and sources of reading anxiety in online classroom contexts among Malaysian university students, particularly during the transition from the pandemic-induced distance learning to post-pandemic instructional environments. As most previous research on reading anxiety has focused on traditional face-to-face settings, a structured questionnaire was administered to 96 university students engaged in online distance learning at a Malaysian public university to evaluate the level of reading anxiety experienced and the factors contributing to it. The study showed that learners reported high levels of reading anxiety in online learning environments, with the requirement to attend and read in online classes (this is identified as a primary source of anxiety). Additionally, self-perceived English proficiency significantly influenced the level of anxiety experienced. These findings indicate that the remote mode of instruction, characterised by reduced physical interaction and heightened learner autonomy, may intensify affective barriers to reading comprehension and strategy use, particularly when the students lack confidence in their English abilities. The study highlights the need for clear and consistent instructor feedback and enhanced pedagogical support to mitigate reading anxiety in online or blended learning settings among university students. It also underscores the importance of considering socio-emotional dimensions in curriculum design and instructional planning as institutions transition back to post-pandemic face-to-face or hybrid classroom setting.

Collectively, these studies emphasise that reading anxiety operates across age groups and learning context, and that it can hamper reading performance by disrupting cognitive processing and learner engagement.

Conceptual Framework of the Study

Reading is an interactive process between the reader and the text. In between the process, readers may face anxiety that can hinder understanding of the text contents. According to Rahmat, et.al. (2020) fear comes from facing reading difficulties. The difficulties can be influenced by the teaching methods in the classroom. Figure 1 below shows the conceptual framework of the study. This study explores the relationship between all types of reading anxiety; top-down, bottom-up and classroom reading. In the context of this study, the variable top-down reading anxiety is supported by constructs by Miao and Vibulpho (2020) such as (i) background and cultural knowledge, and (ii) general reading ability. The variable bottom-up reading anxiety is supported by constructs by Miao and Vibulpho (2020) such as (i) vocabulary and (ii) grammar. Lastly, the variable classroom reading is supported by the Zoghi's (2012) construct of classroom reading. Additionally, this study explores if there is a relationship between all types of reading anxiety.

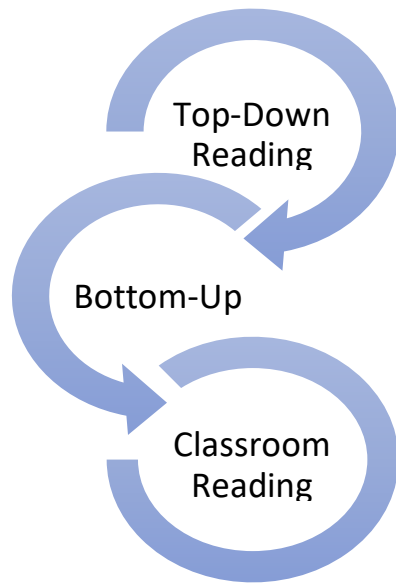


Figure 1 – Conceptual Framework of the Study-

Relationship between all types of reading anxiety

METHODOLOGY

This quantitative study is done to explore the relationship between all types of reading anxiety. A convenient sample of 230 participants responded to the survey. The instrument used is a 5 Likert-scale survey and is rooted from Miao and Vibulphol (2020) and Zoghi (2012) to reveal the variables in table 3 below. Table 1 below shows the categories used for the Likert scale; 1 is for Strongly Disagree, 2 is for Disagree, 3 is for Uncertain, 4 is for Agree and 5 is for Strongly Agree.

Table 1- Likert Scale Use

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

Table 2- Distribution of Items in the Survey

Table 2- Distribution of Items in Instrument

SECT	TYPE ANXIETY	OF	CONSTRUCT	No Of Items	Item	Cronbach Alpha
B	TOP-DOWN READING		Background and Cultural Knowledge	3	7	.857
			General Reading Ability	4		

C	BOTTOM-UP READING	Vocabulary	8	14	.945
		Grammar	6		
D	CLASSROOM READING	Teaching Methods	6	6	.878
		TOTAL		27	.954

Table 2 shows the distribution of items in three main sections to measure three types of reading anxiety which are top-down reading (Section B), bottom-up reading (Section C) and classroom reading (Section D) across 27 items with high internal reliability. Section B indicates that top-down reading anxiety, through background and cultural knowledge (3 items) and general reading ability (4 items) demonstrates strong consistency ($\alpha = .857$). In addition, Section C reveals that bottom-up reading anxiety, which includes vocabulary (8 items) and grammar (7 items), records the highest reliability ($\alpha = .945$). Section D focuses on classroom reading anxiety (6 items) specifically on teaching methods is also highly reliable ($\alpha = .878$). Overall, the results imply that all three anxiety types are meaningfully interconnected. Consequently, the strong total reliability ($\alpha = .954$) depicts that these constructs collectively reflect a stable measure of reading anxiety patterns in the present context.

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

In order to determine the internal reliability of the instrument, reliability analysis is one. Table 4 above shows the distribution and interpretation of Cronbach Alpha range. According to Ahmad, et.al. (2024), Cronbach Alpha scores between 0.7 to 0.9 is considered acceptable to excellent.

Table 2 also shows the reliability of the survey. The analysis shows a Cronbach alpha of .857 for Top-Down Reading, .945 for Bottom-Up Reading and .878 for Classroom Reading. The overall Cronbach Alpha for all 27 items is .954; 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.

Limitation

Several limitations of the study include the reliance on the use of convenience sampling from various academic disciplines within a single university restricts the representativeness of the sample. As a result, the findings may be generalised only to students within the participating university nationwide and may not be extended to undergraduate students across other universities in the country. Secondly, the reliance on self-report instruments may introduce response biases, including common method variances.

FINDINGS

Demographic Analysis

According to Zigenfuss, et.al (2021), researchers report demographic data in percentages to establish sample representatives. 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	22%
		Female	78%
2	Discipline	Science & Technology	65%
		Social Sciences & Humanities	35%

Table 4 depicts the demographic characteristics of the respondents. The majority were female (78%), with males representing 22% of the sample. Regarding academic discipline, 65% of participants were enrolled in Science and Technology programmes, while 35% were from Social Sciences and Humanities. Overall, the sample consisted primarily of female students and was largely drawn from science and technology-related fields.

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. The standard deviation (SD) reflects dispersion, which shows how far typical observations lie from the mean. Lower SD indicates more consensus; higher SD indicates greater heterogeneity. Whether higher or lower SD is desirable depends on the construct and research aims; it is not inherently good or bad.

Findings for Top-Down Reading Anxiety

This section presents data to answer research question 1 which is on 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.	3.14	0.97
BCKQ2 It is worrying to me when the ideas expressed in the text are culturally unclear	3.49	0.93
BCKQ3 I get upset when I lack the previous knowledge about the ideas expressed in the text.	3.51	1.02

Table 5 above depicts the mean scores and standard deviations for the three items based on Background and Cultural Knowledge (BCK), as the component of reading anxiety. The overall mean values range from 3.14 to 3.51 indicating a moderate level of anxiety. BCKQ3 (I get upset when I lack the previous knowledge about the ideas expressed in the text.) is recorded with the highest mean score (M=3.51, SD=1.02) among all three items, which indicate that respondents are most affected when they do not have prior knowledge related to the text. This implies that insufficient background knowledge significantly contributes to feelings of discomfort or/and anxiety during reading. BCKQ2 (It is worrying to me when the ideas expressed in the text are culturally unclear) comes in second with a relatively high mean score of (M=3.49, SD=0.93), indicating that cultural unfamiliarity in reading is a notable source of concern for readers. In contrast, BCKQ1 (I do not feel at ease when the title of the text is unfamiliar to me), recorded the lowest mean score (M=3.14, SD=0.97), even though it still reflects a moderate level of uneasiness, suggesting that unfamiliar titles causes less anxiety compared to unclear cultural references or lack of previous knowledge.

The standard deviation values, ranging from 0.93 to 1.02, indicate a moderate variation in respondents' perceptions, suggesting some differences in individual experiences regarding background and cultural knowledge during reading. Overall, the results highlight that lack of prior knowledge and culturally unclear content are more influential factors contributing to reading anxiety than unfamiliar text titles.

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.	3.40	0.98
GRAQ2 When I cannot recognize minor ideas (details) of the text, it is worrying to me.	3.38	0.97
GRAQ3 I am nervous when I cannot spot the main idea of a paragraph.	3.52	1.03
GRAQ4 It bothers me when I cannot express my opinions or feelings about the text.	3.37	1.02

Table 6 above depicts the mean scores and standard deviations for four items related to the General Reading Ability (GRA) as the dimension of reading anxiety. The mean scores range from 3.37 to 3.52, indicating an overall moderate level of anxiety associated with the reader's perceived general reading ability. It was found that GRAQ3 (“I am nervous when I cannot spot the main idea of a paragraph.”) recorded the highest mean score (M=3.52, SD=1.03). This result indicates that difficulty in identifying the main idea is the most provoking aspect of general reading ability in terms of intensifying the feeling of anxiety among the respondents, highlighting the importance of macro-level comprehension in reading.

This is followed by GRAQ1 (“I worry when I cannot get the gist of the text although no new vocabulary items or grammatical points exist in the text.”), which shows a relatively high mean score (M=3.4, SD=0.98), indicating that respondents are concerned when a text is incomprehensible despite linguistic simplicity, possibly reflecting self-doubt in their overall reading competence. Similar to GRAQ2 (“When I cannot recognize minor ideas (details) of the text, it is worrying to me.”), with the mean score M=3.38 (SD=0.97), suggesting that difficulty in understanding supporting details also contributes to reading anxiety to a slightly lesser extent.

The item with the lowest mean score is GRAQ4 (“It bothers me when I cannot express my opinions or feelings about the text.”) with M=3.37 and SD=1.02. While still indicating a moderate level of anxiety, the result suggests that expressive difficulties cause comparatively less concern than comprehension-related difficulties. The standard deviation values range from 0.97 to 1.03, indicating moderate variability in respondents' responses, signifying differences in individual confidence and reading experiences.

Overall, the findings suggest that difficulties in identifying main ideas and grasping overall meaning are the most prominent sources of anxiety related to general reading ability, while challenges in expressing personal responses to texts are relatively less prone to ignite anxiety among respondents.

Findings for Bottom-Up Reading Anxiety

This section presents data to answer the second research question on how 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- Mean for Vocabulary(V)

ITEM	Mean	SD
VQ1I feel uneasy when I cannot figure out the meanings of unknown words.	3.50	1.00
VQ2 It bothers me when I encounter a lot of words whose meanings are unclear	3.64	0.88
VQ3I get upset when I cannot figure out the meaning of a word that I feel I have seen before	3.49	0.99
VQ4 It bothers me when I feel unable to look up a word in the dictionary.	3.29	1.01
VQ5 I get confused when the word that I know has a different meaning in the sentence.	3.34	0.99
VQ6 I get upset when I come across idioms that are unfamiliar to me.	3.24	1.01
VQ7 It makes me feel uneasy when an unfamiliar word is made up of several parts or syllables.	3.29	0.96
VQ8 I feel worried when the unknown word is difficult to pronounce.	3.20	1.09

Table 7 shows the analysed mean scores and standard deviations for vocabulary-related bottom-up reading anxiety items. The table depicts that all eight items recorded mean values above 3.20, indicating a consistently moderate level of anxiety across vocabulary tasks. The findings further reveal that the highest score appears for VQ2 ($M = 3.64$, $SD = 0.88$), suggesting that students are most bothered by encountering many unfamiliar words, while VQ8 ($M = 3.20$, $SD = 1.09$) shows that difficult pronunciation causes slightly lower but still noticeable anxiety. These findings demonstrate that learners' overall reading comprehension is affected by the complexity and difficulty of understanding the textual elements in the reading text, such as the meaning and unfamiliar words. Hence, it is evident that bottom-up reading anxiety contributes to the overall reading anxiety.

These patterns align with past evidence showing that linguistic-level challenges commonly trigger anxiety due to the cognitive demands of decoding unfamiliar forms (Li, 2022). Additionally, the findings correspond with research indicating that bottom-up weaknesses can heighten overall reading anxiety, particularly when processing unfamiliar vocabulary (Öztürk, 2023). Overall, the results suggest that vocabulary-related difficulties form a substantial source of bottom-up reading anxiety, highlighting the importance of targeted vocabulary support to reduce learners' anxiety in reading.

Table 8- Mean for Grammar(G)

ITEM	Mean	SD
GQ1 I am nervous when a certain sentence is long and has a complex structure	3.20	1.13
GQ2 When a certain sentence is grammatically unfamiliar is worrying to me.	3.36	1.02

GQ3 It bothers me when a passive voice is used in a sentence.	2.72	1.04
GQ4 I feel upset when the tense of a certain sentence is unclear to me.	3.15	1.01
GQ5 I worry when I am unable to recognize different parts of speech such as adjectives, adverbs, or connective words.	3.22	1.04
GQ6 I get confused when what I know about a grammatical point does not make any sense.	3.40	1.00

Table 8 presents the results from the analysis of the mean score and standard deviation on grammar-related bottom-up reading anxiety items. From the data, there is an evident illustration of the learners' response to grammatical complexities when engaging in reading tasks. From the table, it is evident that the majority of the items have mean scores ranging from 3.15 to 3.40, indicating that learners experience moderate levels of anxiety when dealing with grammatical complexities that they are not familiar with. From the results, it is evident that GQ6, which deals with learners' confusions when there is a lack of grammatical prior knowledge that matches the text, recorded the highest mean score at 3.40 (SD = 1.00), indicating that learners experience the highest levels of emotional disruption when there are inconsistencies with the text and prior expectations. Moreover, the results show that GQ3, which deals with learners' use of the passive voice, recorded the lowest level of anxiety at M = 2.72 (SD = 1.04), revealing that learners are relatively comfortable with using the passive voice. Learners' preferences and overall findings for this section imply that the grammatical features of the reading text indeed induce reading anxiety among learners.

These findings are consistent with prior research that indicates that learners experience increased levels of anxiety when the level of linguistic processing exceeds their capacity, especially when dealing with complex sentence structures (Li, 2022). Moreover, the findings correspond with regional evidence that grammar-based anxiety often interacts with broader foreign-language anxieties across reading contexts (Öztürk, 2023). Overall, the results indicate that grammatical complexity forms a meaningful source of bottom-up reading anxiety, suggesting that explicit grammar support could help reduce learners' confusion and improve reading confidence.

Findings for Classroom Reading Anxiety

This section presents data to answer the third research question on 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.	2.89	1.17
TMQ2 It worries me when the instructor calls on me to translate a piece of an English text into our first language.	3.00	1.10
TMQ3 When the instructor asks me reading comprehension questions, it is worrying to me.	2.80	1.08
TMQ4 It upsets me when the instructor chooses uninteresting texts to read in class.	2.56	1.00
TMQ5 It makes me feel uneasy when the instructor corrects my pronunciation or translation mistakes.	2.23	1.01
TMQ6 I am nervous when the instructor uses English as a medium of instruction and hardly ever makes use of our first language.	2.39	1.03

Table 9 illustrates the mean scores and standard deviations for the six items based on learners' perceptions of classroom reading anxiety in relation to various Teaching Methods (TM). The mean scores range from 2.23 to 3.00, indicating an overall moderate level of anxiety associated with the teaching methods in the reading classroom.

The highest levels of anxiety were reported for translating English texts into their first language (TMQ2, $M = 3.00$, $SD = 1.10$). This result shows that translating a piece of an English text into their first language is the most provoking aspect of teaching method in terms of intensifying the feeling of anxiety among the respondents, highlighting the importance of providing scaffolding and support to reduce learners' stress in such tasks. Reading aloud (TMQ1, $M = 2.89$, $SD = 1.17$) and answering comprehension questions (TMQ3, $M = 2.80$, $SD = 1.08$) also elicited moderate anxiety, likely because these activities require active participation and public performance, which can increase self-consciousness and fear of making mistakes in front of peers.

In contrast, lower anxiety levels were observed for reading uninteresting texts (TMQ4, $M = 2.56$, $SD = 1.00$), using English as the medium of instruction (TMQ6, $M = 2.39$, $SD = 1.03$), and receiving corrections from the instructor (TMQ5, $M = 2.23$, $SD = 1.01$), likely because these activities are more passive, allow learners to engage at their own pace, and involve less immediate evaluation, reducing the pressure and fear of errors. The standard deviation values ranged from 1.00 to 1.17, indicating that learners' anxiety was more variable for interactive and evaluative activities and more consistent for less demanding tasks.

Overall, these findings suggest that learners perceive classroom reading anxiety most strongly in interactive and evaluative activities, whereas passive tasks or instructor feedback generate relatively less 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 Relationship between all types of reading anxiety

This section presents data to answer research question four, whether there is a relationship between all types of reading anxiety.

To determine if there is a significant association in the mean scores between all types of reading anxiety data is analyzed using SPSS for correlations. Results are presented separately in table 10 below.

Table 10- Correlation between all types of reading anxiety

		TOP-DOWN	BOTTOM-UP	CLASSROOM
TOP-DOWN	Pearson (Correlation)	1	.751**	.503**.
	Sig (2-tailed)		<.001	<.001
	N	230	230	230
BOTTOM-UP	Pearson (Correlation)	.751**	1	.619**
	Sig (2-tailed)	<.001		<.001
	N	230	230	230
CLASSROOM	Pearson (Correlation)	.503**.	.619**	

	Sig (2-tailed)	<.001	<.001	
	N	230	230	230

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

Table 10 shows there is an association between top-down and bottom-up reading. Correlation analysis shows that there is a high significant association between top-down and bottom-up reading ($r=.751^{**}$) and ($p<.001$). According to He (2024), 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 strong positive relationship between top-down and bottom-up reading.

Table 10 shows there is an association between bottom-up and classroom reading. Correlation analysis shows that there is a high significant association between bottom-up and classroom reading ($r=.619^{**}$) and ($p<.001$). According to He (2024), 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 strong positive relationship between bottom-up and classroom reading. Hence null hypothesis is rejected.

Inferential Statistics

According to He (2024), there are three main functions of a T-test and ANOVA. Firstly, both 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, T-test and ANOVA are done 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, 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 draw conclusions about the populations from which their samples were drawn.

Findings for Significant Difference for all types of reading anxiety across disciplines

This section presents data to answer research question five, whether there is a significant difference for all types of reading anxiety across discipline.

Table 11- T-test for all types of Reading Anxiety across disciplines

		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	3.844	.051	-.054	228	.478	.957	-.00548	.10061	-.20373	.19278
	Equal variances not assumed			-.052	141.188	.479	.959	-.00548	.10552	-.21409	.20314
BOTTOM_UP	Equal variances assumed	4.473	.036	1.122	228	.132	.263	.12024	.10720	-.09099	.33147
	Equal variances not assumed			1.060	137.778	.146	.291	.12024	.11344	-.10407	.34455
CLASSROOM_READING	Equal variances assumed	1.496	.223	.362	228	.359	.718	.04222	.11675	-.18783	.27227
	Equal variances not assumed			.355	152.718	.362	.723	.04222	.11905	-.19298	.27743

With reference to table 11, a T-test was conducted to examine the effects of top-down, bottom-up and classroom reading anxiety across disciplines. The analysis shows there is no significant difference between top-down ($F=03.844, p=0.957$) bottom-up ($F=4.473, p=0.263$) and classroom reading ($F=1.496, p=0.718$) anxiety across disciplines. Hence, null hypothesis is accepted.

CONCLUSION

Summary of Findings and Discussions

The findings of this study demonstrate that reading anxiety among Malaysian university students is multidimensional, with each type of anxiety contributing differently to their reading experience. For the first research question, learners reported the highest anxiety when identifying main ideas and understanding overall meaning, showing that top-down processes are particularly vulnerable. This aligns with Soomro, Khan, and Younus (2019), who found that top-down reading anxiety was the strongest predictor of poor performance, suggesting that difficulties in global comprehension consistently heighten anxiety. Then, in answering the second research question, vocabulary unfamiliarity and grammatical complexity emerged as substantial sources of bottom-up anxiety. This echoes findings by Macdonald et al. (2021), who reported that anxiety disrupts efficient processing during demanding reading tasks, and by Fishstrom et al. (2024), who showed that reading anxiety directly predicts weaker reading fluency and comprehension. The pattern suggests that linguistic barriers play a central role in triggering affective responses that impede cognitive processing. In understanding learners' perception of reading anxiety, it was strongest during interactive or evaluative tasks, mirroring Kamaruddin and Kaur's (2023) observation that evaluative pressure and reduced confidence intensify anxiety, especially in remote or high-stakes reading situations. Regarding the relationship among all types of reading anxieties, the significant positive relationships among all three anxiety types indicate that difficulties in one dimension tend to reinforce challenges in the others. This supports the view in Soomro et al. (2019) that reading anxiety functions as a comprehensive and interconnected affective construct, not independent categories. Lastly, it has been proven that reading anxiety showed no significant disciplinary differences. This corresponds with broader findings from Fishstrom et al. (2024), indicating that reading anxiety operates similarly across groups, suggesting the issue is pervasive rather than discipline-specific. Overall, the study's findings align strongly with past literature, confirming that reading anxiety; whether top-down, bottom-up, or classroom-based remains a meaningful barrier to effective academic reading and warrants targeted interventions in Malaysian higher education.

Implications and Suggestions for Future Research

The findings of this study reinforce the conceptual framework, which positions reading as an interactive process where readers draw on both text-based information and prior knowledge. Rumelhart's Interactive Model supports this view by arguing that comprehension depends on the coordinated flow between top-down and bottom-up processes. The strong anxiety respondents reported when identifying main ideas aligns with constructs by Miao and Vibulpho (2020), indicating that weaknesses in background or cultural knowledge can disrupt top-down comprehension. Likewise, the substantial anxiety linked to vocabulary and grammatical complexity supports the framework's bottom-up dimension, showing that linguistic decoding difficulties interfere with meaning construction.

Attentional Control Theory (Eysenck et al., 2007) further strengthens the framework by explaining how anxiety redirects attention from goal-focused comprehension to a stimulus-driven focus on perceived difficulties. This helps clarify why classroom-based anxiety, based on Zoghi's (2012) construct, is most evident during interactive or evaluative tasks where attention is easily diverted from reading goals. The positive relationships found among all three anxiety types mirror the framework's assumption that reading difficulties are interconnected. Finally, the absence of disciplinary differences suggests that these cognitive-affective mechanisms operate similarly across contexts, reinforcing the framework's relevance for examining the relationship between all types of reading anxiety.

Pedagogical Implications

These findings suggest that instructors should provide clearer support for global comprehension, particularly by activating background knowledge, introducing disciplinary context, and modelling how to identify main ideas to ease top-down anxiety. Addressing bottom-up difficulties requires explicit teaching of vocabulary, grammar, and decoding strategies so learners can process texts with greater confidence. This is due to classroom-based anxiety intensifying during evaluative or interactive tasks, lecturers should create low-pressure participation opportunities and give supportive, timely feedback to reduce fear of judgement. The strong relationships among

all anxiety types and the absence of disciplinary differences indicate that reading anxiety is a widespread concern. Thus, universities should embed reading strategy instruction and offer systematic language support across programmes to strengthen students' academic reading performance.

Suggestions for Future Research

Future researchers should explore how disciplinary text characteristics such as specialised vocabulary, dense syntax, or abstract conceptual structures shape different reading anxiety types, as current findings show no significant disciplinary differences despite clear linguistic variation. More detailed within-discipline analyses could reveal hidden patterns not captured by broad comparisons. Researchers may also investigate how top-down, bottom-up, and classroom anxieties interact over time using longitudinal or real-time tracking methods to understand how one anxiety type triggers or strengthens another. Additionally, future studies should examine students' attentional control, self-efficacy, and reading strategy use as potential mediators across fields. Intervention-based research comparing discipline-specific reading support would further clarify which instructional approaches reduce specific forms of anxiety most effectively. Next, the generalisation of the study can be further enhanced by employing probability sampling techniques and collecting data from multiple universities across regions in Malaysia. Finally, future studies may consider adopting longitudinal or experimental research designs to examine changes in reading anxiety over time and to better establish causal relationships among the variables under investigation, hence providing deeper insights into the development and impact of reading anxiety in language learning contexts.

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