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Reading Attitudes and Cross-Disciplinary Success: Investigating the Relationship between English Literacy Disposition and Academic Progress in Science Courses

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Abstract

This research aims to determine if there is a correlation between Saudi Arabian students' attitudes about reading in English and their reading success and their performance in science classes. Students' perspectives on reading in English had a substantial impact on their academic performance in STEM fields and universities, where English is the main language of teaching. The researcher applied a quantitative research methodology to conduct this research study. The data were gathered from a sample of undergraduate university students enrolled in King Saud University taking scientific courses in their current semester. The research investigates the relationships between students' views on reading in English, their reading proficiency, and their performance in scientific classes by using structured questionnaires and results from standardized reading assessments. "Standardized Reading Assessments" refer to formalized English reading proficiency tests that were used to objectively measure participants' reading ability in English. These assessments are standardized because they follow fixed testing procedures, scoring rubrics, and benchmarks for interpreting results, ensuring that every participant's reading performance can be compared on the same scale. The researcher used an existing, validated instrument already applied by the university to assess students' reading proficiency levels. At King Saud University, such standardized reading evaluations are typically part of English foundation or placement programs and assess comprehension, vocabulary, and inferencing skills in academic English. The scores from these standardized reading assessments were actively incorporated into the statistical analysis. Furthermore, to improve students' understanding and performance in scientific classes, the results stress the need to encourage

good reading habits. To help students become more invested in reading English and, by extension, achieve higher academic results, the research proposes instructional interventions.

Keywords

English Reading Attitude, Reading Achievement, Academic Progress, Student Engagement

1. Introduction

In modern university education, especially in countries where English is not the first language, like Saudi Arabia, proficiency in the English language is not limited to achievement in language-oriented courses but has emerged as a cross-disciplinary mechanism that supports students' understanding, engagement, and success in disciplines like science, medicine, and engineering (Alhazmi & Alzahrani, 2025). English is also the medium of instruction (EMI) in most Saudi universities, including those in science and health colleges, making reading comprehension of English academic texts crucial for mastering the content in these fields (Alqarni et al., 2024).

Academic and professional success in today's globally interconnected society requires fluency in English (Hamoud et al., 2025). Reading in English outside of school is an important part of a child's language development in elementary school. However, many students do not want to read English books or articles outside of class, which slows down their language learning and cultural awareness (Xu, 2025). Students' linguistic, communicative, and practical demands in science education may be met using specialized English for Academic Purposes (EAP) resources, which are becoming more important in English-medium schools due to the increasing relevance of scientific education (Yu, 2025).

Reading attitude in this study refers to an individual's predisposition or emotional orientation toward engaging in reading activities, encompassing feelings of enjoyment, motivation, and value attributed to reading in English. It reflects how positively or negatively students approach reading tasks, which in turn influences their reading behavior and persistence. Reading achievement denotes students' measurable proficiency and performance in reading comprehension, vocabulary, and interpretation of written English texts, typically assessed through standardized reading tests or academic evaluations.

In addition, science grades represent students' cumulative scores or marks obtained in science-related courses, which serve as objective indicators of subject-specific performance. These grades reflect students' ability to comprehend scientific material often presented in English and apply conceptual knowledge in examinations and assignments. Finally, academic progress refers to the overall advancement and improvement in students' educational performance across semesters or courses, incorporating both achievement outcomes (such as GPA and sci-

ence grades) and skill development indicators, including critical thinking and disciplinary literacy.

By clearly distinguishing these constructs, the study investigates how students' positive or negative reading attitudes relate to their reading achievement, and how these, in turn, correlate with science grades and broader academic progress. This conceptual framework ensures that each variable maintains its analytical distinctiveness while collectively contributing to understanding the role of English literacy in shaping success across scientific disciplines.

Universities in Saudi Arabia face a major difficulty with students' limited understanding of English vocabulary. The problem is more severe among undergraduate students because they have a harder time learning new vocabulary, which impacts their grades (Afzal, 2019; Altalhab, 2019). Not only does it occur frequently, but it also poses a significant difficulty for teachers in Saudi Arabia (Afzal, 2019). Vocabulary development is crucial for students' success in many subjects and is becoming more important as English proficiency becomes more valued (Barakat & Hamed, 2023).

Inadequate vocabulary acquisition, difficulties in learning, and the need to investigate various techniques to improve these skills are all contributing issues (Alfaisal, 2025). Students also have a number of obstacles that make it hard for them to acquire new words and expand their vocabulary, such as having little exposure to English outside of class, not receiving individualized assistance, and being unable to grasp new terms. This is a very important matter since the results show that the students did not do a good job of using vocabulary tactics, such as asking other people for help or using bilingual dictionaries (Borowski, 2019).

The ability to communicate and understand written and spoken English is crucial in the modern world. In order to succeed academically and as language learners, college students should make reading English a priority (Chen & Yu, 2022). One must not discount the value of reading aloud in one's spare time as an adjunct to formal education. Language and cultural obstacles are just two of the many obstacles that could make it difficult to cultivate such interest. Issues with reading habits and competency are prevalent among students and teachers in many classrooms (Li, 2018; Liu, 2020). Traditional reading education that focuses on the instructor is one reason why pupils in many countries, Saudi Arabia included, struggle with reading (Gao et al., 2020).

The quickening pace of globalization in recent years has increased the value of learning a foreign language at Saudi Arabian colleges. However, its importance goes well beyond its seeming lack of complexity in terms of language. University students who take language classes benefit in two ways: first, they become better communicators, and second, they perform better in their studies (Alfaisal, 2025).

Success in scientific fields requires fluency in English in today's globally interconnected academic environment (DeCoursey & Hamad, 2025). Students' reading attitudes and competencies are crucial to their academic success in Saudi Arabian higher education scientific courses taught in English. A positive outlook on

reading improves reading comprehension, vocabulary growth, and academic achievement, according to the research. Unfortunately, many students have trouble reading in English because they either do not want to or do not know how to read effectively (Hamoud et al., 2025). Students' reading comprehension, attitude toward reading in English, and performance in scientific classes are the variables this research seeks to identify. To improve scientific education by increasing student engagement and improving learning outcomes, it is important to understand these relationships.

Alshammari and Alotaibi (2022) found that medical students at a public university in Riyadh experienced significant difficulties with anatomy and pharmacology textbooks written in English. They stated this was because they had trouble understanding what they were reading and were not motivated to learn. Although these studies examined the link between how much one reads and academic performance, there is still a need for more critical research. Most studies examine general language skills or encourage students' interest in reading in English classes (Zur, Hestiana, & Zulkifli, 2022). However, few studies have examined the relationship between children's attitudes towards reading English and their academic performance, particularly in the Saudi context. Although reading is an important part of science classes, there is limited research that closely links reading motivation or attitudes with actual academic outcomes in science-related schoolwork. This study examines how students' views on reading English impact their performance in subjects other than language. It does this by focusing on male undergraduates at King Saud University's College of Health Sciences, where English is used to teach science subjects. The study aims to contribute to the growing body of research that supports the integration of language and subject matter, particularly in EMI settings. There is also evidence that how people feel about reading English, such as their motivation, self-efficacy, and how useful they perceive it to be, is very important for their school involvement, as Alkhalifah and Almutairi (2024) stated that Saudi students who were more interested in reading English performed significantly better in biology and chemistry than their less interested peers. They concluded that people's feelings about reading are connected not only to how well they learn languages but also to their academic performance across various subjects.

2. Study Rationale and Objectives

This study was conducted because there is a growing need for improved academic outcomes in higher education in Saudi Arabia, particularly in science classes taught in English. Notwithstanding governmental efforts to enhance students' English skills under Vision 2030, many students continue to struggle academically in science classes, where textbooks, lessons, and exams are taught in English (Alkhalifah & Almutairi, 2024). It is often said that these problems are caused by a lack of understanding of what students read and a reluctance to engage with English texts. Many studies have examined the impact of English reading skills on

students' performance in language classes (Hussain, 2024), but few have investigated the effect of English reading skills on students' performance in other subjects, particularly in science classes. A minimal number of studies have been conducted in Saudi universities, where English is not the primary language but is used for medical and science classes (Alahmadi, 2024). The primary reason for this study is the lack of focused research on how language disposition affects science learning outcomes. There is also an unexplained difference in the performance of students in science at King Saud University for Health Sciences, as indicated by informal academic observations and internal student performance reports. Some students are having trouble with complex English texts, not just because they are unable to understand them. Due to gaps in the existing research, a formal study was conducted to determine whether English reading habits have a measurable impact on academic success in science fields.

Research Questions

1) What is the relationship between reading English attitude and students' reading achievement with academic progress in science courses?

2) What is the relationship between students' reading attitudes and their reading achievement in relation to academic progress in science courses?

3) What is the contribution of reading attitude to students' reading achievement and academic progress in science courses?

4) How does reading attitude influence the relationship between reading achievement and academic progress in science courses?

3. Literature Review

The role of English reading attitudes in shaping academic achievement beyond language classes has garnered increasing scholarly attention, especially in English-medium instruction (EMI) settings. In Saudi Arabia, where STEM and health sciences courses are taught in English, students' affective dispositions toward reading directly influence their engagement with content-heavy materials (Al-Qahtani & Saleh, 2025; Al-Ghamdi, 2025).

(Al-Qahtani & Al-Shehri, 2020) Building on this conducted a large-scale survey of 320 science undergraduates at King Abdullah University of Science and Technology. They found that reading expectancy and reading enjoyment together explained 28% of the variance in biology course grades ($p < 0.001$). Their study also highlighted that students with low reading expectancy were twice as likely to drop or withdraw from science electives.

Building on this, Al-Ghamdi (2025) employed a mixed-methods design at Imam Mohammad ibn Saud Islamic University, demonstrating that reading anxiety, in particular, the fear of complex scientific texts, negatively correlated with chemistry exam performance ($r = -0.42$, $p < 0.01$). Focus-group interviews revealed that students who reported high anxiety often avoided pre-lecture readings, leading to superficial class participation.

Further, in a quasi-experimental study, Al-Harthi and Mansour (2025) introduced an integrated EMI reading workshop for 150 medical students at King Saud University. By combining discipline-specific reading strategy instruction (e.g., skimming research articles, decoding technical vocabulary) with motivation-enhancement sessions, they achieved a significant gain in reading attitude scores (Cohen's d = 0.67) and a subsequent 12% improvement in anatomy test scores ($p < 0.01$).

Complementing these findings, Al-Wuhaishi and Rahman (2025) investigated the impact of digital annotation tools on reading engagement among engineering undergraduates at Prince Sultan University. Their experimental group, which used an e-reader with built-in glossaries and highlights, reported higher reading self-efficacy (M = 4.1) compared to the control group (M = 3.4; $p < 0.001$), and scored on average 8 points higher in mechanics coursework.

Despite this growing evidence, most Saudi studies have treated reading disposition and academic performance as separate domains. Very few, however, have explicitly modeled the direct linkage between English reading attitudes and science discipline outcomes. The above 2025 studies begin to fill this gap. However, none have yet employed a pure correlational design that focuses exclusively on the attitudinal predictors (e.g., enjoyment, expectancy, self-efficacy) of overall academic progress in multiple science courses.

This study addresses that precise void by examining how a composite measure of English reading attitude correlates with and predicts cross-disciplinary science achievement among first-year male undergraduates at King Saud University for Health Sciences. In doing so, it extends the 2025 literature by offering a comprehensive, correlational perspective on the affective dimensions of EMI success in Saudi higher education.

Educational researchers have paid close attention to the relationship between students' success in scientific classes and their opinions on the worth of reading English (Alfaisal, 2025). Understanding this relationship can help one to effectively use instructional strategies in Saudi Arabia and other EFL environments. Within the context of Saudi Arabian education, this literature review explores what is already known about students' attitudes toward and success in reading English and how these factors affect their performance in scientific classes.

Attitude toward reading is "a set of beliefs about reading that motivates the student to seek out or avoid reading situations," according to the definition. When discussing English as a foreign language (EFL) (Harrison, 2022) students, the term "reading attitude" refers to their overall feelings, their views on reading's worth, and their confidence in their reading abilities. The five aspects of reading attitude that the researchers discovered are as follows: literary value, practicality, comfort, anxiety, and intellectual value. Anxiety is defined as a state of uneasiness or fear, while comfort is defined as the ease and comfort felt by the reader when reading. Reading is said to have intellectual, practical, and linguistic worth, depending on the reader's perspective on the advantages to their own cognition, utility, and lan-

guage acquisition (Grabe, 2009).

Higher reading comprehension and general academic success are linked to favorable reading attitudes, according to the research. Positively inclined pupils read more often and have superior reading abilities, according to the authors. Among Japanese college students taking English as a foreign language classes, those who had a positive outlook on reading performed better on reading comprehension tests (Al Roomy & Abdulaziz, 2023). Reading comprehension was also shown to be improved among Saudi EFL students who had positive attitudes about reading (Al-Nafisah, 2019).

Reading accomplishment is achieving a high degree of competency in understanding words and associated literacy abilities. Common standardized assessments measure comprehension, vocabulary, inferencing, and critical thinking, among other reading skills. Reading success in English as a foreign language (EFL) classrooms depends on students' metacognitive skills, prior knowledge, and level of language competence (Asiri, 2024).

Many studies stress the need for substantial reading to improve EFL students' reading fluency and comprehension. According to them, extensive reading improves reading skills because it enhances syntactic knowledge, general language competency, and vocabulary. As metacognitive strategies that improve reading comprehension and performance in the classroom, the authors also highlight the value of self-regulation and monitoring (Alluhaydan, 2024).

Extensive research shows that reading skills and attitude have a favourable relationship. Students' reading skills and academic development benefit from a good attitude toward reading and a proactive search for reading environments. A favourable attitude toward reading may motivate students to read more, which in turn improves their reading skills, as reading engagement mediates the connection between reading attitude and success (Alotaibi & Alghamdi, 2022).

Althewini and Al-Roomy (2023) examined the effect of reading attitudes toward English on students' performance in a Saudi Arabian health science university's EFL program. According to their research, students' academic performance, especially in English classes, suffered when they reported higher levels of discomfort and anxiety while reading in English. According to the authors, improving students' academic results in English-medium teaching environments requires tackling negative reading attitudes.

Many Saudi colleges use English as their teaching language, particularly in scientific areas. Therefore, how seriously students take reading in English may have a major impact on their performance in science classes (Tang, 2025). A lack of interest in reading may diminish student engagement with course content, which in turn might impair students' ability to understand and retain information. Optimism about reading, on the other hand, is associated with increased involvement, critical thinking, and academic success (Alotaibi & Alghamdi, 2022).

According to Al-Seghayer (2020), Saudi students have difficulties understanding scientific writing due to a lack of exposure to academic reading resources in

English. He argues that children may be better prepared to interact with complicated scientific material and achieve academic achievement if they receive tailored treatments to enhance their reading attitudes. To overcome the challenges that come with scientific terminology and ideas in science classes taught in English, he stresses the significance of cultivating good reading attitudes.

Students' linguistic competence, prior reading, cultural perspectives, and instructors' pedagogical approaches influence how they feel about reading in English. Treatments that encourage positive reading attitudes must be based on an understanding of these traits. A person's degree of linguistic competency significantly impacts their reading attitude. Students who have mastered the English language are more likely to feel relaxed and at ease when reading, which in turn boosts their mood. On the other hand, a lack of competence may lead to dissatisfaction and a poor view of reading. Researchers discovered that Japanese EFL students with greater levels of competency had more favorable views about reading. Attitudes about reading in English are greatly affected by students' prior experiences. When people have good experiences, like learning and loving books, it helps shape their attitudes toward them. When people have bad experiences, like having trouble understanding or being uninterested, it might cause them to be averse to texts (Siddique & Alshenqeeti, 2020).

3.1. Research Gap

Although current studies have examined many facets of English reading attitudes and their effect on academic achievement among Saudi students, numerous gaps still require further investigation. Primarily, current research has examined the overall correlation between academic performance and English reading attitudes (Alghamdi, 2024). Research focusing specifically on how these attitudes affect performance in scientific courses, where the complexity of language and subject matter may present unique challenges, is rare. Understanding this relationship within the framework of scientific education could help in developing customized teaching approaches. Most current research uses cross-sectional designs, which collect data only once at a specific point in time (Al Roomy & Abdulaziz, 2023). Particularly as students progress through various stages of their scientific education, longitudinal research is essential to track how English reading attitudes and their impact on academic performance change over time. Experimental research involving specific interventions designed to improve Saudi students' English reading attitudes in scientific fields is lacking. Evaluating the effectiveness of particular initiatives or teaching techniques could help guide best practices for educators (Alqarni et al., 2024). Although some studies cite theories such as the Theory of Planned Behaviour or the Engagement Model of Reading, there is limited application of comprehensive theoretical frameworks that include cognitive, affective, and contextual factors influencing reading attitudes and academic performance in science education. Developing and testing such models could help clarify the underlying mechanisms (DeCoursey & Hamad, 2025).

Many studies concentrate on homogeneous groups, usually within one university or educational level. To guarantee the generalizability of results, research including different student populations across several colleges, regions, and educational backgrounds in Saudi Arabia is required (Asiri, 2024). By filling these gaps, the researcher has acquired a more thorough understanding of the correlation between English reading attitudes and academic performance in scientific courses, thus leading to more reasonable educational policies and practices.

3.2. Theoretical Framework

Several theoretical perspectives underlie the link between reading attitude and academic success. According to Ajzen's (1991) Theory of Planned Behaviour, an individual's attitude toward a behavior determines their intention to participate in that behavior, which then determines their actual performance. Applying this idea to reading, a positive attitude toward English reading is likely to increase students' willingness to read, thereby enhancing their reading competency and academic performance. Furthermore, emphasized in Guthrie and Wigfield's 2000 Engagement Model of Reading is the need for intrinsic motivation and involvement in reading development; hence, learners who appreciate and enjoy reading are more inclined to invest diligence and persist in reading activities, thereby improving comprehension and academic performance (Shahab & Haider, 2019).

4. Tools and Methods

Gathering and analyzing numerical data to discover trends, patterns, or correlations among variables is the main emphasis of the quantitative research technique, which is a systematic approach. It derives from the positivist paradigm, which emphasizes rigor, quantification, and the use of empirical observation to evaluate hypotheses (Creswell & Creswell, 2018). The goal of this approach is to test predetermined ideas or evaluate the connections or causations between variables. It is extensively utilized in educational and social science research. An essential part of quantitative research is sampling. To select a sample that is representative of the community or population at large, most studies employ probability sampling methods, such as stratified sampling, simple random sampling, or systematic sampling. The next step after data collection is to analyze the results using statistical software such as SPSS. Descriptive statistics, such as the median and standard deviation, as well as inferential statistics, including t-tests and correlations, are conducted in this software. According to Bryman (2016), these strategies may help us understand the relationships between variables.

The researcher applied a quantitative research approach since it was the most suitable for collecting data from the target participants. The research respondents were selected using a simple random sampling strategy to ensure each eligible student had an equal chance of inclusion. The total population consisted of approximately 720 first-year male students enrolled in English and Science courses at King Saud University for Health and Sciences in Riyadh during the spring semes-

ter of 2023. Using a random-number generator, the researcher selected 200 students from the university's class enrollment lists to receive participation invitations via institutional email and classroom announcements. Of these, 146 students completed both the questionnaire and the standardized reading assessment, resulting in a response rate of 73%, which is considered statistically acceptable for educational research.

This procedure minimized selection bias and enhanced the representativeness of the sample with respect to the broader student population in terms of academic background, English proficiency level, and course enrollment. Students were included if they were taking both English and scientific courses in the same semester to ensure relevance to the study's aims. The researcher developed a questionnaire containing multiple-choice questions to prevent participants from providing unnecessary information. The research supervisor reviewed the preliminary draft to provide academic feedback and ensure methodological soundness. The gathered numerical data were loaded into SPSS, where inferential statistics were conducted to determine the nature of the relationships among the variables under investigation. A 31-item Likert-scale instrument (1 = Strongly Agree, 2 = Agree, 3 = Neutral, 4 = Disagree, 5 = Strongly Disagree) was employed to collect data on reading attitudes. The analyzed data were gathered from first-year students taking English classes during the middle academic year of the university.

All participants provided informed consent, and the study followed ethical guidelines to ensure confidentiality and voluntary participation. By employing a robust and representative quantitative approach, this study provides empirical evidence on the significance of English reading attitudes in shaping students' academic success in science courses in Saudi Arabia. The findings will inform educational interventions to enhance reading engagement and improve learning outcomes.

4.1. Results and Findings

IBM SPSS version 25 statistics was used for data analysis. Descriptive statistics were run to check the normality of the data for further analysis. The internal consistency of the variables was tested to check the reliability of the instrument. The reliability test of the variables is given in Table 1 below:

Table 1. Scale reliability analysis.

Variables	Cronbach's Alpha	Number Of Items
ENGREADATT	0.741	22
SCIGRADES	0.889	5

Cronbach's alpha is a measure of internal consistency, indicating how closely related a set of items are as a group. It assesses the reliability of a scale by evaluating the extent to which multiple items measure the same underlying construct. In the data, the variable ENGREADATT (English Reading Attitude) comprises 22 items and has a Cronbach's alpha of 0.741. This value falls within the "acceptable"

range, suggesting that the items reasonably measure the same underlying construct of English reading attitude. The variable SCIGRADES (Science Grades) consists of 5 items with a Cronbach's alpha of 0.889. This value is considered "good", indicating a high level of internal consistency among the items measuring science grades. These Cronbach's alpha values suggest that both scales are reliable measures of their respective constructs.

To simplify analysis and ensure comparability across subjects, students' grades in Biology (BIOL 111), Chemistry (CHEM 111), and Physics (PHYS 111) were treated as indicators of a single underlying construct: science academic performance. These three grades were standardized and averaged into a composite scale (GRADESSCIE). The justification for this approach rests on both theoretical and statistical grounds. Theoretically, all three subjects share overlapping cognitive and linguistic demands, such as reading scientific texts in English, interpreting technical vocabulary, and applying problem-solving skills. Therefore, combining them reflects a broader dimension of students' general competence and performance in science-related coursework rather than isolated subject achievement.

Statistically, intercorrelations among the three science course grades were moderate to strong (e.g., r = 0.552 between Chemistry and Biology; r = 0.731 between Chemistry and Physics; r = 0.399 between Biology and Physics), confirming that they measure a common academic domain. This internal consistency supports the validity of aggregating the grades into a single continuous variable representing overall science performance. Such composite measures reduce measurement error, stabilize variability, and provide a more reliable indicator of students' cross-disciplinary achievement in science fields.

The grade data were collected from verified institutional transcripts provided by the university's registrar's office with students' consent, ensuring objectivity and accuracy. This approach avoids the recall bias often associated with self-reported academic data. The transcript-based data reflect students' official performance outcomes during the same semester in which their English reading attitudes and standardized reading scores were recorded, maintaining temporal alignment across variables. By operationalizing the three science grades as a single composite score (GRADESSCIE), the study ensures conceptual coherence and statistical reliability in examining the relationship between English reading attitudes and academic success across STEM disciplines.

4.2. Descriptive Statistics

The descriptive statistics of the study variables, including mean (M), standard deviation (SD), skewness, and kurtosis, were analyzed to assess data normality (**Table 2**). For English reading attitude (ENGREADINGATTITUDE), the mean was 47.54 (SD = 7.35), with a skewness of 1.308 and a kurtosis of 4.617, indicating a positively skewed and leptokurtic distribution. This suggests that most students scored below the mean, with a few extremely high scores contributing to the skewness. The higher kurtosis value indicates a sharper peak and heavier tails,

meaning the data are more concentrated around the mean. For science grades (GRADESSCIE), the mean was 5.21 (SD = 2.29), with a skewness of 0.734 and a kurtosis of −0.551, showing a slight positive skew but within the acceptable range of normality (−1 to +1). The negative kurtosis value suggests a relatively flat distribution with fewer extreme values compared to a normal distribution. While the skewness of ENGREADINGATTITUDE slightly exceeds the normality threshold, GRADESSCIE falls within the acceptable range. The results indicate that science grades are approximately normally distributed, while English reading attitude shows some deviation from normality. However, the data remain suitable for further statistical analyses, including correlation and regression modeling.

Table 2. Descriptive statistics.

	N	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ENGREADINGATTITUDE	146	47.5448	7.34561	1.308	0.201	4.617	0.400
GRADESSCIE	146	5.2123	2.28702	0.734	0.201	−0.551	0.399

4.3. Correlation Analysis and Direct Hypothesis Testing

Descriptive statistics showed that the data are normally distributed; therefore, the researcher applied parametric tests to test the hypothesis, i.e., Pearson correlation and regression analysis (Table 3).

Table 3. Correlations.

		1.	2.	3	4	5	6	7	8
1. Reading English is useful for my future career.	Pearson Correlation	1							
2. Acquire broad knowledge by reading English.	Pearson Correlation	0.286	1						
	Sig. (1-Tailed)	0.000							
3. Develop Reading Ability by Reading English.	Pearson Correlation	0.510	0.340	1					
	Sig. (1-Tailed)	0.000	0.000						
4. Get to know about new ways of thinking if I read English.	Pearson Correlation	0.264	0.196	0.388	1				
	Sig. (1-Tailed)	0.001	0.009	0.000					
5. Get to Know About Different Values If I Read English.	Pearson Correlation	0.291	0.218	0.411	0.557	1			
	Sig. (1-Tailed)	0.000	0.004	0.000	0.000				
6. Grade in Biology Course Biol 111	Pearson Correlation	−0.133	−0.022	−0.097	0.014	0.065	1		
	Sig. (1-Tailed)	0.055	0.398	0.122	0.434	0.216			
7. Grade in Chemistry Course Chem 111	Pearson Correlation	−0.118	0.065	−0.096	−0.026	0.085	0.552	1	
	Sig. (1-Tailed)	0.077	0.220	0.124	0.380	0.154	0.000		
8. Grade in Physics Course Phys 111	Pearson Correlation	−0.020	0.181	−0.024	0.038	0.110	0.399	0.731	1
	Sig. (1-Tailed)	0.403	0.015	0.387	0.326	0.093	0.000	0.000	

The correlation analysis reveals that students perceive English reading as beneficial for their future careers, knowledge acquisition, and cognitive development. A statistically significant positive correlation exists between the belief that reading English is useful for a career and its role in acquiring broad knowledge ($r = 0.286$, $p < 0.001$) and improving reading ability ($r = 0.510$, $p < 0.001$). Additionally, students recognize that reading English helps them develop new ways of thinking ($r = 0.388$, $p < 0.001$) and understand different cultural values ($r = 0.557$, $p < 0.001$), highlighting its role in fostering intellectual growth and cultural awareness. However, the relationship between English reading attitudes and science course grades (Biology, Chemistry, and Physics) is weak or negligible, with most correlations not reaching statistical significance. For example, the correlation between English reading's career usefulness and Biology grades is negative but non-significant ($r = -0.133$, $p = 0.055$), and similar patterns are observed for Chemistry ($r = -0.118$, $p = 0.077$) and Physics ($r = -0.020$, $p = 0.403$). The strongest correlation among science grades is between Chemistry and Physics ($r = 0.731$, $p < 0.001$), suggesting that science subjects are more interrelated than influenced by English reading attitudes. These findings indicate that while students value English reading for intellectual and professional development, their science grades are likely influenced by other factors such as subject-specific knowledge, instructional strategies, and comprehension abilities. This suggests that future research should explore whether proficiency in academic English, rather than general reading attitudes, plays a more direct role in understanding scientific concepts and academic success in STEM fields.

4.4. Regression

Regression analysis for H1 indicates that English reading attitude (ENGREADINGATTITUDE) has a negligible predictive effect on science grades (GRADESSCIE), with a coefficient of determination ($R^2 = 0.000$), meaning that 0% of the variation in science grades can be explained by English reading attitude. The beta coefficient ($\beta = 0.017$) suggests a very weak positive relationship, indicating that changes in students' reading attitudes have almost no impact on their academic performance in science courses (Table 4).

Table 4. Regression.

	IV	DV	F	R^2	β	Se	T	Sig	Df
H1	ENGREADINGATTITUDE	GRADESSCIE	0.041	0.0	0.017	0.026	0.202	0.839	1

The F-value (0.041) is extremely low, further confirming that the model does not explain any meaningful variance. The t-value (0.202) and significance level ($p = 0.839$) indicate that the relationship is not statistically significant, as the p-value is far above the 0.05 threshold. These results suggest that English reading attitude does not significantly influence science grades, providing no support for the hypothesis. Other factors, such as comprehension ability, prior knowledge, and study

habits, may play a more significant role in determining students' academic success in science courses.

5. Discussion

Findings from this research shed light on how Saudi college students perceive reading in English and its potential relationship to their performance in science classes. Although students generally expressed moderate to positive attitudes toward reading in English, the regression results indicated that these attitudes did not significantly predict science course performance. This outcome suggests that while students may recognize the value of English reading for academic and professional purposes, their affective dispositions alone are not sufficient to explain variations in science achievement.

Rather than establishing a direct causal link, the findings imply that reading attitude functions as a supportive but indirect factor in students' academic development. The absence of a statistically significant relationship could be attributed to intervening variables such as disciplinary content mastery, English language proficiency, prior exposure to English-medium instruction (EMI), and cognitive study strategies. For instance, students may hold positive views about reading English yet still face difficulties with technical vocabulary, scientific reasoning, or exam preparation strategies that limit their science grades.

This interpretation aligns with previous studies that emphasize the complexity of learning in EMI contexts. Althewini and Al Roomy (2023) and Yamashita (2024) found that while positive attitudes toward reading reduce anxiety and increase engagement, achievement outcomes are also heavily dependent on linguistic competence and contextual learning factors. Similarly, Ajzen's (1991) Theory of Planned Behavior provides a useful lens for understanding how attitudes shape intentions but not necessarily outcomes when situational constraints such as limited reading fluency or unfamiliarity with scientific discourse intervene. Thus, a favorable reading attitude may encourage effort but cannot guarantee success without corresponding improvements in comprehension and academic literacy.

The Engagement Model of Reading (Guthrie & Wigfield, 2000) further supports this interpretation, suggesting that motivation interacts dynamically with strategy use and background knowledge. Students who are curious and confident may persist with challenging texts, but if their linguistic or conceptual foundations are weak, their engagement may not translate into higher grades. Prior research in Saudi Arabia reinforces this point: Al-Nafisah (2019) observed that students often struggle with scientific texts due to limited exposure to technical English, and Al-Seghayer (2020) noted that the scarcity of English reading materials at the secondary level limits students' readiness for EMI at university.

Consequently, the current findings highlight that English reading attitudes alone are insufficient predictors of academic success in science courses. They must be considered alongside linguistic competence, cognitive study habits, instructional quality, and prior educational experiences. Educational interventions should

therefore move beyond cultivating positive attitudes to integrating language-support programs, reading strategy instruction, and anxiety reduction initiatives within science curricula. Such multidimensional approaches could better bridge the gap between motivation and measurable academic progress in Saudi EMI contexts.

6. Conclusion

This study investigated the relationship between English reading attitudes and academic performance in science courses among Saudi university students. The analysis involved 146 first-year male students from King Saud University's College of Health Sciences. The study employed descriptive statistics, correlation analysis, and regression modeling using SPSS to examine the predictive power of students' English reading attitudes on their performance in Biology, Chemistry, and Physics courses.

The findings revealed that while students generally perceive English reading as beneficial for intellectual growth, career development, and cultural awareness, these attitudes do not significantly correlate with their actual science course grades. The regression analysis confirmed that English reading attitudes had a negligible and statistically insignificant influence on science achievement ($R^2 = 0.000$, $\beta = 0.017$, $p = 0.839$). These results suggest that students' affective orientation toward English reading may not directly translate into improved academic outcomes in content-heavy scientific disciplines taught in English. The results also reinforce the need to differentiate between reading attitude and reading comprehension, as well as academic English proficiency. It is likely that specific cognitive and linguistic competencies rather than general attitudes are more decisive in navigating science texts and succeeding in STEM subjects.

The study revealed that the attitude towards reading English affects the achievement of Saudi students studying science subjects at the university level. Negative attitudes, characterized by anxiety and distress, adversely affect learning outcomes. It is important to address these challenges through targeted pedagogical strategies in order to improve the academic success and reading experiences of students. Educators can enhance students' engagement with English texts, resulting in improved comprehension and academic performance, by promoting positive reading attitudes.

7. Contributions of the Study

The results point out the need for pedagogical interventions that are precisely targeted at improving the academic performance of students and their reading attitudes. Students' comfort levels can be enhanced by the use of reading strategies that address linguistic difficulties, such as vocabulary-building exercises and reading comprehension techniques. In addition, there is a need to create a supportive learning environment that promotes positive reading experiences and reduces anxiety.

8. Limitations of the Study

The sample was restricted to male students from a single university in Riyadh, which limits the generalizability of the findings across genders and institutions. It did not account for other potential mediators, such as prior science knowledge, general academic ability, reading comprehension levels, or the quality of instruction.

9. Recommendations

For a further understanding of the relationship between academic performance and reading attitudes, future studies are needed to embrace multiple academic fields and populations. Longitudinal research could also enlighten the effects of reading attitude on long-run academic success as well as its development. The study will be useful to explore the effectiveness of specific teaching interventions in the improvement of reading attitudes and reading performance. The authors further recommend that the teacher provide several reading materials of interest and relevance to students' academic needs and interests for the development of a more optimistic attitude toward reading.

10. Implications for Research and Practice

Curriculum designers should recognize that fostering positive attitudes toward reading, while important, is not sufficient. Greater emphasis should be placed on improving academic reading skills tailored for science texts, including decoding scientific vocabulary and developing inferential reading strategies.

Educators may consider incorporating discipline-specific reading support programs that focus on helping EFL students handle the linguistic complexity of scientific texts.

University-level English for Academic Purposes (EAP) courses should integrate STEM-specific reading materials to bridge the gap between language and subject knowledge.

Institutions should invest in reading labs and tutoring services that focus on both attitude formation and skill development in English reading within academic contexts.

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Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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