The relationships between reading mindsets, reading engagement, and reading comprehension performance in the Saudi EFL context

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ABSTRACT
This study determines the relationship between reading mindsets and reading comprehension performance with the use of reading engagement as a mediating variable. It drew on Dweck's (1999) mindset theory and employed a correlational research design to collect data from 567 EFL undergraduate students majoring in English in three public universities in Saudi Arabia. The data collection was conducted by distributing two questionnaires and administering a reading comprehension test. The collected data were analyzed using a two-phase structural equation modeling approach (i.e., measurement and structural models). The results indicated that there was a significant correlation between a growth reading mindset and reading engagement. Nevertheless, a significant yet negative correlation was revealed between a fixed reading mindset and reading engagement. Moreover, there was a significant and positive correlation between reading engagement and reading comprehension performance. Lastly, the findings showed that reading engagement served as a mediating variable in determining the correlation between reading mindsets and reading comprehension performance. The relevance of the current study stems from the dearth of research on reading mindsets. Also, previous studies have not focused on exploring the correlation between mindsets and performance in the EFL context. Therefore, the current study is expected to benefit EFL readers, instructors, and policymakers.

Keywords: Fixed mindset; growth mindset; reading comprehension performance; reading engagement; reading mindsets

INTRODUCTION
Effective reading comprehension skills play a substantial role in general academic achievement for English as a foreign language (EFL) learners (Bakken & Lund, 2018). Shehzad et al. (2020) consider "English reading comprehension as a hot topic" in EFL setting (p. 446). English is a lingua franca; therefore, EFL learners need to have effective reading skills in order to keep themselves abreast of the recent knowledge for personal as well as professional development (Rao, 2019). English is taught as a foreign language in many countries including Saudi Arabia. Saudi Arabia has recently launched "Vision 2030" which focuses on

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globalization, and bringing foreign investments as well as global knowledge to Saudi Arabia (Al-Mwzaiji & Muhammad, 2023). Since most of the global knowledge is available in English language, it seems indispensable for Saudi EFL learners to be proficient in English reading comprehension skill to keep up with the rest of the world regarding scientific and academic knowledge.

However, despite its importance, it has remained a challenge for EFL learners. Studies conducted in several EFL countries clearly depict that students face difficulties in reading skills including Sudan (Alhameem, 2019), Malaysia (Al-Jarrah & Ismail, 2018), and Indonesia (Kasim & Raisha, 2017). In Saudi Arabia, several studies have also provided evidence that Saudi EFL learners face hurdles in comprehending the text, which affects their overall academic achievement (Alkhaleefah, 2017; Shehzad et al., 2020). Reading scores of Saudi EFL students, as reflected in the International English Language Testing System (IELTS) and the Test of English as a Foreign Language (TOEFL), are largely unsatisfactory. According to the latest report from IELTS Partners (2019), Saudi students' reading score in the academic category is the third lowest in the world. More appallingly, their reading score is the lowest in the world in the general reading category. Likewise, the latest report from TOEFL (2019) also depicts that Saudi students' score in reading skill is the lowest (i.e., 16) as compared to the other skills, i.e., listening (i.e., 20), speaking (i.e., 21), and writing (i.e., 18). Poor reading skills negatively influence the learners' educational achievement, resulting in their demoralization and annoyance (Zemni and Alrefaee, 2020). It is evident in the literature that poor reading comprehension is attributed to a number of factors including lack of reading engagement (Barber & Klauda, 2020; Lee et al., 2021). Reading engagement denotes participation in different activities regarding reading in which a reader employs cognitively focused activities (e.g., usage of cognitive strategies) and activities related to motivation, i.e., eagerness, interest, and inquisitiveness (Guthrie et al., 2007). Regrettably, anecdotal evidence from language instructors as well as findings of the previous literature revealed that adolescents show reluctance towards reading and hence are susceptible to disengagement from educational texts (Taboada et al., 2013). Nasrollahi (2014) further explained that reading is considered a difficult activity since it involves complicated processes that cause hurdles for EFL students in comprehending the text successfully. Although different learners react differently to such a learning difficulty, it remains a common phenomenon among them (Khajavy et al., 2021).

The notion of how learners face difficulties in language learning has a strong relationship with their language mindset. Dweck (1999) who first coined the term, 'mindset' explained that mindset has two dimensions, i.e., 'fixed mindset' and 'growth mindset'. Khajavy et al. (2021) further stated that people having a fixed language mindset consider failure to be indicative of the fact that they do not possess in them what it requires to become an effective language learner. However, when people who hold a growth language mindset meet a failure, they consider it as an opportunity and thus put more effort into learning a language (Khajavy et al., 2021). They confirmed that the concept of mindsets is well-researched in various domains including psychology and education; however, it needs attention in the L2 context. Therefore, it is recommended that future research should address the association between domain-specific mindsets (i.e., reading, listening, speaking, and writing mindsets) and domain-specific performances (i.e., reading, listening, speaking, and writing performances) (Lou & Noels, 2019). Testing the relationships between mindsets and several crucial aspects including strategies, motivation, self-belief, personality, proficiency, and actual aptitudes could also serve as an avenue for further research (Mercer & Ryan, 2010)

Thus, considering the recommendations of the previous studies and to fill a significant literature gap, we decided to conduct interdisciplinary research to determine the connection between reading mindsets (i.e., fixed and growth) and reading comprehension performance by employing reading engagement as a mediating variable. The study intends to achieve the following research objectives:

1. To determine the association between reading mindsets and reading engagement among Saudi EFL learners.
2. To determine the association between reading engagement and reading comprehension performance among Saudi EFL learners.
3. To determine the mediating role of reading engagement in determining the association between reading mindsets and reading comprehension performance among Saudi EFL learners.

Reading Comprehension Performance
Reading comprehension is a process in which a reader unlocks meaning from the written text (Sadeghi et al., 2012). Previously, several variables' relationship was examined with EFL reading performance including reading self-efficacy (Shehzad et al., 2019), reading anxiety (Song, 2018), metacognition (Sobhani & Babashamsi, 2017), grit (Mulcahy-Dunn et al., 2018), reading boredom (Shehzad et al., 2020), and reading motivation (Kanonire et al., 2020) among others. However, there is a dearth of research regarding the association between a relatively novel variable i.e., reading mindsets and reading comprehension performance in the EFL context. More particularly, according to the best of our knowledge, only two studies were conducted to determine the relationship between reading mindset and reading performance (Cho et al.,

2019; Petscher et al., 2017); however, they were not conducted in the EFL context. Moreover, both of the aforementioned studies were conducted on elementary school students. Therefore, the current study aims to investigate/ examine the relationship between reading mindsets and reading comprehension performance among Saudi EFL university learners. The next section explains the mediating variable of the current study, i.e., reading engagement.

Reading engagement

Academic engagement is considered a multifaceted concept that amalgamates cognitive, behavioral, and emotional traits of the learners (Fredricks et al., 2004). In agreement with this viewpoint, reading engagement has been conceptualized as the collaboration of behavioral, motivational, and cognitive processes during the comprehension of a text. Reading engagement is such a phenomenon in which both motivational and cognitive processes take place concurrently (Guthrie & Wigfield, 2000; Guthrie et al., 2007). Motivational processes include the reader's perseverance, self-belief, inquisitiveness, engagement, interest, and reading motivation. A review of the literature confirmed that motivational elements of reading engagement (e.g., Guthrie & Wigfield, 2000) and cognitive elements (Skinner et al., 2008) overlap with each other to a great extent. For the current study, the reading engagement index was adopted from Wigfield et al. (2008), which covers all three aspects of reading engagement (i.e., motivational, cognitive, and behavioral aspects). Lee et al. (2021) conducted a meta-analysis and concluded two important aspects. Firstly, the majority of the past studies considered only the behavioral aspect of reading engagement; thus, they recommended incorporating other aspects as well. The present study covers three aspects of reading engagement (i.e., motivational, cognitive, and behavioral aspects). Secondly, Lee et al. (2021) concluded that the majority of the studies regarding reading engagement were conducted on early adolescents (i.e., 11 to 14 years); thus, they recommended that future studies need to be conducted on other age groups, and present study focused on university students aged 18 to 20 years in Saudi.

Several studies have employed 'reading engagement' as a mediating variable in determining the association between different variables related to the reading domain (Hamedi et al., 2020; Taboada et al., 2013; Wen et al., 2016). Considering the review of the previous literature, it is hypothesized that reading engagement would mediate the association between reading mindsets and reading comprehension performance.

Language mindsets

Language mindsets are theorized as learners' views regarding learning a particular language. In line with Dweck's conceptualization of mindset, two distinct theories concerning language mindsets have been presented (Lou & Noels, 2017; Mercer & Ryan, 2010; Ryan & Mercer, 2012a). People who hold a fixed language mindset consider language learning as a static and inborn capability and to successfully learn a second language, one needs to have an essential inborn talent (Mercer & Ryan, 2010; Ryan & Mercer, 2012a). In contrast, people who hold a growth mindset regarding language learning consider the intelligence regarding language learning as flexible which can be enhanced via hard work and effort (Mercer & Ryan, 2010; Ryan & Mercer, 2012a). According to Khajavy et al. (2021), individuals who have a fixed language mindset view failure as proof that they lack the necessary skills to learn a language effectively. People with a growth language mindset, on the other hand, see failure as an opportunity and work harder to learn a language (Khajavy et al., 2021).

Considering the important role of language mindsets in language performance, researchers have started paying attention to it recently. A review of the recent studies indicate that language mindsets have been tested with various language-related variables including willingness to communicate, foreign language communication anxiety, and language proficiency, among others. According to a recent study, language mindset has a strong correlation with the academic success of EFL learners (Lou & Noels, 2020). Additionally, according to Papi et al. (2019), language learners' communication anxiety has a strong association with their learning mindsets. Haimovitz and Dweck's (2017) research showed that the language mindsets of the learners are reliant on their rapport with their language instructors. Ciaccio (2019) reported that growth mindsets among students strongly influence their self-efficacy. He made the case that students who have a growth mindset think that their poor performance on language tasks is the result of their lack of motivation. Additionally, he claimed that students with a growth mindset make a concerted effort to carry out their duties effectively. In another recent study, it has been argued that learners can reduce their anxiety about learning a foreign language by switching from fixed to growth mindsets (Marlow, 2021). They claimed that students who have fixed mindsets exhibit higher levels of anxiety when learning a foreign language and lower levels of proficiency. Additionally, Zarrinabadi et al. (2021a) discovered a strong relationship between learners' language mindset and their communicative proficiency and willingness to communicate. Likewise, Wang et al. (2021) found a direct as well as indirect effect of language mindset on L2 willingness to communicate among Chinese EFL college students. According to Zarrinabadi et al. (2021b), students who have a growth mindset are more likely to opt for efficient learning techniques for honing their skills. A qualitative research was

performed on Austrian and Japanese EFL learners' language mindsets (Mercer & Ryan, 2010). Their qualitative findings indicated mindsets could be applicable to sub-skills of a language, i.e., reading or speaking mindset. Moreover, the findings also designated that language mindsets might play a significant role in strategy usage, goal setting, and language accomplishment. Ryan and Mercer (2012a, 2012b) also confirmed that the concept of domain-specificity is applicable to both growth and fixed language mindsets. In addition, their findings informed that numerous factors including context and age affected language mindsets. The next section discusses about a specific domain of language mindsets, i.e., reading mindset.

Reading mindsets

Reading mindsets refer to individuals' beliefs about whether reading intelligence and skills are fixed (or inherent) or can be grown (malleable or incremental). Therefore, in the present study, reading mindset refers to Saudi undergraduate students' perceptions about whether their reading intelligence and skills are fixed or can be grown in English as a foreign language.

Few studies have been conducted regarding the mindset variable in the reading domain. For instance, Petscher et al. (2017) conducted a study on 4th-grade American students and found a positive and significant relationship between both global growth mindset and growth reading mindset with reading comprehension performance. Moreover, Cho et al. (2019) conducted a study on 4th and 5th-grade students to determine the relationship between a fixed mindset and reading performance by placing achievement goals and reading engagement as mediating variables. They found that both the achievement goals and reading engagement mediated the relationship between a fixed mindset and reading performance. The present study is different from the two studies on numerous grounds. Firstly, it involved both dimensions of reading mindsets (i.e., growth and fixed mindsets). Secondly, it focused on university students in an EFL context, whereas the aforementioned studies focused on 4th and 5th-grade school students in a context where English is used as a first language. Lastly, the conceptual framework of the present study is novel as it integrates both dimensions of reading mindsets (i.e., growth and fixed mindsets), reading engagement, and reading comprehension performance in a single framework.

METHOD

A correlational research design was employed in this study. Creswell (2012) affirmed that in correlational designs, relationships between variables are assessed by using statistical tools. Thus, in the current study, the relationship between reading mindsets (i.e., fixed and growth) and reading comprehension performance was determined by employing reading engagement as a mediating variable (refer to Figure 1).

Figure 1
Research Design
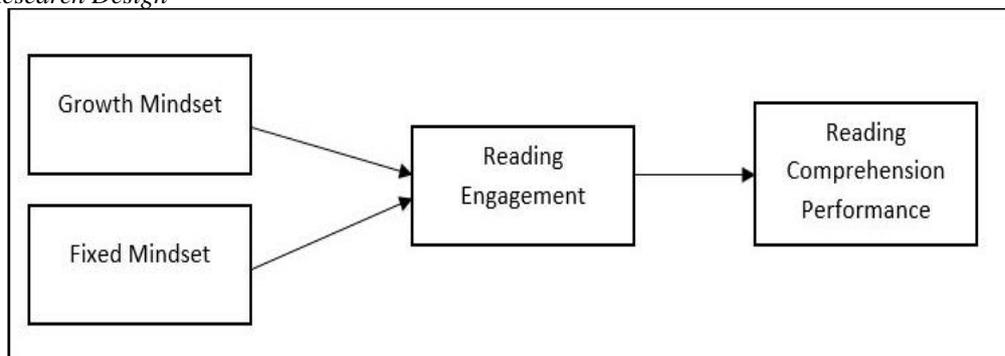
The following hypotheses were tested:

H_1: A fixed reading mindset will be negatively and significantly associated with reading engagement.

H_2: A growth reading mindset will be positively and significantly associated with reading engagement.

H_3: Reading engagement will be positively and significantly associated with reading comprehension performance.

H_4: Reading engagement will significantly mediate the association between fixed reading mindset and reading comprehension performance.

H_5: Reading engagement will significantly mediate the association between a growth reading mindset and reading comprehension performance.

In order to determine the relationships, two statistical tools were used (i.e., t-value and β-value). More particularly, the t-value was used to determine the strength of correlation between variables (i.e., significant or insignificant), and the β-value was used to determine the direction of correlation (i.e., positive or negative). The rationale for choosing a correlational design is its synchronicity with the research objectives of this study. There are several other advantages of using a correlational design, i.e., determining the statistical relationship between

variables, being inexpensive and less time-consuming as compared to experimental design, and gathering large data in a short amount of time (Jackson, 2012).

Participants

Data were collected from 567 students enrolled in the first semester of the BS-English program from three public sector Saudi universities. These students had a basic level of reading comprehension unlike other students in more advanced semesters whose reading skills have undergone a considerable change after learning the English language at the university level for a few years. The sampling technique used was proportionate stratified random sampling. The age of the student participants ranged from 18 to 20. The majority of the participants were male (i.e., 57%), whereas 43% of the participants were female. It is pertinent to mention that participants' permission to participate in the study was sought via email. They were sent a comprehensive email stating the objectives of the study, and they were assured that their identity would be kept anonymous. Moreover, this study required the participation of the EFL instructors to determine the reading engagement of their students by filling out the questionnaire named 'Reading Engagement Index.' Therefore, by employing a homogeneous purposeful sampling technique, 19 EFL instructors (i.e., 11 male and 8 female) were selected. Creswell (2012) affirms that homogeneous purposeful sampling is suitable to use in situations that require the selection of participants having similar characteristics. Thus, this study involved only EFL instructors who were teaching reading skills to the students who participated in this study.

Research instruments

Three instruments were used to gather the data including a reading mindset inventory, a reading engagement index, and a reading comprehension test. In order to test the reliability of the instruments in the current context, confirmatory factor analysis (CFA) was conducted (refer to the Results Section). Brown (2015) affirmed that CFA is one of the most frequent techniques employed to determine the reliability of the instruments.

Reading mindset inventory

For reading mindset, a language mindset inventory developed by Lou and Noels (2017) was adapted. This instrument consists of 18 statements. Nine statements are related to the growth reading mindset (e.g., you can always substantially change your reading intelligence) and the rest are related to the fixed reading mindset (e.g., to be honest, you can't really change your reading intelligence). As the instrument focuses on general language and not its subskills, the word 'reading' has been substituted with the word 'language.' In other instances, we

substituted the word 'language' with 'reading skills.' Sousa et al. (2017) affirmed that adaptation of items such as rephrasing the statements or including new statements is recommended in situations where the questionnaire's items do not align exactly with the concepts of the new study. Another reason for adapting the language mindset inventory presented by Lou and Noels (2017) is to make it more domain-specific as suggested by a recent study (Lou & Noels, 2019). Thus, we made it more particularized by adding the 'reading' component into it. Gallagher and Brown (2013) stated that confirmatory factor analysis (CFA) should be run whenever a researcher makes changes to an already established instrument in order to know whether the items of an instrument are measuring what they are supposed to measure. The adapted instrument's CFA showed that its construct validity is achieved and ready to use. More particularly, Table 2 shows that the factor loadings for both growth and fixed mindset are greater than 0.50 which makes it valid to use for the current study.

Reading engagement index

To assess the reading engagement of the participants, a well-established instrument called The Reading Engagement Index (REI) was adopted from Wigfield et al. (2008). The REI determines the degree of reading engagement of a student and also determines the reading motivation as perceived by his/her teacher. The index has been employed in past studies, which indicated that it is a highly reliable instrument with a Cronbach's alpha value ranging from .91 to .97 (Soriano-Ferrer & Morte-Soriano, 2017; Taboada et al., 2013; Wigfield et al., 2008). In this study, Cronbach's alpha value (i.e., .93) indicated that the REI's reliability is high. The REI consists of eight statements which were rated by the teacher participants (see Appendix A). The response format ranged from '1' (i.e., not true) to '4' (i.e., very true). The participants could obtain a minimum score of 8 and a maximum score of 32. The aggregate score was computed by adding the score of all eight statements, with item #3 reverse coded.

Reading comprehension test

In order to assess the respondents' reading comprehension performances, an IELTS (academic) reading comprehension test was administered. It was adopted from a book titled 'IELTS Reading Tests' written by McCarter and Ash (2001). The test is considered reliable as it has been employed in several recent studies in the Saudi EFL context (Shehzad, 2019; Shehzad et al., 2019). There are ten tests in the book, and each test consists of three reading passages. Four reading extracts were randomly selected from the book. Moreover, each passage consists of five Multiple Choice Questions (MCQs). The content of each extract is different. For example, the first extract is related to humans' creative abilities. The second extract is related to the matter of

students' dropping out of college, while the third extract is related to global warming. Finally, the fourth extract is related to the significance of communication skills. The rationale for choosing the IELTS academic reading comprehension test instead of the general one is that it contains topics that are suitable for academic contexts. This resonates with the current study's sample (i.e., undergraduate students).

Data collection procedures

Before starting the data collection process, we sought the permission of the heads of department (HODs) of the English Departments of respective universities to collect the data. Afterwards, the human resource (HR) department was contacted to get the lists of the first-semester students. The students were contacted individually via email to seek their permission to participate in the current research. The process of data collection lasted for around three weeks which started on 15th December 2020 and ended on 8th January 2021. Due to the COVID-19 pandemic, it was not feasible to collect the data in person. Therefore, class teachers of the selected respondents were asked to gather the students for online meetings. As the students were selected from 19 sections/classes of the three universities, 19 online data collection sessions were conducted. An online reading comprehension test and questionnaires were designed and uploaded to Google Drive, and the respondents were sent the link. In the meantime, we invited the respondents to an online meeting via

Zoom conference call in order to clarify any queries and ensure maximum attendance.

Data analysis

A structural equation modeling (SEM) approach was employed to test the hypotheses. Henseler et al. (2009) presented two models for SEM, i.e., the measurement model and the structural model. The details regarding the data analysis are presented in the following section.

FINDINGS

The results of this study were formulated through several steps/ stages prior to the main data analysis. To begin with, it was to determine if the gathered data contained any outliers or missing values. It is evident from Table 1 that there are no outliers and missing values in the current data set. Next, by employing Skewness and Kurtosis method, it was checked if the current data was normal. Curran et al. (1996) presented a criterion regarding data normality. They stated that Skewness value must be lower than two and the Kurtosis' value must not be greater than 7. It is evident from Table 1, that the data can be categorized as normal as they lie within the prescribed benchmark. Consequently, we proceeded to the main analysis of the data. The main analysis involves the evaluation of two models, i.e., the measurement model and the structural model (Henseler et al., 2009).

Table 1

Data Statistics

	No.	Missing	Mean	Median	Min	Max	Standard Deviation	Excess Kurtosis	Skewness
FRM1	1	0	3.179	3	1	7	1.829	-.815	.49
FRM2	2	0	3.16	3	1	7	1.842	-.739	.461
FRM3	3	0	3.173	3	1	7	1.968	-.94	.512
FRM4	4	0	3.284	3	1	7	1.983	-.948	.454
FRM5	5	0	3.117	3	1	7	1.783	-.798	.481
FRM6	6	0	3.16	3	1	7	1.829	-.726	.463
FRM7	7	0	2.969	3	1	7	1.803	-.713	.493
FRM8	8	0	3.204	3	1	7	1.963	-.979	.399
FRM9	9	0	3.111	3	1	7	1.778	-.86	.376
GRM1	10	0	2.827	2	1	7	2.139	-.462	.957
GRM2	11	0	2.778	2	1	7	2.197	-.575	.945
GRM3	12	0	2.877	2	1	7	2.145	-.555	.915
GRM4	13	0	2.821	2	1	7	2.036	-.334	.954
GRM5	14	0	2.833	2	1	7	2.261	-.669	.946
GRM6	15	0	2.741	2	1	7	2.095	-.256	1.06
GRM7	16	0	2.796	2	1	7	1.922	-.159	.946
GRM8	17	0	2.704	2	1	7	1.924	.01	1.031
GRM9	18	0	2.79	2	1	7	2.187	-.511	.972
REI1	19	0	2.87	2	1	7	2.034	-.397	.915
REI2	20	0	2.796	2	1	7	2.12	-.423	.957
REI3	21	0	2.735	1	1	7	2.306	-.618	.996
REI4	22	0	2.71	2	1	7	2.042	-.138	1.066
REI5	23	0	2.92	2	1	7	2.166	-.534	.976
REI6	24	0	3.253	3	1	6	1.407	-1.022	.132
REI7	25	0	3.179	3	1	6	1.633	-1.409	.078
REI8	26	0	3.241	3	1	6	1.506	-1.263	.042
RCP	27	0	3.204	3	1	6	1.532	-1.295	.162

Measurement model

The assessment of the measurement model requires the testing of numerous entities comprising Cronbach's alpha, discriminant validity, factor loadings, composite reliability, and average variance extracted (AVE). The outcomes of the measurement model are shown in Figure 2, Table 2, Table 3, and Table 4.

The fixed reading mindset was evaluated by nine items (i.e., FRM1 to FRM9). Likewise, the growth reading mindset was evaluated by nine items (i.e., GRM1 to GRM9). Moreover, the mediating variable (i.e., reading engagement) was gauged by eight items (i.e., REI1 to REI8). Lastly, the dependent variable, (i.e., reading comprehension performance) had only one item (i.e., RCP).
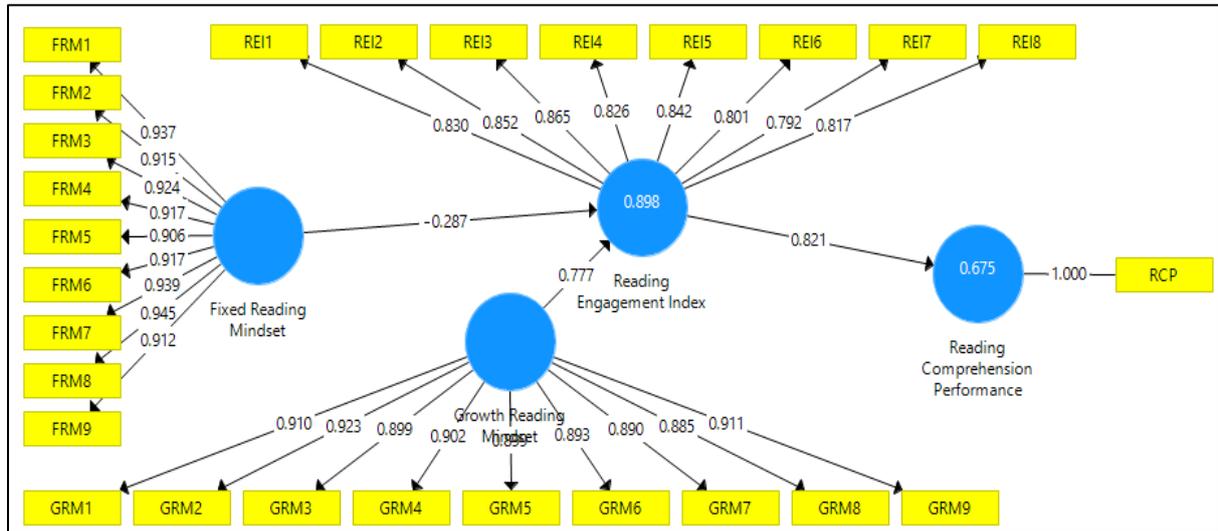
Figure 2
Measurement Model

Table 2
Factor Loadings

	Fixed Reading Mindset	Growth Reading Mindset	Reading Comprehension Performance	Reading Engagement
FRM1	.937			
FRM2	.915			
FRM3	.924			
FRM4	.917			
FRM5	.906			
FRM6	.917			
FRM7	.939			
FRM8	.945			
FRM9	.912			
GRM1		.91		
GRM2		.923		
GRM3		.899		
GRM4		.902		
GRM5		.899		
GRM6		.893		
GRM7		.89		
GRM8		.885		
GRM9		.911		
RCP			1	
REI1				.83
REI2				.852
REI3				.865
REI4				.826
REI5				.842
REI6				.801
REI7				.792
REI8				.817

The factor loadings of the variables' items are depicted in Figure 2 and Table 2. Hair et al. (2010) affirmed that to establish convergent validity, the value of factor loading should not be lower than 0.5. In this study, the factor loadings' value of all the variables lies within the prescribed range (i.e., .79 to .94). Therefore, it can be concluded that the convergent validity of all the variables is established. The values of composite reliability, AVE, and Cronbach's alpha are shown in Table 3.

Table 3
Reliability and Convergent Validity

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Fixed Reading Mindset	.978	.979	.981	.853
Growth Reading Mindset	.971	.971	.975	.812
Reading Comprehension Performance	1	1	1	1
Reading Engagement	.935	.935	.946	.686

George and Mallery (2001) affirmed that the value of Cronbach's alpha should not be less than .7. In the present study, Cronbach's alpha value lies within the prescribed range (i.e., .93 to .97). Moreover, Fornell and Larcker (1981) provided a benchmark for composite reliability (CR) and AVE. They affirmed that the value of CR should be greater than 0.7 and AVE's value should be higher than .5. The values of both the AVE and CR in this study are higher than the prescribed benchmarks.

Additionally, discriminant validity was established via Heterotrait-Monotrait Ratio (HTMT) method (refer to Table 4).

Table 4
HTMT

	Fixed Reading Mindset	Growth Reading Mindset	Reading Comprehension Performance	Reading Engagement
Fixed Reading Mindset				
Growth Reading Mindset	.485			
Reading Comprehension Performance	.738	.627		
Reading Engagement	.679	.864	.843	

Henseler et al. (2015) affirmed that HTMT value should not be greater than .85. It is evident from Table 4 that the discriminant validity is established.

Structural Model

The structural model was evaluated to determine all of the direct relationships. More particularly, in this model, we determined the direct relationship between fixed reading mindset and a growth reading mindset with reading engagement. Also, the direct relationship between reading engagement and reading comprehension performance was also established. Furthermore, the indirect relationships of both independent variables with the dependent variable were established through mediation analysis. To test the associations between variables, t-value and path coefficients were considered. Additionally, predictive relevance (Q^2) was evaluated. As evident from Figure 3 and Table 5, three direct relationships were assessed in the present study. Moreover, two indirect relationships were assessed as depicted in Table 6.
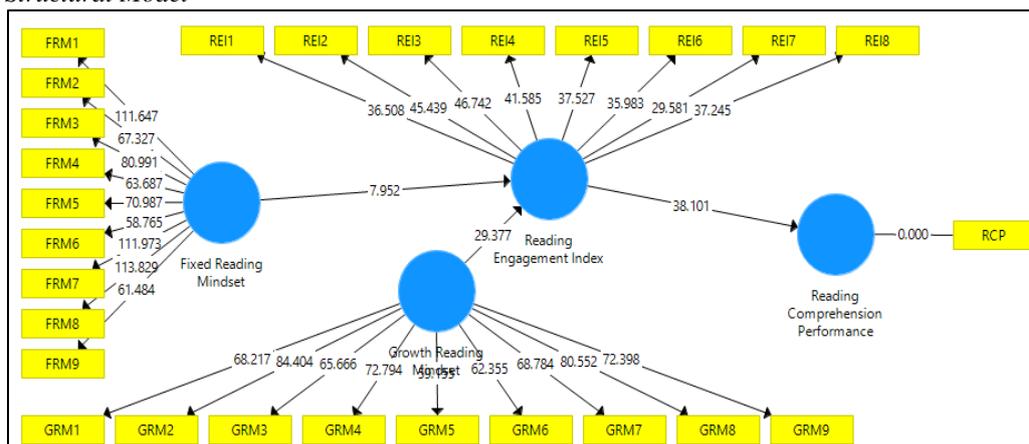
Figure 3
Structural Model

Table 5
Direct Effect Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Fixed Reading Mindset -> Reading Engagement	-.287	-.288	.036	7.952	0
Growth Reading Mindset -> Reading Engagement	.777	.776	.026	29.377	0
Reading Engagement -> Reading Comprehension Performance	.821	.821	.022	38.101	0

Table 6
Indirect Effect Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Fixed Reading Mindset -> Reading Engagement -> Reading Comprehension Performance	-.236	-.237	.029	8.238	0
Growth Reading Mindset -> Reading Engagement -> Reading Comprehension Performance	.638	.637	.029	21.973	0

It is clear from Table 5 that all of the three hypotheses related to direct association (i.e., H_1, H_2, H_3) are accepted. More particularly, fixed reading mindset showed a significant yet negative association with reading engagement (β = -.287; t-value= 7.952), whereas growth reading mindset showed a significant and positive association with reading engagement (β = .777; t-value= 29.377). Furthermore, reading engagement showed a positive and significant association with reading comprehension performance (β = .821; t-value= 38.101).

It is evident from Table 6 that both hypotheses related to the indirect association (H_4, H_5) are accepted. More particularly, reading engagement mediated the association between fixed reading mindset and reading comprehension performance (β = -.236; t-value= 8.238). Likewise, reading engagement mediated the association between a growth reading mindset and reading comprehension performance (β = .638; t-value= 21.973).

Lastly, the predictive relevance (Q^2) of the model was assessed. Henseler et al. (2009) presented a benchmark regarding Q^2. They affirmed that its value should be higher than zero. In the present study, the Q^2 value of both the dependent variables (i.e., reading engagement and reading comprehension performance) is higher than zero (refer to Table 7).

Table 7
Predictive Relevance

	SSO	SSE	Q^2 (=1-SSE/SSO)
Fixed Reading Mindset	1,458.00	1,458.00	
Growth Reading Mindset	1,458.00	1,458.00	
Reading Comprehension Performance	162	55.219	.659
Reading Engagement Index	1,296.00	547.919	.577

DISCUSSION

The first research objective of the current research deals with the relationship between fixed and growth mindsets with the reading engagement among Saudi EFL learners. The results indicated that a fixed reading mindset showed a significant yet negative relationship with reading engagement. In other words, the students who hold a fixed reading mindset do not engage in reading effectively. Hence, H_1 is accepted. This finding is in line with the mindset theory presented by Dweck (1999), which posits that people who hold a fixed mindset believe that intelligence is a nonflexible entity that cannot be changed. In simple terms, they believe that they are born with a fixed intelligence and that no matter how much effort they put in, it cannot be improved. The finding regarding fixed reading mindset is also in accordance with Cho et al. (2019), who found that a fixed mindset showed a significant relationship with performance-avoidance goals which in turn showed a significant yet negative relationship with reading engagement. Their findings indicated that students who had a fixed mindset tended to avoid the challenges and were more prone to become disengaged in reading activities. Also, Robins and Pals (2002) affirmed that students who have a fixed mindset choose the tasks which are comparatively easy as they are more concerned about demonstrating their capabilities, and they are least concerned about learning new things. In addition, the second aspect of the findings related to the first research objective indicates that a growth mindset has a significant and positive relationship with reading engagement. That is, people who believe that their reading abilities can

be improved through effort and hard work tend to engage in reading more as compared to those who believe their reading abilities are fixed and cannot be improved further. Hence H_2 is accepted. The possible reason for this finding could be that respondents might have been industrious by nature. Dweck (1999) affirmed that individuals who work hard have a growth mindset and they engage in different tasks to reach their goals unlike those who have a fixed mindset. Another possible reason for this finding could be attributed to respondents' self-belief in their foreign language reading abilities. Yeager and Dweck (2012) considered that people who hold a growth mindset tend to believe in their abilities and they consider intelligence a variable entity, which can be improved. On the contrary, individuals who hold a fixed mindset consider intelligence as constant, and thus, they lack self-belief in their abilities. Lastly, it could be speculated that the respondents might have welcomed input from other people regarding their English reading skills, which might have provided them with an impetus to engage in reading English texts. According to Saunders (2013), people who hold a growth mindset tend to welcome constructive feedback from their peers to improve their performance by engaging in meaningful activities. This finding is in line with Dweck's (1999) mindset theory which indicates that people who have a growth mindset believe that intelligence is a malleable entity that can be improved by putting more effort into the task. Moreover, Nordin and Broeckelman-Post (2019) also indicated a significant relationship between growth mindset and student engagement. Previous studies showed that it would be misleading to generalize the findings regarding one's mindset across all domains. Few researchers affirmed that the concept of mindset is domain-specific (Ryan & Mercer, 2012a, 2012b). In other words, it is quite possible that learners who hold a fixed mindset in one domain (i.e., reading) may hold a growth mindset in another domain (i.e., writing or listening). Therefore, future research can focus on learners' mindsets regarding other skills of the English language (i.e., listening, speaking, and writing).

The findings to address the second research objective indicated that reading engagement showed a significant and positive relationship with reading comprehension performance among Saudi EFL students. Hence, H_3 is supported. This particularly indicated that learners who are more motivated and inquisitive display positive behavior and use more strategies while reading, leading to improved reading comprehension performance. This could be attributed to the usage of effective metacognitive reading strategies by Saudi EFL undergraduate students (Shehzad et al., 2021). Another possible reason could be that their teachers might have presented reading as a pleasure activity instead of a burden, which consequently might have urged them to engage in reading. This finding is in accordance with the

reading engagement model presented by Guthrie and Wigfield (2000) who discovered that readers who were less engaged in reading had lower motivation and employed fewer strategies as compared to highly engaged readers who had higher motivation and use more reading strategies (Guthrie & Wigfield, 2000). This finding is in line with past studies (Ho & Lau, 2018; Ponitz et al., 2009). For instance, Ponitz et al. (2019) conducted a study on kindergarten students in the USA and found that behavioral engagement showed a significant and positive association with their reading achievement. Moreover, Ho and Lau (2018) conducted a study on 4837 secondary school students and concluded that reading engagement was significantly associated with reading performance. Although the current findings add something new to the two studies' findings as its sample included undergraduate students, caution should be taken to generalize them to other students (i.e., kindergarten and school).

The findings for the third research objective showed that reading engagement significantly mediated the association between reading mindsets and reading comprehension performance. Therefore, H_4 and H_5 are supported. This finding is in line with various past studies in which reading engagement mediated the relationship among several variables (Hamedi et al., 2020; Taboada et al., 2013; Wen et al., 2016; Wigfield et al., 2008). Hamedi et al. (2020), for instance, concluded that reading engagement acted as a mediating variable in determining the relationship between reading emotions and reading performance among Iranian EFL learners. Taboada et al. (2013) found that reading engagement significantly mediated the association between English language proficiency and English reading comprehension. Moreover, Wigfield et al. (2008) conducted a study of primary school students in the USA and found that reading engagement significantly mediated the relationship between reading instruction and reading achievement. The present study is novel in nature as reading engagement has never been added as a mediating variable between reading mindsets and reading comprehension performance.

CONCLUSION

The present study presents three major findings. Firstly, the findings related to the first research objective indicated that there is a significant yet negative relationship between fixed reading mindset and reading engagement; conversely, a growth reading mindset showed a significant and positive relationship with reading engagement. Secondly, the findings regarding the second research objective indicated a significant and positive relationship between reading engagement and reading comprehension performance. Lastly, the findings pertinent to the third research objective indicated that

reading engagement significantly mediated the association between both reading mindsets (i.e., fixed and growth) and reading comprehension performance. These findings highlight the major role of reading engagement as a mediator. Preacher et al. (2007) affirmed that a mediating variable ought to be employed in a model when there exists no direct relationship between the independent and the dependent variable. In such a scenario, the mediator plays its role to better explain the association between the two variables. Since there exists no relationship between reading mindsets and reading comprehension in the EFL context in the past literature, we deployed reading engagement as a mediator.

Based on the findings, the present study presents certain implications for EFL students, teachers, and policymakers. EFL teachers, in particular, could incorporate the present study's findings and the concept of a growth mindset among students to boost their reading engagement and reading comprehension performance. The policymakers need to give more awareness to educational bodies (i.e., schools, colleges, and universities) regarding the importance of students' reading mindsets and reading engagement in improving their academic performance generally and reading performance, particularly by conducting seminars and workshops.

The study has certain limitations. Firstly, the present study employed a quantitative research approach. More robust insights could have been attained by employing a qualitative research approach. Future research could employ a qualitative research approach with the current study's variables, such as conducting interviews to understand more about reading mindsets and their impact on the reading performance of EFL students. Secondly, a cross-sectional design was employed in the present study. Future researchers might use a longitudinal design to collect the data to know more about the changing trends regarding the perceptions and performance of the respondents regarding their reading mindsets, reading engagement, and reading performance. Thirdly, the findings of the current study cannot be generalized to other contexts. They can only be generalized to EFL university students and not to other levels (i.e., college and school-level students). Lastly, future researchers might employ the current study's conceptual model regarding other English language skills (i.e., listening, speaking, and writing).

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Appendix A
Reading Mindset Inventory
Fixed Reading Mindset

1. You have a certain amount of reading intelligence, and you can't really do much to change it.
2. Your reading intelligence is something about you that you can't change very much.
3. To be honest, you can't really change your reading intelligence.
4. To a large extent, a person's biological factors (e.g., brain structures) determine his or her abilities to learn reading skills in new languages.
5. It is difficult to change how good you are at reading in foreign languages.
6. Many people will never do well in reading in foreign languages even if they try hard because they lack natural reading intelligence.
7. How well a person reads in a foreign language depends on how early in life he/she learned it.
8. People can't really read in a new language well after they reach adulthood.
9. Even if you try, the skill level you achieve in reading in a foreign language will advance very little if you learn it when you are an adult.

Growth Reading Mindset

10. No matter who you are, you can significantly change your reading intelligence level.
11. You can always substantially change your reading intelligence.
12. No matter how much reading intelligence you have, you can always change it quite a bit.
13. You can always change your foreign language reading ability.
14. In learning reading skill of a foreign language, if you work hard at it, you will always get better.
15. How good you are at reading in a foreign language will always improve if you really work at it.
16. Everyone could do well in reading in a foreign language if they try hard, whether they are young or old.
17. How well a person reads in a foreign language does not depend on age; anyone who works hard can be a fluent reader in that language.
18. Regardless of the age at which they start, people can read in another language well.

Appendix B
Reading Engagement Index

1. He/she often reads independently.
2. He/she reads favorite topics and authors.
3. He/she is easily distracted in self-selected reading.
4. He/she works hard in reading.
5. He/she is a confident reader.
6. He/she uses comprehension strategies well.
7. He/she thinks deeply about the content of texts.

He/she enjoys discussing books with peers.