

## Original Research

# Probing the relationship among reading anxiety, mindfulness, reflective thinking, and reading comprehension ability of Iraqi intermediate and advanced EFL learners

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Article history Received May 19, 2023 | Revised July 18, 2023 | Accepted September 4, 2023

Conflicts of interest The authors declared no conflicts of interest

Research funding No funding was reported for this research

doi 10.22363/2521-442X-2023-7-3-9-22

For citation Alsharhani, H. K., Ghonsooly, B., & Meidani, E. M. (2023). Probing the relationship among reading anxiety, mindfulness, reflective thinking, and reading comprehension ability of Iraqi intermediate and advanced EFL learners. *Training, Language and Culture*, 7(3), 9-22.

*While students can benefit from mindfulness and reflective thinking practices in their academic success, few studies grasp the entire scope of individuals' experiences. The current study aimed to investigate the relationship among mindfulness, reflective thinking, reading anxiety, and reading comprehension ability in two groups of lower intermediate and advanced Iraqi EFL learners. The research questions investigated role of mindfulness, reflective thinking, and foreign language reading anxiety in the reading comprehension ability of Iraqi EFL learners as well as the predicative power of these variables in EFL learners' success. The research also examined the effect of these variables on learners' level. Finally, learners' attitudes towards the investigated variables were reported. To meet the objectives of the study, mixed-methods research was employed. A total of 200 Iraqi EFL learners were selected and assigned to the experimental and control groups. Both groups were subjected to the reading anxiety comprehension scale, reflective thinking questionnaire, mindfulness scale, and iBT TOEFL reading tests. Data in the qualitative phase of the study were obtained from the semi-structured interviews. It was found that mindfulness and reflective thinking played a positive role in Iraqi EFL learners' reading comprehension, while reading anxiety could negatively affect it. There was a significant difference between Iraqi lower intermediate and advanced EFL learners concerning their mindfulness, reflective thinking, reading anxiety, and reading comprehension ability. Some of the themes arose from the analysis of the interview included working memory enhancement by mindfulness, meta-cognitive reading by reflective thinking, and fear of frustration by anxiety. In conclusion, variables of mindfulness, reflective thinking, and reading anxiety could affect the reading comprehension of EFL Arab learners at advanced and lower intermediate levels. Therefore, teachers are highly recommended to create an atmosphere in which pupils are relaxed and secure.*

**KEYWORDS:** *mindfulness, reflective thinking, reading anxiety, reading comprehension*



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## 1. INTRODUCTION

The ability to comprehend what is being read is a fundamental factor for effective engagement within our society. Reading comprehension entails a multifaceted process between identifying printed symbols and interpreting the meaning behind the symbols (Dennis, 2008; Sobhanifar & Ranjbaran, 2023). In this context, word decoding involves efficient recognition of letters and words, while language comprehension pertains to the skill of grasping lexical information and deriving interpretations at the

level of sentences or beyond (Hoover & Gough, 1990). Despite many studies on identifying important linguistic mechanisms and learning strategies for successful reading comprehension (Cutting & Scarborough, 2006), a significant proportion of students still lack effective reading comprehension skills (Lusnig et al., 2023). Therefore, there is a need to consider psychological factors affecting reading comprehension since a readers' failure to control their thinking while reading may impede comprehension and hinder grasping the intended meaning of the writer

(Paris et al., 1991). It can be, therefore, inferred that reading comprehension is affected by psychological constructs as they can exert control over readers' cognitive processes.

One of the factors that is negatively associated with reading comprehension is anxiety. Horwitz (2001) defined anxiety as the subjective feeling of nervousness, tension, apprehension, and worry associated with an arousal of the autonomic nervous system. In the context of language learning, foreign language learners are not immune to anxiety (Tasan et al., 2021) and it negatively affects language acquisition at slight, moderate, or extreme levels (Tianjian, 2010). Foreign language anxiety can be distinguished from general anxiety as it is a kind of uneasiness and an anxious state of mind typically caused by the unrivalled nature of the language learning procedure (Suleimenova, 2013). Many researchers have, therefore, examined the role of anxiety in language learning since the early 1970s (MacIntyre & Gardner, 1991) in association with concepts, such as language achievement (Sakai & Kikuchi, 2009) and willingness to communicate (Tianjian, 2010). Despite numerous studies on the link between anxiety and language learning, much of the attention has been paid to students' progress in the area of speaking, where they have been reported to feel the highest levels of anxiety. It should not be ignored that students' reading skills are adversely correlated with high levels of anxiety symptoms (Ghonsooly & Loghmani, 2012; Grills-Taquechel et al., 2012; Plakopiti & Bellou, 2014). Previous research on reading and anxiety, on the other hand, has mostly concentrated on general anxiety in communities with extreme reading disabilities or in the sense of second language learning (Brantmeier, 2005; Guimba & Alico, 2016; Horwitz, 2001; Mohammadpur & Ghafournia, 2015).

Another contributing factor in reading performance is mindfulness. It is a psychological concept that has garnered theoretical recognition for its effectiveness in anxiety management (Chesney et al., 2006), a non-judgmental, moment-to-moment awareness condition (Kabat-Zinn, 1990) that can develop fresh and effective ideas, artifacts, or solutions (Runco, 2014), regulate emotions, and decrease different kinds of distress (Baer, 2003). Mindfulness can improve attention capacity and attention capacity positively correlates with reading comprehension (Lusnig et al., 2023; Tarrasch et al., 2016). Moreover, mindfulness can improve brain function (Creswell et al., 2007), as well as cognitive abilities, such as working memory (Zeidan et al., 2010), leading to improved reading comprehension (Mrazek et al., 2013). Therefore, mindfulness in reading involves being fully present and engaged with the act of reading, immersing oneself in the words and ideas on the page without distraction. This focused presence enables a deeper connection to the text, fostering a heightened awareness of the author's message and the subtleties of language.

Similarly, reflective thinking encourages individuals to contemplate and analyse what they have read, to pause and ponder the significance of the concepts presented. Reflective thinking is important since it helps students think critically about their own learning and professional growth (Leung & Kember, 2003; Mes-

bah et al., 2022; Phan, 2009; Yanchar et al., 2008). It can improve learners' metacognitive abilities (Lin et al., 2022), promote conceptual understanding (Pei et al., 2020), and enhance their learning engagement (Chen et al., 2019).

Considering reading comprehension, mindfulness offers a solution to the challenge of anxiety hindering reading comprehension. By adopting a mindful approach to reading, EFL learners can become more aware of their emotions and thoughts, effectively addressing any anxiety that may arise. This creates a mental environment that promotes better understanding. Additionally, incorporating reflective thinking into this process enhances engagement. Reflective thinking prompts learners to pause, question their interpretations, and relate the material to their existing knowledge and experiences. This multifaceted approach not only improves comprehension but also empowers learners to manage anxiety, leading to a more profound and peaceful reading experience. As a result, the field of language learning needs to research mindfulness, reflective thinking, and reading anxiety in a more comprehensive manner and evaluate the extent to which students' language skills can contribute to developing a complete knowledge of these ideas by taking EFL students' language levels into account (Thompson, 2011). In this regard, the current study aimed to examine the relationships among the variables of mindfulness, reflective thinking, reading comprehension, and reading anxiety by identifying the sources of foreign language reading anxiety to help students manage this type of anxiety. With this in mind, this study sought to answer the following research questions.

1. Do mindfulness, reflective thinking and foreign language reading anxiety play a significant role in the reading comprehension ability of Iraqi EFL learners?
2. Which of the main variables of this study (mindfulness, reflective thinking, foreign language reading anxiety) is a better predictor of reading comprehension ability of Iraqi EFL learners?
3. Are there any statistically significant relationships among mindfulness, reflective thinking, and foreign language reading anxiety of Iraqi EFL learners?
4. Is there any statistically significant difference between Iraqi below intermediate and advanced EFL learners in terms of mindfulness, reflective thinking, reading anxiety, and reading comprehension ability?
5. What are the attitudes of Iraqi EFL learners about the relationship between reading anxiety, mindfulness, reflective thinking, and reading comprehension ability?

## 2. THEORETICAL BACKGROUND

The concept of foreign language anxiety was introduced by Horwitz et al. (1986, p. 128) as '*a distinct complex of self-perceptions, beliefs, feelings, and behaviours related to classroom language learning arising from the uniqueness of the language learning process*'. According to Horwitz (2001), a third of all foreign language learners experience language anxiety in varying degrees. Although reading as a component of second/foreign language skill may not sound anxiety-provoking, it cannot be ignored that

reading is an individual act with great potential for anxiety (Saito et al., 1999). Reading anxiety usually stems from unfamiliarity with the writing systems and cultural material (Ahmad et al., 2013; Saito et al., 1999; Yousef et al., 2014). For instance, Arabic is written from right to left, the alphabet is quite different, negations and articles are not interchangeable, and texts can be united together in the Arabic language. These differences may significantly raise reading anxiety in Arabic-speaking high-schoolers (Farran et al., 2012; Mace, 2008; Tawalbeh, 2013). To alleviate this anxiety, it is crucial for students to comprehend the source of their unease and its effects (Gregersen & Horwitz, 2002). This leads to the hypothesis that incorporating mindfulness and reflective thinking can positively impact foreign language learners' anxiety. Mindfulness theory is concerned with present-moment awareness, derived from contrasting situations that broaden one's perception of a situation by having an open mind to different viewpoints and concepts (Carson & Langer, 2006). Mindfulness has been proven to improve attentiveness, spatial memory, cognitive function, and attention (Zeidan et al., 2010). According to Langer (2000), mindfulness will culminate in '*an increase in competence; a fall in accidents; an improvement in memory, imagination, and good affect; a decrease in stress; and an enhancement in health and life*' (Langer, 2000, p. 220). Mindfulness has been suggested as a way to perform better academically (Rosaen & Benn, 2006; Rosenstreich & Margalit, 2015), keep improving English and math scores on standardised tests (Nidich et al., 2011), and bolster academic achievement in students with learning disabilities (Beauchemin et al., 2008; McCloskey, 2015). Research has also revealed that after completing the mindfulness practice, sustained effects can be found, implying that practicing mindfulness can have a long-term anxiety-relieving effect (Newsome et al., 2012). Studies have indicated that mindfulness-based education is useful in reducing the effect of stress on university students (Regehr et al., 2012).

Reflection is an active, sustained, deliberate appraisal of any notion or professed body of knowledge in light of its premises and outcome (Dewey, 1997). Reflective thinking has two key aspects, as it involves (1) a state of hesitation, indecision, confusion, or psychological complexity from which thinking arises, and (2) a quest for material that would fix the doubt, solve, or try to get rid of the perplexity (Dewey, 1997). Studies have highlighted that reflection involves rational, organised, language-based decision-making processes that also include non-rational, gestalt type operations (Akbari et al., 2010; Korthagen, 2001). Chi (1997) further highlights reflective thinking's capacity to bridge prior and current knowledge through personal observation, allowing for the recognition of new connections and relationships.

The relationship between mindfulness and reflective thinking suggests that these two concepts can synergistically contribute to addressing foreign language reading anxiety. Mindfulness serves as a foundation for cultivating self-awareness, while reflective thinking empowers learners to engage deeply with

their experiences and perceptions. Both strategies equip learners with tools to manage and reduce anxiety, thereby enhancing their reading comprehension and overall language learning journey. In the context of foreign language learning, the integration of mindfulness and reflective thinking offers a promising approach to fostering a more effective learning experience.

### 3. MATERIAL AND METHODS

#### 3.1. Research design

To address these research questions, the study employs a mixed-methods research design. The primary aim of this design is to comprehensively explore the roles of mindfulness, reflective thinking, and foreign language reading anxiety in the reading comprehension abilities of Iraqi EFL learners. Additionally, the study seeks to uncover the relationships among these variables and discern any disparities between intermediate and advanced-level Iraqi language learners. The data for this phase of the study were collected using questionnaires for each investigated variable. Three questionnaires were used to collect data. Furthermore, to provide a deeper and more nuanced understanding, qualitative data was gathered through interviews.

#### 3.2. Participants

A total of 200 EFL Iraqi male and female learners studying at English language institutes in al Qadisiya city, Iraq, participated in this study. The participants were recruited using convenience sampling due to the accessibility criteria. Of the total, 100 students were lower-intermediate and 100 were advanced-level learners. The participants were within the age range of 20-28 years. They were all originally from Iraq, and their mother tongue was Arabic.

To collect the data, the researchers had instructors' permission for administering the questionnaires during class time. English versions of the questionnaires were distributed among the learners and the participants filled out the questionnaires in the classroom. Before distributing the questionnaires, the researchers briefed the participants on the study's goals and gave them an estimate of how long it would take them to complete the questionnaires (about 60 minutes). Students were also assured that their participation would be voluntary, anonymous, would not affect their grades in any way, and that their anonymity and confidentiality would be protected.

#### 3.3. Instrumentations

##### 3.3.1. Langer mindfulness scale

The first instrument used in the current study was the Langer Mindfulness Scale (LMS) which examines the respondents' level of mindfulness. This scale was developed by Pirson et al. (2012). This 14-item scale assesses three components, namely novelty searching, novelty making, and interaction. These factors are rated on a seven-point Likert scale with notations ranging from 1 (strongly disagree) to 7 (strongly agree). The scale has the reasonable internal consistency, with alphas ranging from .80 to .90.

### 3.3.2. Reflective thinking questionnaire

The second data collection instrument employed in the present study was the Reflective Thinking Questionnaire adopted from Kember (2000). It contains 16 items for the respondents to engage in reflective thinking. This version of the questionnaire includes four subscales of habitual action, understanding, reflection, and critical reflection. The items are on a 5-point Likert scale ranging from 1 (definitely disagree) to 5 (definitely agree). The reliability and validity of the questionnaire were estimated by Ghanizadeh and Jahedizadeh (2017) in their study. The reliability was calculated by Cronbach Alpha to be .81. They found the reliability estimate of each subscale, and they were reported as habitual action (.78), understanding (.84), reflection (.80), and critical reflection (.74).

### 3.3.3. Foreign language reading anxiety scale

Foreign Language Reading Anxiety Scale (FLRAS) was the third instrument used in this study. It measures a learner's anxiety and fears when s/he is unable to comprehend a text in an EFL/ESL context. Saito et al. (1999) developed this questionnaire of 20 items, each of which was answered on a five-point Likert-type scale. The scale has the internal consistency coefficient of .86 using Cronbach's alphas.

### 3.3.4. Reading comprehension test

Finally, the cloze test was derived from reliable and credible reading passages of iBT TOFEL to assess EFL earners' reading comprehension. The deletion method which is based on Klein-Braley (1997) eliminates every  $n$ th word (where  $n$  refers to the number of deleted words that is normally between the fifth and tenth word of a sentence in the text). According to Jonz and Oller (1994), word deletion should begin and end with an unchanged sentence. This cloze test was chosen for a target population of L2 English learners with levels ranging from lower-intermediate to advanced.

## 3.4. Procedures

The study was conducted from 2021 to 2022. To enhance the validity of the research instruments in the context of Iraqi EFL learners, a rigorous process of adaptation and translation was undertaken. Given the potential impact of cultural nuances and language proficiency on participants' responses, the instruments were scrutinised for their appropriateness within the Iraqi cultural and linguistic context. The LMS, Reflective Thinking Questionnaire, and FLRAS were adapted through a systematic process of translation and cultural adaptation. Expert linguists proficient in both English and Arabic languages were engaged to ensure accurate translation while preserving the intended meaning of the items. Following translation, three Iraqi language experts reviewed the items for cultural relevance and linguistic appropriateness. Based on their feedback, necessary refinements were made to the instruments to enhance their suitability for Iraqi participants. The reflective thinking questionnaire was administered to lower-intermediate and advanced Iraqi EFL learn-

ers to determine its relationship with their reading ability. Participants gave informed consent to be part of the study. Next, groups of participants were subjected to LMS to investigate the relationship between their mindfulness and reading comprehension. During the same session, FLRAS scale was employed to determine how reading anxiety is related to students' reading abilities. Both groups of participants were subjected to these surveys. Finally, a reading comprehension test was conducted to determine if there was a relationship between mindfulness, reflective thinking, reading anxiety level, and reading comprehension ability.

First, actual texts were excerpted and evaluated. Then, two texts were chosen from iBT TOEFL (Educational Testing Service, 2007). The Flesch Readability Formula was used to determine their readability. This test was chosen for L2 English learners with lower intermediate and advanced levels and was administered at the end of the semester. Students had 20 minutes to finish the reading. The Cochran formula was used to determine the number of interview participants. This formula is as follows:

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

where  $N$  signifies population size, and  $n_0$  denotes the required return sample size according to Cochran's formula.

According to the formula, 22 participants were selected for the qualitative study. In a semi-structured interview, the first researcher probed into learners' attitudes concerning the relationship between mindfulness, reading anxiety, and their reading comprehension ability. At this point, a number of questions related to each of these factors were developed and posed by the researchers (Appendix 1).

The obtained data were analysed using SPSS software (version 23). First, descriptive statistics (frequency, mean and standard deviation) were used for the quantitative research questions. After running Kolmogorov-Smirnov Test, a set of Pearson-product moment correlation was employed to address the first three research questions. Structural equation modelling (SEM) was performed to answer research questions 4 and 5 using Lisrel software by modelling the interrelationship among the investigated variables. For the sixth research question, an independent samples t-test was run. To answer the last question, the researchers conducted the interviews and transcribed the respondents' answers until they reached saturation. Then, the collected data was coded. Codes were separated into concepts, then themes (or categories). The researchers retrieved the codes and evaluated them in MAXQDA software. The study's quantitative and qualitative data was then presented in tables and figures.

## 4. RESULTS

Table 1 tabulates the results of Kolmogorov-Smirnov Test to check the normality of the data. As can be seen all of the stated variables met the normality assumption since a value of more than .05 is indicative of an inclination toward normality.

Table 1  
Kolmogorov-Smirnov test for the normality of data

	READING COMPREHENSION ABILITY	MINDFULNESS	REFLECTIVE THINKING	READING ANXIETY
N	200	200	200	200
Kolmogorov-Smirnov Z	1.346	1.262	1.510	0.690
Asymp. Sig. (2-tailed)	0.165	0.231	0.177	0.728

In order to answer the first research question of the study, the researchers performed a correlational analysis of students' mindfulness and reading comprehension ability with respect to their filled-out questionnaires. Table 2 shows the correlations between mindfulness and reading comprehension ability. As can be seen, mindfulness correlated positively with the reading comprehension ability of Iraqi students. Table 3 indicates the relationship between students' reflective thinking and their reading comprehension ability using Pearson-Product moment. The as-

sociation between students' reflective thinking and reading comprehension ability was significant ( $r [200] = .57, p = .00$ ), showing a relationship. Accordingly, reflective thinking can improve EFL learners' reading comprehension.

Regarding the third research question, Iraqi EFL students' reading anxiety was adversely associated with their reading abilities ( $r [200] = -.40, p = .00$ ). So, a negative association between reading comprehension and reading anxiety was established (Table 4).

Table 2  
Correlations between mindfulness and reading comprehension ability

	READING COMPREHENSION ABILITY
	Pearson Correlation
	0.62
	Sig. (2-tailed)
	0.00*
Mindfulness	
	N
	200

\*. Correlation is significant at the 0.05 level (2-tailed).

Table 3  
Correlations between reflective thinking and reading comprehension ability

	READING COMPREHENSION ABILITY
	Pearson Correlation
	0.57
	Sig. (2-tailed)
	0.00*
Reflective thinking	
	N
	200

\*. Correlation is significant at the 0.05 level (2-tailed).

Table 4  
 Correlations between reading anxiety and reading comprehension ability

READING COMPREHENSION ABILITY	
Pearson Correlation	-0.4
Sig. (2-tailed)	0.00*
Reading anxiety	
N	200

\*. Correlation is significant at the 0.05 level (2-tailed).

Figure 1 shows the factor coefficients and path coefficients to examine the predictors of reading comprehension ability. To answer the fourth research question, and based on the literature, reflective thinking and mindfulness are the two main psychological factors that can determine one's L2 reading ability.

Anxiety negatively affects learners' language achievement (Rodriguez & Abreu, 2003). SEM predicts reading comprehension using only these parameters and was used to investigate the predictive capacity of psychological states on EFL readers' comprehension. Model's arrows reflect the scholars' assumptions.

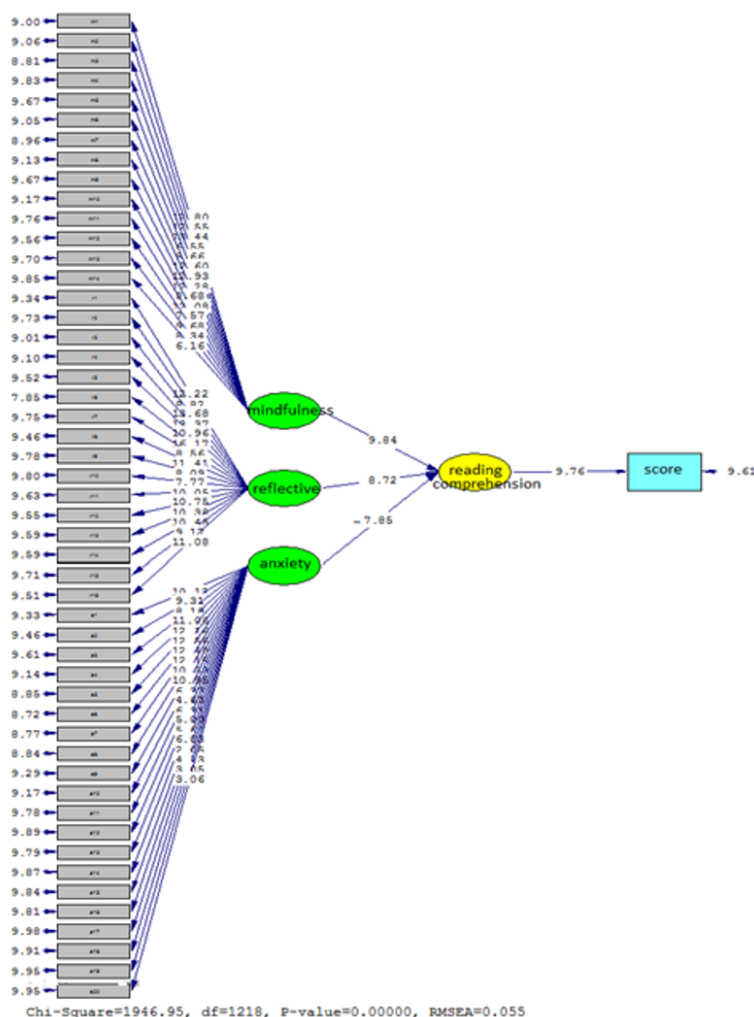


Figure 1. Factor coefficients and path coefficients to examine the predictors of reading comprehension ability

The analysis of data indicated a positive path coefficient between mindfulness and reading comprehension (0.63). The t statistic was 9.84, which was more than 1.96; therefore, with 95% confidence, it could be inferred that the path coefficient was significant at the 0.05 level and that mindfulness had a favourable influence on reading comprehension. The path coefficient

between reflective thinking and reading comprehension was equal to 0.58, which was a positive value. The t statistic was 8.72, which was more than 1.96, thus, there was a significant and positive link between reflective thinking and reading comprehension. Reflective thinking improved reading comprehension (Table 5).

Table 5  
The Results of SEM for three variables of mindfulness, reflective thinking, and anxiety

THE RELATIONSHIP		PATH COEFFICIENTS	t-value
Mindfulness	Reading Comprehension	0.63	9.84
Reflective thinking	Reading Comprehension	0.58	8.72
Reading anxiety	Reading Comprehension	-0.43	-7.85

The analysis revealed a notable relationship between reading anxiety and reading comprehension, with a path coefficient of -0.43. The corresponding t statistic of 7.58 highlights the statistical significance of this relationship, demonstrating a strong inverse association between reading anxiety and reading comprehension. This outcome provides compelling evidence that elevated levels of reading anxiety substantially hindered the reading comprehension abilities of learners. Moreover, the most influential predictor of reading comprehension was found to be mindfulness. The results indicated a robust positive impact of mindfulness on reading comprehension outcomes. This suggests

that cultivating mindfulness practices could potentially enhance learners' reading comprehension abilities. The assessment of model fit revealed promising results. The relative chi-square value of 1.59, falling within the optimal range between 1 and 3, indicates an acceptable fit of the model. Additionally, indices including AGFI, GFI, IFI, CFI, and NFI, exceeding the threshold of 0.9, indicate a good model fit. The alignment of indicator values with interpretation requirements further supports the validity of the model's dimensions. Confirmatory factor analysis provided valuable validation for the underlying structure of the model, reinforcing the credibility of the study's findings (Table 6).

Table 6  
Goodness-of-fit Indices for predictive ability of mindfulness, reflective thinking, and anxiety for reading comprehension ability

$\chi^2/DF$	RMSEA	NFI	GFI	IFI	CFI	AGFI
1.59	0.055	0.91	0.92	0.92	0.93	0.92

To address the fifth research question, a path analysis was conducted to explore the relationships between mindfulness, reflective thinking, reading anxiety, and reading comprehension. The analysis yielded insightful findings regarding the strength and direction of these associations. Mindfulness and reflective thinking exhibited a positive path coefficient of 0.83, indicating a robust positive relationship between these two variables. The t statistic for this relationship was 10.32, signifying a high level of statistical significance with a confidence level of 95%. This outcome underscores the significant positive link between mindfulness and reflective thinking, offering valuable insights into their interplay within our study context. Regarding the relationship between mindfulness and reading anxiety, a negative path coefficient was observed, with a t statistic of -9.31. This result indicates a substantial inverse association between mindfulness and

reading anxiety. The statistical significance of this association highlights the potential of mindfulness to mitigate reading anxiety among Iraqi EFL learners. Furthermore, a negative path coefficient was identified between reflective thinking and reading comprehension, with a t statistic of 7.83. This finding demonstrates a significant inverse relationship between reflective thinking and reading comprehension. This suggests that as reflective thinking increases, reading comprehension tends to improve among the participants (Figure 2).

Table 7 shows fitting index values. Since RMSEA was 0.054, the model was acceptable. Also, the relative chi-square value was 1.58 (1172.55 / 1172) between 1 and 3, while the AGFI, GFI, IFI, CFI, and NFI indices were 0.9. In general, indicator values match their interpretation criteria, and confirmatory factor analysis verifies the model's dimensions.

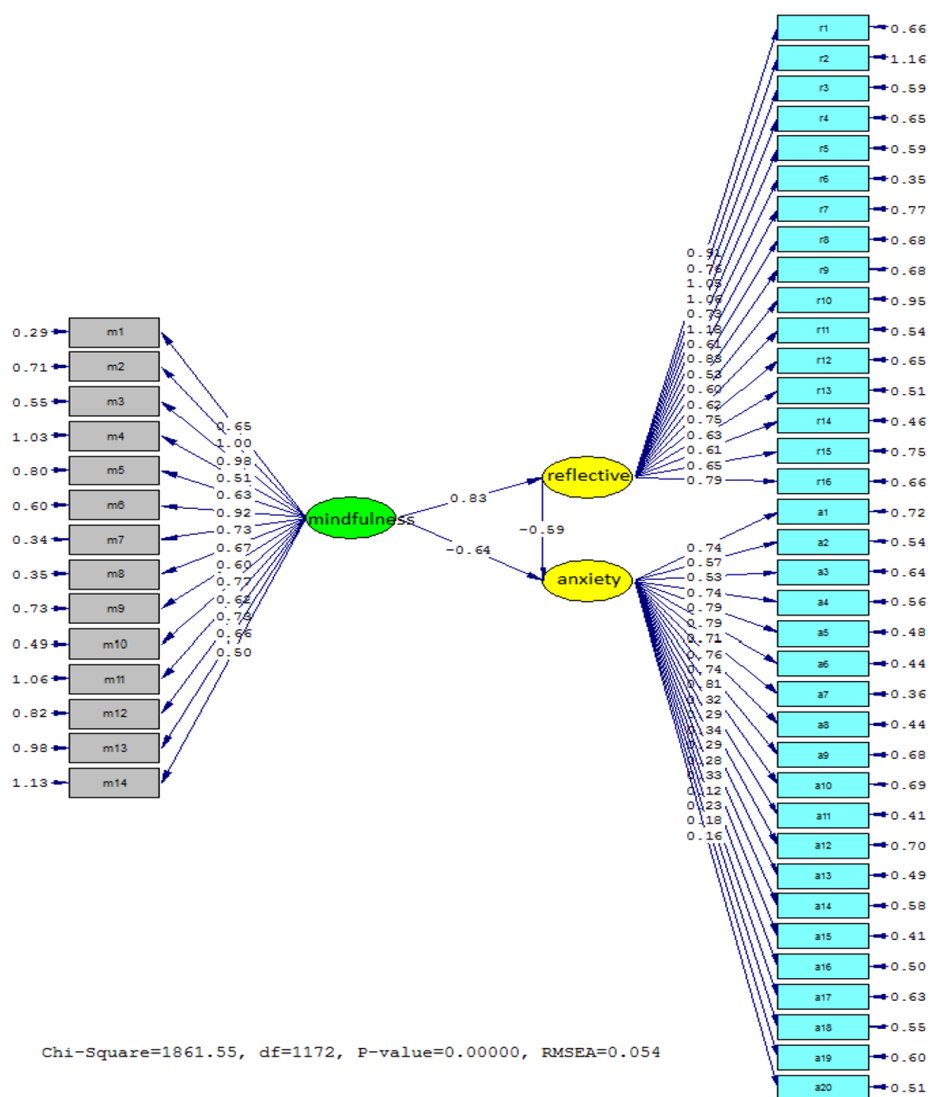


Figure 2. Factor coefficients and path coefficients to examine the relationships among mindfulness, reflective thinking, and foreign language reading anxiety

Table 7

Goodness-of-fit Indices for the relationship of mindfulness, reflective thinking, and anxiety

$\chi^2/DF$	RMSEA	NFI	GFI	IFI	CFI	AGFI
1.58	0.054	0.92	0.91	0.94	0.91	0.91

To address the sixth research question, Levene’s Test was used to test the equality of variances hypothesis (Table 8). The significance value for the equality of variances in all variables was over 0.05, indicating the variances were equal. The significance threshold of the test for all variables was 0.00, which was less than 0.05 ( $p = 0.000 < 0.05$ ), thus, there were significant differences between lower intermediate and advanced language

learners. Mindfulness, reflective thinking, reading anxiety, and reading comprehension differed between Iraqi English students (Table 8).

To address the seventh research question, the student’s responses were coded. Figure 3 illustrates all codes and subcodes that can be regarded as the most significant in terms of mindfulness, reflective thinking, and reading anxiety.



Table 8

Independent samples t-test of the variables of the study

Effect Size		Levene's Test for Equality of	Levene's Test for Equality of		t-test for Equality of Means				
			F	Sig.	t	df	Sig. (2-tailed)	95% Confidence Interval of the Difference	
								Lower	Upper
Reading	.305	Equal variances assumed	.062	.804	-2.154	198	.000	-0.41	-0.35
		Equal variances not assumed			-2.154	196	.000	-0.41	-0.35
Mindfulness	.395	Equal variances assumed	.511	.475	-2.790	198	.000	-0.29	-0.12
		Equal variances not assumed			-2.790	197.9	.000	-0.29	-0.12
Reflective	.337	Equal variances assumed	.006	.940	-2.384	198	.000	-0.26	-0.18
		Equal variances not assumed			-2.384	198	.000	-0.26	-0.18
Anxiety	.303	Equal variances assumed	.001	.973	2.140	198	.000	0.14	0.16
		Equal variances not assumed			2.140	198	.000	0.14	0.16

\*. significant at the 0.05 level (2-tailed).

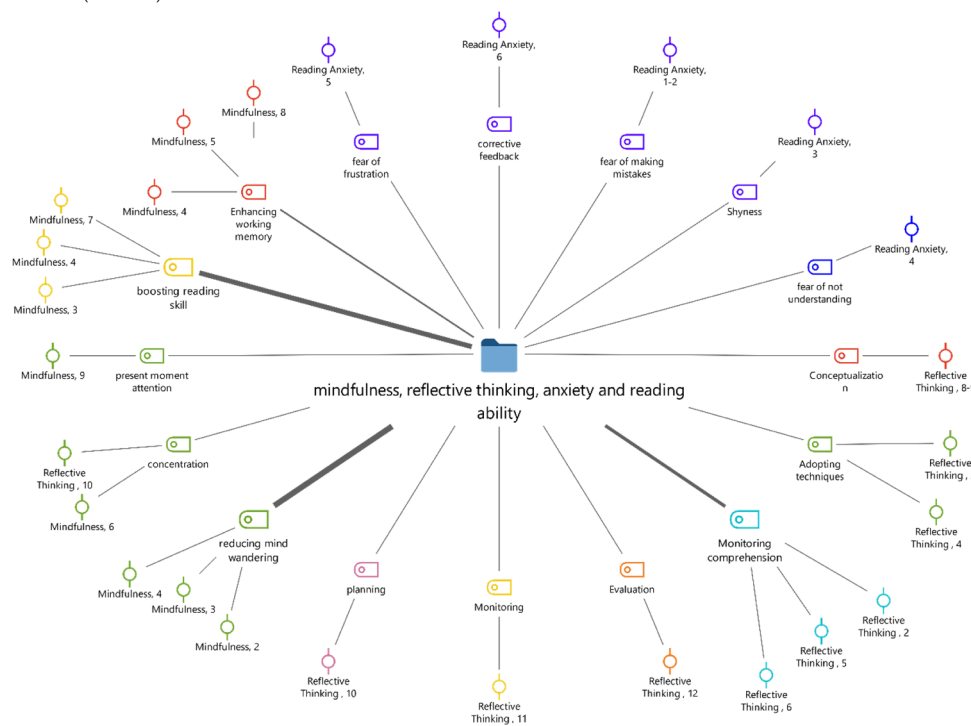


Figure 3. The MAXMap of the students' attitudes towards mindfulness, reflective thinking, and reading anxiety in their reading comprehension

According to three questions about mindfulness, reflective thinking, and reading anxiety, the following codes and sub-codes were extracted.

1. Mindfulness and reading skills included sub-codes of reducing mind wandering (concentration, present moment attention), boosting reading skills, and enhancing working memory.

The majority of the participants reported that mindfulness practices could reduce the negative effects of distraction and that this activity gave them a feeling of fulfilment. This finding aligns with the quantitative results indicating a significant inverse relationship between mindfulness and reading anxiety, suggesting that mindfulness contributes to reduced distraction and heightened attention, ultimately benefiting reading comprehension. Some participants also mentioned that they were cheered by the teacher's use of this method in the class. They believed a good teacher could boost students' understanding of English learning by using mindfulness practices in class. One participant mentioned that *'whenever I do mindfulness practices, my concentration ability is greatly influenced, and I feel more powerful in thinking deeply. So, my ability to focus on my language practices and skills will increase as well'* (reducing mind wandering-concentration). Another student said: *'For me, doing some kinds of meditation and mindfulness practices may result in my awareness of the situations, and it may lead to a high degree of attention when I do something. Regarding my reading practices, using mindfulness practices, my reading skill enhanced a lot, as earlier I used to have a wandering thought and lack of concentration on reading passage'* (boosting reading skills). The following quote from a participant illustrates the sub-code of enhancing working memory: *'what surprised me the most was actually mindfulness training improves my memory capacity and enhances reading performance while reducing mind wandering'*. This qualitative insight corroborates the quantitative findings that identified mindfulness as a strong predictor of reading comprehension. These qualitative accounts offer a richer understanding of the specific cognitive processes that underlie the observed relationship.

2. Reflective thinking and reading skills included the following sub-codes: problem-solving (conceptualisation, adopting techniques, and monitoring comprehension), meta-cognitive reading (evaluation, monitoring, and planning). The following quotes are from participants who expressed problem-solving and metacognitive reading:

*'I feel it helps to understand what the reading questions are.'*

*'I can use best strategies for answering reading comprehension questions.'*

*'Whenever I want to do a reading practice, I try to allocate sufficient resources for my reading. For example, before reading, I try to predict, sequence strategies, and allocate enough time and attention to my reading task. I think it can be like the process of organising the activities required to achieve a desirable score in a reading test.'*

*'Once I start my reading, I try to be aware of text and be engaged in reading task, and monitor myself in different phases of reading.'*

*'The majority of the participants reported that mindfulness practices could reduce the negative effects of distraction and that this activity gave them a feeling of fulfilment. This finding aligns with the quantitative results indicating a significant inverse relationship between mindfulness and reading anxiety, suggesting that mindfulness contributes to reduced distraction and heightened attention, ultimately benefiting reading comprehension'*

Participants' narratives provided context to the quantitative result that indicated an inverse association between reflective thinking and reading comprehension. Their accounts of employing problem-solving techniques and metacognitive strategies during reading underscore the practical implications of this relationship.

3. Reading anxiety and reading skills included the following sub-codes: fear of frustration (corrective feedback, speed reading), fear of reading in public (fear of making mistakes, shyness), and fear of not understanding. Figure 3 depicts the findings. Mindfulness may reduce mind wandering, improve working memory, and raise reading proficiency, according to the participants. Reflective thinking affects problem-solving and metacognitive skills, and reading anxiety causes fear of reading in public, not understanding the text, and irritation. The following excerpts imply that problem-solving was a major sub-code in students' recount of reflective thinking and reading skills:

*'What impressed me most in the process of reading a text is the fear of misunderstanding the passage and getting confused by the content. This may lower the chance of getting good results in an English test.'*

*'What bothers me most is the shyness feeling that I have when I want to read aloud in front of my peers and my teacher as well. I am afraid that I cannot manage that well.'*

*'I feel that if my teacher asks me to read something in class, maybe others try to make fun of my reading style and they laugh at me, if I commit error.'*

## 5. DISCUSSION

As was mentioned earlier, the current study aimed at investigating the relationship among reading anxiety, mindfulness, reflective thinking, and reading comprehension ability in two groups of lower intermediate and advanced Iraqi EFL learners. In addition, the attitudes of learners toward the relationship of reading comprehension ability with mindfulness, reflective thinking, and reading anxiety were explored.

The findings of this study revealed significant positive correlations between mindfulness and EFL learners' reading comprehension. Mindfulness was also significantly and negatively correlated with reading anxiety. This means that learners' performance on reading can be improved with mindfulness and their higher scores on mindfulness indicate their lower reading anxiety. The same was true for reflective thinking. Given the

*'The findings of this study revealed significant positive correlations between mindfulness and EFL learners' reading comprehension. Mindfulness was also significantly and negatively correlated with reading anxiety. This means that learners' performance on reading can be improved with mindfulness and their higher scores on mindfulness indicate their lower reading anxiety. The same was true for reflective thinking'*

values of fit indices reported, the model revealed that mindfulness and reflective thinking could predict reading ability of EFL learners. Any pair of factors (mindfulness, reflective thinking, reading comprehension) had positive and significant path coefficients. Further, reading anxiety severely affected pupils' reading comprehension and reading test scores. As for the sixth research question, the researchers observed substantial differences between Iraqi lower intermediate and advanced EFL learners' mindfulness, reflective thinking, reading anxiety, and reading comprehension. The mean of mindfulness, reflective thinking, and reading comprehension variables in the advanced group was higher than the lower intermediate group and the mean reading anxiety in the lower intermediate group was higher than the advanced one.

These results are compatible with previous empirical and theoretical studies. This finding was in harmony with the results obtained from the study by Kim (2021), indicating the participants with higher states of mindfulness tended to read English with less anxiety, and consequently performed better on the reading tests. In the same vein, Fallah (2017) reported a direct correlation between practicing mindfulness in young adults with significantly reduced anxiety when having to use EFL in the classroom. This was supported by Charoensukmongkol (2019), who found a strong correlation between practicing mindfulness and reduced language anxiety. According to Namaziandost et al. (2022), anxiety has been shown to significantly influence the global language reading comprehension ability of EFL learners. It can be, therefore, concluded that mindfulness reduces anxiety, and consequently, EFL learners' performance is improved. This can be considered as one possibility for the predictive ability of mindfulness for EFL learners' reading ability.

It was found that reflective thinking can positively affect learners' reading comprehension and act as a strong predictive factor. As Wirth and Aziz (2009) discussed, reflective reading strategies make the learners more attached to the task, to read repeatedly, and to self-evaluate their own performance, which yields better performance in reading comprehension. Nourdad and Asgari (2017) reported the positive effects of reflective reading strategies on reading comprehension of Iranian EFL learners, which could support the present findings.

The study's qualitative findings supported the quantitative findings as learners found mindfulness and reflective thinking facilitative factors and reading anxiety a debilitating factor. As

Müller et al. (2021) mentioned, mindful learners can better concentrate on their learning and performance and dwell less on their mistakes. This statement included two sub-codes of the current study, namely concentration and fear of making mistakes. Moreover, reflective learning provides learners with an arranged opportunity to examine their learning (Verpoorten et al., 2011), which was noted by the learners when they mentioned, 'Once I start my reading, I try to be aware of text and be engaged in reading task and monitor myself in different phases of reading'.

## 6. CONCLUSION

The findings of the current study offer observations that can inform educational practices and research strategies for both advanced and lower-intermediate EFL learners. The higher mean scores of mindfulness, reflective thinking, and reading comprehension variables among advanced learners suggest an inclination toward employing effective cognitive and metacognitive strategies, ultimately contributing to their increased reading proficiency. To capitalize on these cognitive strengths, educators might contemplate integrating mindfulness and reflective thinking exercises into their instructional approaches, further nurturing the cognitive and metacognitive capacities that appear prominent among advanced learners.

Conversely, the observation of higher mean reading anxiety among lower-intermediate learners implies the need for targeted interventions to alleviate anxiety and cultivate coping mechanisms. The exploration of mindfulness-based techniques as potential anxiety management tools holds promise. Recognising the underlying causes of this elevated anxiety level and customising interventions accordingly could yield more impactful strategies to assist learners at varying proficiency levels. EFL instructors play a crucial role in identifying anxiety-reducing strategies that resonate with learners during reading instruction. Once validated, these strategies can be methodically integrated into the curriculum, ensuring learners' comfort and engagement.

It is worth acknowledging that the absence of written forms in certain Arabic and Iraqi dialects could intensify reading anxiety, potentially hindering learners' exposure to reading strategies. As a response, educators are encouraged to introduce reading strategies through purposeful training and classroom activities. This approach enables learners to grasp reading strategies effectively, furthering their comprehension of reading materials.

In light of the study's limitations, future research endeavours could be broadened by incorporating larger and more diverse participant groups, enhancing the generalisability of results. While this study examined the impact of proficiency levels on the variables under investigation, future investigations might explore other influential factors, including gender, age range, and potential contextual influences. Furthermore, expanding the research scope to encompass various language skills could offer a comprehensive understanding of their interconnectedness within language learning contexts.

## Appendix 1

### Interview questions

1. How mindfulness can affect an individual's skills?
2. What mediation activities did you find useful for your skill enhancement?
3. Explain some examples of negative experiences that you had in language learning reading skill as a result of high level of anxiety?
4. How did you reacted physically and mentally when you experienced those situations?
5. Does thinking about those experience have any negative influence on you? If yes, what are the negative results?
6. Do you see this concept (anxiety in reading skill) as a sign of your own weakness?
7. What are the benefits of mindfulness on a person as a language learner?
8. How do you feel about reflective thinking in your skill learning (mainly, your reading skill)?
9. What is your impression about reading anxiety and reading comprehension?

### References

- Ahmad, I. S., Al-Shboul, M. M., Nordin, M. S., Rahman, Z. A., Burhan, M., & Madarsha, K. B. (2013). The potential sources of foreign language reading anxiety in a Jordanian EFL context: A theoretical framework. *English Language Teaching*, 6(11), 89-110. <https://dx.doi.org/10.5539/elt.v6n6p38>
- Akbari, R., Behzadpoor, F., & Dadvand, B. (2010). Development of English language teaching reflection inventory. *System*, 38(2), 211-227. <https://doi.org/10.1016/j.system.2010.03.003>
- Baer, R. A. (2003). Mindfulness training as a clinical intervention: A conceptual and empirical review. *Clinical Psychology: Science and Practice*, 10(2), 125-143. <https://dx.doi.org/10.1093/clip.sy.bpg015>
- Beauchemin, J., Hutchins, T. L., & Patterson, F. (2008). Mindfulness meditation may lessen anxiety, promote social skills, and improve academic performance among adolescents with learning disabilities. *Complementary Health Practice Review*, 13(1), 34-45. <https://doi.org/10.1177/1533210107311624>
- Brantmeier, C. (2005). Anxiety about L2 reading or L2 reading tasks? A study with advanced language learners. *Reading*, 6(5), 67-85.
- Carson, S. H., & Langer, E. J. (2006). Mindfulness and self-acceptance. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, 24(1), 29-43. <https://doi.org/10.1007/s10942-006-0022-5>
- Charoensukmongkol, P. (2019). The role of mindfulness in reducing English language anxiety among Thai college students. *International Journal of Bilingual Education and Bilingualism*, 22(4), 414-427. <https://dx.doi.org/10.1080/13670050.2016.1264359>
- Chen, M. R. A., Hwang, G. J., & Chang, Y. Y. (2019). A reflective thinking-promoting approach to enhancing graduate students' flipped learning engagement, participation behaviors, reflective thinking and project learning outcomes. *British Journal of Educational Technology*, 50(5), 2288-2307. <https://doi.org/10.1111/bjet.12823>
- Chesney, M. A., Neilands, T. B., Chambers, D. B., Taylor, J. M., & Folkman, S. (2006). A validity and reliability study of the coping self-efficacy scale. *British Journal of Health Psychology*, 11(3), 421-437. <https://dx.doi.org/10.1348/135910705X53155>
- Chi, F. (1997). Reflexivity as a learning strategy in EFL. A paper presented at the First Asian Conference and the Annual international meeting of the Thai Teachers of English to Speakers of Other Language. ERIC Clearinghouse. <https://catalogue.nla.gov.au/catalog/5617377>
- Creswell, J. D., Way, B. M., Eisenberger, N. I., & Lieberman, M. D. (2007). Neural correlates of dispositional mindfulness during affect labeling. *Psychosomatic Medicine*, 69(6), 560-565. <https://doi.org/10.1097/psy.0b013e3180f6171f>
- Cutting, L. E., & Scarborough, H. S. (2006). Prediction of reading comprehension: Relative contributions of word recognition, language proficiency, and other cognitive skills can depend on how comprehension is measured. *Scientific Studies of Reading*, 10(3), 277-299.
- Dennis, D. V. (2008). Are assessment data really driving middle school reading instruction? What we can learn from one student's experience. *Journal of Adolescent and Adult Literacy*, 51, 578-587. <https://dx.doi.org/10.1598/JAAL.51.7.5>
- Dewey, J. (1997). *How we think*. Courier Corporation.
- Educational Testing Service. (2007). *TOEFL iBT performance feedback for test takers*. ETS.
- Fallah, N. (2017). Mindfulness, coping self-efficacy and foreign language anxiety: A mediation analysis. *Educational Psychology*, 37(6), 745-756. <https://dx.doi.org/10.1080/01443410.2016.1149549>
- Farran, L. K., Bingham, G. E., & Matthews, M. W. (2012). The relationship between language and reading in bilingual English-Arabic children. *Reading and Writing*, 25(9), 2153-2181. <https://dx.doi.org/10.1007/s11145-011-9352-5>
- Ghanizadeh, A., & Jahedizadeh, S. (2017). Validating the Persian version of reflective thinking questionnaire and probing Iranian university students' reflective thinking and academic achievement. *International Journal of Instruction*, 10(3), 209-226. <https://dx.doi.org/10.12973/iji.2017.10314a>
- Ghonsooly, B., & Loghmani, Z. (2012). The relationship between EFL learners' reading anxiety levels and their metacognitive reading strategy use. *International Journal of Linguistics*, 4(3), 333-351. <https://dx.doi.org/10.5296/ijl.v4i3.2021>
- Gregersen, T., & Horwitz, E. K. (2002). Language learning and perfectionism: Anxious and non-anxious language learners' reactions to their own oral performance. *The Modern Language Journal*, 86(4), 562-570. <https://dx.doi.org/10.1111/1540-4781.00161>
- Grills-Taquechel, A. E., Fletcher, J. M., Vaughn, S. R., & Stuebing, K. K. (2012). Anxiety and reading difficulties in early elementary school: evidence for unidirectional-or bi-directional relations? *Child Psychiatry & Human Development*, 43(1), 35-47. <https://dx.doi.org/10.1007/s10578-011-0246-1>

- Guimba, W. D., & Alico, J. C. (2016). Reading anxiety and comprehension of grade 8 Filipino learners. *International Journal of Human Society and Science*, 5(8), 44-59. <https://ijhss.net/index.php/ijhss/article/view/42>
- Hoover, W. A., & Gough, P. B. (1990). The simple view of reading. *Reading and Writing*, 2, 127-160. <https://dx.doi.org/10.1007/BF00401799>
- Horwitz, E. (2001). Language anxiety and achievement. *Annual Review of Applied Linguistics*, 21, 112-126. <https://doi.org/10.1017/S0267190501000071>
- Horwitz, E. K., Horwitz, M. B., & Cope, J. (1986). Foreign language classroom anxiety. *The Modern Language Journal*, 70(2), 125-132. <https://dx.doi.org/10.1111/j.1540-4781.1986.tb05256.x>
- Jonz, J., & Oller, J. W. (1994). A critical appraisal of related cloze research. *Cloze and Coherence*, 43(8), 371-407.
- Kabat-Zinn, J. (1990). *Full catastrophe living: Using the wisdom of your body and mind to face stress, pain, and illness*. Delacorte Press.
- Kember, D. (2000). Misconceptions about the learning approaches, motivation and study practices of Asian students. *Higher Education*, 40(1), 99-121. <https://dx.doi.org/10.1023/A:1004036826490>
- Kim, S. H. (2021). Mindfulness, reading anxiety, and self-efficacy of Korean EFL college students. *English Literature*, 26(2), 213-239. <https://dx.doi.org/10.46449/MJELL.2021.05.26.2.213>
- Klein-Braley, C. (1997). C-Tests in the context of reduced redundancy testing: An appraisal. *Language Testing*, 14(1), 47-84.
- Korthagen, F. A. (2001). *Linking practice and theory: The pedagogy of realistic teacher education*. Lawrence Erlbaum Associates Publishers. <https://dx.doi.org/10.4324/9781410600523>
- Langer, E. J. (2000). Mindful learning. *Current Directions in Psychological Science*, 9(6), 220-223. <https://dx.doi.org/10.1111/1467-8721.00099>
- Leung, D. Y., & Kember, D. (2003). The relationship between approaches to learning and reflection upon practice. *Educational Psychology*, 23(1), 61-71. <https://dx.doi.org/10.1080/01443410303221>
- Lin, X. F., Hwang, G. J., Wang, J., Zhou, Y., Li, W., Liu, J., & Liang, Z. M. (2022). Effects of a contextualised reflective mechanism-based augmented reality learning model on students' scientific inquiry learning performances, behavioural patterns, and higher order thinking. *Interactive Learning Environments*, 1-21. <https://dx.doi.org/10.1080/10494820.2022.2057546>
- Lusnig, L., Hofmann, M. J., & Radach, R. (2023). Mindful text comprehension: Meditation training improves reading comprehension of meditation novices. *Mindfulness*, 14(3), 708-719. <https://doi.org/10.1007/s12671-023-02079-7>
- Mace, J. (2008). *Arabic today* (2nd ed.). Edinburgh University Press. <https://dx.doi.org/10.1515/9780748635597>
- MacIntyre, P. D., & Gardner, R. C. (1991). Investigating language class anxiety using the focused essay technique. *The Modern Language Journal*, 75(3), 296-304. <https://dx.doi.org/10.1111/j.1540-4781.1991.tb05358.x>
- Mesbah, A., Zeraatpishe, M., & Baghban, Z. Z. V. (2022). The interrelationships of Iranian EFL learners' reflective thinking, ego state, and learning style. *Journal of Contemporary Language Research*, 1(1), 9-14. <https://doi.org/10.58803/jclr.v1i1.2>
- Mrazek, M. D., Franklin, M. S., Phillips, D. T., Baird, B., & Schooler, J. W. (2013). Mindfulness training improves working memory capacity and GRE performance while reducing mind wandering. *Psychological Science*, 24(5), 776-781. <https://dx.doi.org/10.1177/0956797612459659>
- McCloskey, L. E. (2015). Mindfulness as an intervention for improving academic success among students with executive functioning disorders. *Procedia – Social and Behavioral Sciences*, 174, 221-226. <https://doi.org/10.1016/j.sbspro.2015.01.650>
- Mohammadpur, B., & Ghafournia, N. (2015). An elaboration on the effect of reading anxiety on reading achievement. *English Language Teaching*, 8, 206-215. <https://dx.doi.org/10.5539/elt.v8n7p206>
- Müller, C., Otto, B., Sawitzki, V., Kanagalingam, P., Scherer, J. S., & Lindberg, S. (2021). Short breaks at school: effects of a physical activity and a mindfulness intervention on children's attention, reading comprehension, and self-esteem. *Trends in Neuroscience and Education*, 25, Article 100160. <https://doi.org/10.1016/j.tine.2021.100160>
- Namaziandost, E., Razmi, M. H., Ahmad Tilwani, S., & Pourhosein Gilakjani, A. (2022). The impact of authentic materials on reading comprehension, motivation, and anxiety among Iranian male EFL learners. *Reading & Writing Quarterly*, 38(1), 1-18. <https://doi.org/10.1080/10573569.2021.1892001>
- Newsome, S., Waldo, M., & Gruszka, C. (2012). Mindfulness group work: Preventing stress and increasing self-compassion among helping professionals in training. *The Journal for Specialists in Group Work*, 37(4), 297-311. <https://dx.doi.org/10.1080/01933922.2012.690832>
- Nidich, S., Mjasiri, S., Nidich, R., Rainforth, M., Grant, J., Valosek, & Zigler, R. (2011). Academic achievement and transcendental meditation: A study with at-risk urban middle school students. *Education*, 131, 556-564.
- Nourdad, N., & Asghari, R. (2017). The effect of reflective reading on reading comprehension of Iranian EFL learners. *International Journal of Applied Linguistics and English Literature*, 6(6), 267-273. <https://doi.org/10.7575/aiac.ijalel.v.6n.6p.267>
- Paris, S. G., Wasik, B. A., & Turner, J. C. (1991). The development of strategic readers. In R. Barr, M. L. Kamil, P. B. Mosenthal, & P. D. Pearson (Eds.), *Handbook of Reading Research* (pp. 609-640). Longman.
- Pei, X., Jin, Y., Zheng, T., & Zhao, J. (2020). Longitudinal effect of a technology-enhanced learning environment on sixth-grade students' science learning: The role of reflection. *International Journal of Science Education*, 42(2), 271-289. <https://doi.org/10.1080/09500693.2019.1710000>
- Phan, H. P. (2009). Exploring students' reflective thinking practice, deep processing strategies, effort, and achievement goal orientations. *Educational Psychology*, 29(3), 297-313. <https://doi.org/10.1080/01443410902877988>
- Pirson, M., Langer, E. J., Bodner, T., & Zilcha-Mano, S. (2012). The development and validation of the Langer mindfulness scale-enabling a socio-cognitive perspective of mindfulness in organizational contexts. *Fordham University Schools of Business Research Paper*. <https://doi.org/10.2139/ssrn.2158921>
- Plakopiti, A., & Bellou, I. (2014). Text configuration and the impact of anxiety on pupils with dyslexia. *Procedia Computer Science*, 27, 130-137. <https://dx.doi.org/10.1016/j.procs.2014.02.016>

- Regehr, C., Glancy, D., & Pitts, A. (2012). Interventions to reduce stress in university students: A review and meta-analysis. *Journal of Affective Disorders, 148*(1), 1-11.
- Rodríguez, M. X., & Abreu, O. (2003). The stability of general foreign language classroom anxiety across English and French. *The Modern Language Journal, 87*(3), 365-374.
- Rosaen, C., & Benn, R. (2006). The experience of transcendental meditation in middle school students: A qualitative report. *The Journal of Science and Healing, 2*(1), 422-425.
- Rosenstreich, E., & Margalit, M. (2015). Loneliness, mindfulness, and academic achievements: A moderation effect among first-year college students. *The Open Psychology Journal, 8*(1), 138-145. <https://doi.org/10.2174/1874350101508010138>
- Runco, M. A. (2014). *Creativity: Theories and themes. Research, development, and practice*. Elsevier.
- Saito, Y., Garza, T. J., & Horwitz, E. K. (1999). Foreign language reading anxiety. *The Modern Language Journal, 83*(2), 202-218.
- Sakai, H., & Kikuchi, K. (2009). An analysis of demotivators in the EFL classroom. *System, 37*(1), 57-69. <https://dx.doi.org/10.1016/j.system.2008.09.005>
- Sobhanifar, H., & Ranjbaran, F. (2023). The impact of listening and reading skills transfer on speaking accuracy, fluency and complexity of Iranian EFL learners. *Journal of Contemporary Language Research, 2*(2), 109-117.
- Suleimenova, Z. (2013). Speaking anxiety in a foreign language classroom in Kazakhstan. *Procedia – Social and Behavioral Sciences, 93*, 1860-1868.
- Tasan, M., Mede, E., & Sadeghi, K. (2021). The effect of pranayamic breathing as a positive psychology exercise on foreign language learning anxiety and test anxiety among language learners at tertiary level. *Frontiers in Psychology, 3*(9), 40-63.
- Tawalbeh, I. Z. (2013). The effect of colloquial Jordanian Arabic on learning the English definite article and negation. *English Language Teaching, 6*(8), 95-104. <https://doi.org/10.5539/elt.v6n8p95>
- Thompson, N. (2011). *Promoting equality: Working with diversity and difference*. Bloomsbury Publishing.
- Tianjian, W. (2010). Speaking anxiety: More of a function of personality than language achievement. *Chinese Journal of Applied Linguistics, 33*(5), 95-109.
- Tarrasch, R., Berman, Z., & Friedmann, N. (2016). Mindful reading: Mindfulness meditation helps keep readers with dyslexia and ADHD on the lexical track. *Frontiers in Psychology, 7*, Article 578. <https://dx.doi.org/10.3389/fpsyg.2016.00578>
- Verpoorten, D., Westera, W., & Specht, M. (2011). Reflection amplifiers in online courses: A classification framework. *Journal of Interactive Learning Research, 22*(2), 167-190.
- Wirth, K., & Aziz, F. (2009). *Better learning through better reading and reflecting*. Associated Colleges of the Midwest. [http://serc.carleton.edu/acm\\_teagle/projects/wirth.html](http://serc.carleton.edu/acm_teagle/projects/wirth.html)
- Yanchar, S. C., Slife, B. D., & Warne, R. (2008). Critical thinking as disciplinary practice. *Review of General Psychology, 12*(3), 265-281. <https://dx.doi.org/10.1037/1089-2680.12.3.265>
- Yousef, H., Karimi, L., & Janfeshan, K. (2014). The relationship between cultural background and reading comprehension. *Theory and Practice in Language Studies, 4*(4), 707-714. <https://doi.org/10.4304/tpls.4.4.707-714>
- Zeidan, F., Johnson, S. K., Diamond, B. J., David, Z., & Goolkasian, P. (2010). Mindfulness meditation improves cognition: Evidence of brief mental training. *Consciousness and Cognition, 19*(2), 597-605. <https://dx.doi.org/10.1016/j.concog.2010.03.014>