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Research Paper

Determining the Psychometric Properties of the Persian Version of Self-Critical Rumination Among Iranian EFL Students and Examining its Relationship with Mindfulness

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Abstract
The purpose of this study was to determine the psychometric properties of a newly-designed scale for appraising Iranian EFL students' self-critical rumination and to investigate its nexus with student mindfulness. To this aim, 507 English as Foreign Language (EFL) students, studying at a university and a number of language institutes were required to complete the Persian translation of two questionnaires: L2 Self-Critical Rumination Questionnaire (SCRQ) consisting of two components of negative metacognition and positive metacognition as well as the Langer Mindfulness Scale (LMS) comprising three facets of novelty seeking, novelty production, and engagement. First, Confirmatory Factor Analysis (CFA) was used to substantiate the construct validity of the SCRQ. Then, Structural Equation Modeling (SEM) was run to find the association between SCR and student mindfulness to verify the concurrent validity of the scale. The results of the study indicated that SCRQ is a valid and reliable instrument measuring EFL students' rumination. It was also found that there is a negative significant

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association between the two constructs. Finally, the results were discussed in terms of the context of language education.

***Keywords**:* Confirmatory Factor Analysis, EFL Students; Mindfulness, Self-Critical Rumination

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1. Introduction

Self-reflection is an indispensable part of human nature (Kühn et al., 2012). It implicates engaging in our thinking, emotions, and experiences. When this type of self-reflection turns into a chronic sequence of thoughts on a communal issue, it is considered as rumination. Rumination as a dysfunction affective coping strategy (Brewin & Holmes, 2003; Smith & Alloy, 2009) can be generally theorized by means of a maladaptive form of interfering and recurring deliberation about a stressful situation (Moreira & Maia, 2018). It can be regarded as an refraining approach that "a person perseverates on the causes, consequences, and meaning of the trauma without fully processing the traumatic memory itself" Michael et al., 2005, p. 614). Ruminative thinking compels individuals to mull over the why queries or regretting scenarios rather than the realistic confrontation with the problem and its accompanying negative emotion (Michael et al., 2007). Rumination, as an inclination to involve in repetitive, persistent, uncontrollable and intrusive thinking, is a cognitive practice which tends to aggravate and sustain depressive and stress disorders (Roley et al., 2015).

The form of rumination that revolves around internalizing self-critical thoughts and is often tied to an individual's assessment of their own flaws and deficiencies is referred to as self-critical rumination (Kolubinski et al., 2017). Research denotes that perception of ourselves may stem from our upbringing and attachment figures in childhood. Improving one's self-image

as deserving of love and attention is seen as a way to combat self-criticism. Self-critical rumination is viewed as an emotion-focused coping strategy that centers on negative self-assessment and self-judgment. It involves harboring resentment towards oneself for not meeting personal ideals and often arises in cases of inefficiency or loss of status (Smart et al., 2016).

Notwithstanding the fact that self-critical rumination might be prevalent in many of our life circumstances, it seems it remained uncharted realm of research, in particular in educational setting and in influencing academic functioning. It can be due to the dearth of a valid tool to measure self-critical rumination until recently. In 2007, Kolubinski et al. designed a scale for assessing the construct for general everyday domains, entitled Self-Critical Rumination Scale (SCRS).

Despite the promising results of the reliability and validity of SCRS, further research is required to substantiate and verify these indices, in particular in specific educational domains and in other contexts other than the original one. To the researchers' best knowledge, the psychometric properties of SCRS have not been explored in EFL education and in Iranian context. The objective of the present study was to take the initiative in adjusting the original SCRS for EFL education in Iranian context to consolidate the validity and reliability robustness of the instrument and pave the way for conducting studies on Iranian EFL learners' self-critical rumination. In so doing, having modified the SCRS according to EFL education considerations, we sought to determine the psychometric properties of the modified version, called L2 self-critical rumination scale. We also aimed at verifying the criterion-related validity of the scale by examining its association with a related factor, i.e., mindfulness.

2. Literature Review

In recent years, the concept of rumination has attracted researchers' attention and has been explored from different angles via evaluating a number of psychological variables. A study, for instance, aimed at examining the association between avoidance and anxiety as two attachment orientations and perceived anxiety as mediated by self-critical rumination. The researchers were also concerned with validating the Portuguese form of the Self-Critical Rumination Scale (SCRS). The study designated that perceived stress and attachment anxiety are associated. Furthermore, confirmatory factor analysis proved adequate construct validity and internal consistency of SCRS (Moreira & Maia, 2018).

In a similar vein, Pössel et al. (2018) examined the association between Christians' stress, private prayer, and depression through rumination mediation. The empirical evidence of their study proved the association of variables depending on the prayer type (e.g., colloquial, meditative, petitionary, and ritual). In particular, no prayer type was related to rumination regardless of the individuals' stress.

Another study examined the mediating role of autobiographical memory between depressed patients' poor social problem-solving and their rumination. Autobiographical Memory Test (AMT) to evaluate their memory capacity in recalling a personal memory, Means–Ends Problem-Solving Task (MEPS) to assess problem-solving tasks, Beck Depression Inventory (BDI) to test depressive symptoms, Letter–Number Sequencing (LNS) to evaluate working memory capacity, and Ruminative Response Scale (RRS) along with Rumination on Sadness Scale (RSS) to measure participants' level of rumination were used in this study. The findings supported significant associations among the proposed variables (Raes et al., 2005).

In a similar fashion, Kuyken et al. (2006) considered the relationship between adolescents' rumination as a vulnerable factor and depression. It was substantiated that participants who are at risk of depression experience more rumination (Kuyken et al., 2006). Other studies explored the concept of rumination in via analyzing brain regions (e.g., Andersen et al., 2009; Hooker et al, 2010; Jones et al., 2017; Kühn et al., 2012; Peters et al., 2016).

Furthermore, rumination has been found to be highly associated with stress (Moreira & Maia, 2018) and self-criticism and self-critical rumination are associated with stress disorder (e.g., Clohessy & Ehlers, 1999; Harman & Lee, 2010), depression (e.g., Birrer & Michael, 2011; Huffziger et al., 2009; Lavender & Watkins, 2004; Olatunji et al., 2013; Roley et al., 2015; Wilkinson et al., 2013), eating disorders (Fennig et al., 2008), sleeping disorders (e.g., Cox et al., 2018; Cox et al., 2016; Pillai et al.,, 2014; Takano et al., 2012; Zoccola et al., 2010) low mindfulness (Peters et al., 2016), perfectionism (Egan et al., 2014; Flett & Hewitt, 2002; Frost et al., 1990), social phobia and a number of disorders (Ehring & Watkins, 2008), suicide risk and ideation (Holdaway et al., 2018), and social anxiety (Iancu et al., 2015).

Several forms of rumination have been identified including anxious, depressive, sad, angry, and post-event rumination, with specific sets of characteristics and symptoms. Self-critical rumination as an emotion-focused coping strategy and a particular sort of rumination highlighting the sphere of self-critical thinking, such as one's failures and limitations (Smar et al., 2016, as cited in Moreira & Maia, 2018) has been recently introduced. The detrimental role of this psychological process entails many undesirable consequences such as perceived stress (Hu et al., 2014; Moreira & Maia, 2018; Willis & Burnett, 2016), health nervousness (Marcus et al., 2008),

depressive disorders (Nolen-Hoeksema, 2000), and neuroticism (Muris et al., 2005).

Another attribute which might have close association with rumination is individuals' tendency for forgiveness and forgiveness. It is maintained that unforgiveness often leads to rumination (Worthington &Wade, 1999). When someone holds onto feelings of resentment, anger, or bitterness towards themselves or others, they may find themselves constantly replaying negative thoughts and emotions in their mind. This rumination can become a cycle where the individual fixates on past hurts, grievances, or mistakes, which can further fuel feelings of unforgiveness (Worthington &Wade, 1999).

On the other hand, rumination can prolong feelings of unforgiveness by keeping negative emotions alive and preventing the healing process from taking place (Worthington &Wade, 1999). It can also lead to increased stress, anxiety, and depression. Breaking free from this cycle involves practicing self-compassion, mindfulness, and forgiveness towards oneself and others.

So, it seems cognitive factors such as mindfulness can help individuals diminish or even prevent rumination occurrence and development. In this study, mindfulness is considered as a cognitive coping mechanism which has a reverse relationship with rumination.

Mindfulness, as the second variable considered in the present study, has received accelerated interest from numerous sectors of society (Lin et al., 2018; Van Dam et al., 2018) and its positive effects on academic performance have been reinforced by many studies (e.g., Boyce, 2011; Franco et al., 2011; Teodorczuk, 2013). Mindfulness, as a learnable capacity, is the essential attentional attitude towards Buddhist meditative practice (Jon Kabat-Zinn, 2003). The theoretical foundation of mindfulness is based on being aware of the current situation while maintaining an open attitude towards different perspectives and environments (Carson & Langer, 2006).

The mindfulness-based stress reduction (MBSR) training was first introduced in 1979, when mindfulness reached the Western culture by Jon Kabat-Zinn (Ghanizadeh & Jahedizadeh, 2019). In this regard, the psychological state of mindfulness varies both at intrapersonal and interpersonal levels (Dane, 2011; Dane & Brummel, 2013). The concept has been found to have positive effects on both mental and physical disorders (e.g., Brown et al., 2007; Grossman et al., 2004; Keng 2011; Prazak et al., 2012). Besides, mindfulness has been found to improve a plethora of cognitive, metacognitive, motivational, and emotional attributes, including sustained attention (e.g., Brown & Ryan, 2003; Chiesa et al., 2011; Hölzel et al., 2011; Jha et al., 2007; Bajestnai et al., 2024; Tang et al., 2015), positive orientation (Moghadam et al., 2021), higher-order thinking skills (Ghanizadeh et al., 2020), burnout depletion (Moghadam et al., 2020).

3. Rationale

As evident from the existing literature, all rumination studies have been conducted in general education or among clinical cases. As far as we know, the idea of rumination has not been explored in the context of learning a second or foreign language. On the one hand, the significant association between depression and lack of ability to solve social problems has been supported (e.g., Marx et al.,1992). The relationship between rumination and poor problem solving is also undeniable (e.g., Lyubomirsky et al., 1999; Raes et al., 2005; Watkins & Baracaia, 2002). As Papageorgiou and Wells (2004) have stated, experiencing uncontrollable rumination results in more fuel depressive feelings. On the other hand, language learning involves many problem solving tasks in order to master essential components of the language.

Despite the dearth of research on L2 rumination, the negative role of anxiety in second/foreign language context has been demonstrated in advance

(e.g., Hashemi, 2011; Tanveer, 2007). Indeed, the nature of language as an avenue of interpersonal interaction is prone to anxiety (Alqahtani & Al-enzi, 2011) which is completely different from any other daily activities. Therefore, exploring EFL students' self-critical rumination as a sort of unsuccessful coping strategies seems crucial, since the way we treat and think about ourselves may affect our learning. Furthermore, due to the fact that mindfulness highlights the conscious alertness of the present moment (Glomb et al., 2011) and has an intimate connection with sustained attention and the resultant academic success (Bajestani et al., 2024; Ghanizadeh et al., 2024; Keng et al., 2011; Vago & D.A., 2012), and considering uncontrollability of ruminative thinking (Keng et al., 2011; Raes & Williams, 2010), in order to assess the concurrent validity of the newly-designed instrument it seems rational to investigate the relationship between mindfulness and self-critical rumination in an EFL context. Hence, the present study aimed at validating the Persian version of SCQR among EFL students and then finding the association between L2 rumination and L2 mindfulness.

4. Methodology

4.1. Participants

Convenience sampling was used to select 558 participants whose age ranged from 18 to 57 (mean = 32). They were EFL students studying English at a university and a number of language institutes in Mashhad. Out of 558 distributed questionnaires, 507 were retuned and included in the data analysis. The following table presents a sketch of the participants' demographic information.

Table 1.

Participants' Demographic Information

Demographics	Frequency	Demographics	Frequency
Educational level		Teaching experience	

BA or BA student	273	Intermediate	125
MA or MA student	175	Upper-Intermediate	285
Diploma	41	Advanced	131
Missing	18	16 and above	32
Gender		Missing	8
Male	159	Age	
Female	331	18-25	197
Missing	17	26-30	229
Educational context		31-35	45
University	242	36 and above	12
Private school	257	Missing	15
Missing	8		

4.2. Instrumentation

4.2.1. Self-Critical Rumination Questionnaire (SCRQ)

In order to determine learners' self-critical rumination, the Self-Critical Rumination Questionnaire (Kolubinski et al., 2017) was adapted for EFL domains and wan then translated to Persian. The scale comprises 15 items measuring positive and negative metacognitions. Students answered the questionnaire on a four Likert type scale.

The two systems of SCR, positive and negative, are consistent with the two sides of metacognition (Wells, 2013). Positive dimension focuses on the effectiveness of ruminating as an approach of improving functioning and motives (e.g., Reviewing past mistakes and failures I had in language learning assists in better understanding of the events), whereas negative dimension involves beliefs that ruminating is not out of individual's control and is inevitable (e.g., it is difficult for me to put an end on thinking about my prior faults and failures in the process of language learning one I have started (Wells, 2009).

In reproducing the items of the questionnaire, the researchers tried to modify the sub-constructs of self-critical rumination to make them appropriate for language learning. For instance, for an item concerning individuals' past failures, the type of failure was limited to students' inaccuracies during the process of language learning. Finally, to check the content validity of the instrument, think-aloud method, as a technique to monitor the readability and comprehensibility of the items as well as readers' understanding (Dornyei, 2007), was used. To do so, three English language learners were required to talk about the content of the items while responding to them which resulted in some modifications and rewording of some items (see Appendix for the scale).

4.2.2. Langer Mindfulness Scale (LMS)

To assess students' mindfulness, the Langer Mindfulness Scale (LMS14) validated by Pirson and Langer (2015) was utilized. This tool includes 14 items that measure three dimensions of mindfulness: novelty seeking, novelty production, and engagement. The reliability of the questionnaire, determined through Cronbach's alpha, was 0.77. Example items for each subscale are: for novelty seeking, novelty seeking: I try to devise novel methods of my activities; novelty production: creating novel and productive ideas are easy for me; engagement: I welcome if I am challenged in various mental ways.

4.3. Procedure

A total of 507 EFL students from a university and a number of private language institutes participated in this study, at two intervals in February and June 2021. The Langer Mindfulness Scale and Self-Critical Rumination Questionnaire were distributed among them. Given the large of bulk of data required for validation process, the data collection took place at two intervals and in two forms of print version and online format (via google form). Before asking the participants to fill in the questionnaires, the researcher reminded

the importance of the study and also guaranteed that participants' answers never be disclosed.

4.4. Data analysis

The data analysis procedure was carried out in two stages. First to validate the Persian version of Self-Critical Rumination Questionnaire (SCRQ), LISREL 8.50 statistical package was used to test the CFA model. Then in order to find the association between SCR and mindfulness, Mplus software was utilized to run the SEM.

5. Results

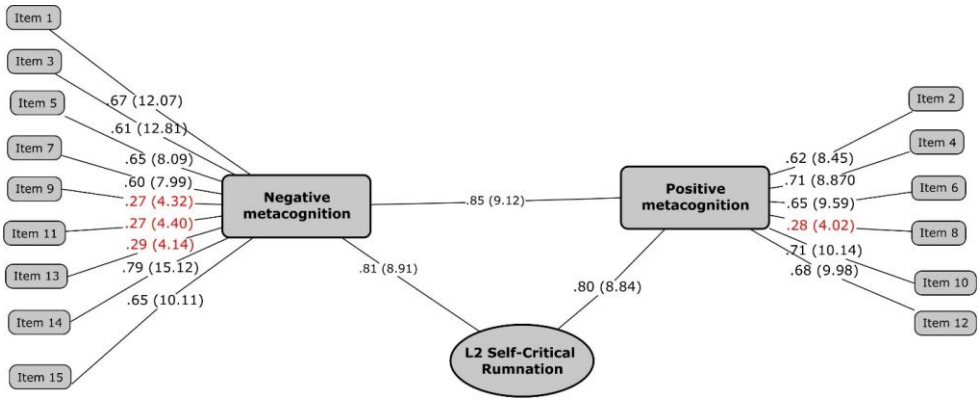
As stated earlier, the adapted Self-Critical Rumination Questionnaire (SCRQ) was translated to Persian by the researchers. It was then back translated and checked by two translation experts. Having accommodated their views, the translated scale was rechecked by two educationalists and a psychologist. It was refined in the light of their comments and amendments. The scale comprised two factors with 15 items: negative metacognition (NM) and positive metacognition (PM). NM comprised 9 items (1-3-5-7-9-11-13-14-15), and PM consisted of 6 items (2-4-6-8-10-12). In order to validate the SCRQ, a model was generated based on the factors and comprising items. The proposed model was tested via confirmatory factor analysis (CFA) using the LISREL 8.50 statistical package.

The initial structural model is presented in Figure 1. The chi-square statistic was significant ($\chi 2= 512.42$, $p < .05$) and the ratio of $\chi 2/df$ was 2.84, demonstrating the rejection of the model. The RMSEA, CFI, NFI, and GFI values were found to be .09, .86, .85, and .87, respectively which were slightly less than the satisfactory indices. The indices on the lines designate the standardized estimates and t-values, respectively. As indicated by the

Figure, four items (8, 9, 11, & 13) had a standardized estimate lower than .30, which is an indication of low factor loading.

Figure 1.

The Graphic Depiction of the Two Factors of SCR and the Corresponding Items



$\chi 2$= 512.42, *df*= 180, RMSEA=. 09, GFI= .87, CFI= .86, NFI= .85

Table 2 indicates the standardized loading of each factor.

Table 2.

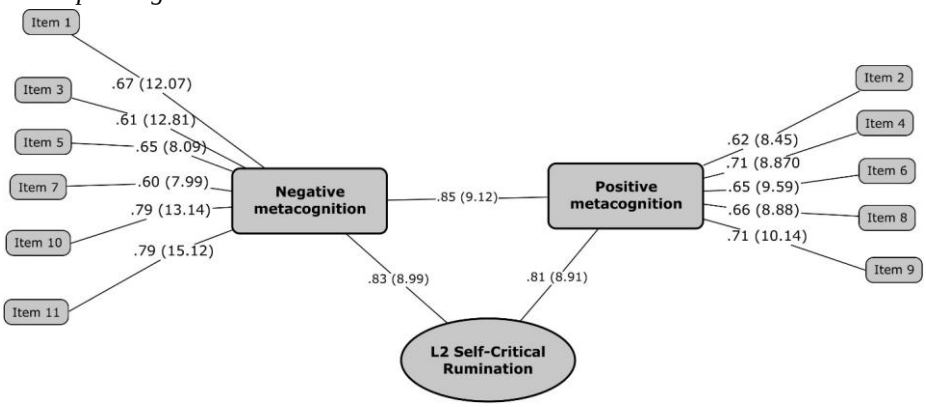
Summary of the Standardized Loadings of SCR

Observed Variable	Latent variable	□	Observed variable	Latent variable	□
1	NM	.67	2	PM	.62
3	NM	.61	4	PM	.71
5	NM	.65	6	PM	.65
7	NM	.60	8	PM	.28
9	NM	.27	10	PM	.71
11	NM	.27	12	PM	.68
13	NM	.29			
14	NM	.79			
15	NM	.65			

These four items (8, 9, 11, 13) were discarded. Accordingly, this resulted in a refined version of the scale comprising 11 items and two factors (NM: 6 items, PM: 5 items). The resultant model was tested again to ensure the model improvement, as shown in Figure 2. According to the fit values ($\chi 2$= 604.21, $\chi 2/df$= 2.00, GFI= .92, CFI= .91, NFI= .90, and RMSEA=. 06), the model was acceptable.

Figure 2.

The Graphic Illustration of the Two Factors of the Revised SCR and the Corresponding Items



$\chi 2$= 604.21, *df*= 301, RMSEA=. 06, GFI= .92, CFI= .91, NFI= .90

The total Cronbach's alpha estimate was.72, for NM, .78, and for PM was .62. The correlations among NM, PM, and SCR are presented in Table 3. The sub-factors highly correlated with each other and with the total SCR: NP & PM (r =-0.56, p< 0.05), NP & SCR (r =0.78, p< 0.05), PM & SCR (r =0.61, p< 0.05).

Table 3.

The Correlation Coefficients Among Factors of SCR

	1	2	3	Mean	SD
1. NM	1.00			22.66	2.96
2. PM	-.56**	1.00		13.82	2.38
3. SCR	.78**	.61**	1.00	36.48	3.24

** Correlation is significant at the 0.05 level

In order to evaluate the concurrent validity of the newly designed and validated SCRQ, its association with student mindfulness was assessed via Structural Equation Modeling in Mplus. Table 4 presents descriptive statistics of SCR and mindfulness among the participants. In this part, NM stands for negative metacognition, PM for positive metacognition, NS for novelty seeking, NP for novelty production, and E for engagement.

Table 4.

Descriptive Statistics of SCR, Mindfulness and their Subscales

	N	Minimum	Maximum	Mean	Std. Deviation
NM	507	12.00	30.00	22.66	2.96
PM	507	5.00	19.00	13.82	2.36
SCR	507	26.00	45.00	36.48	3.24
NS	507	8.00	25.00	17.33	3.64
NP	507	6.00	25.00	15.86	3.01
E	507	6.00	20.00	13.65	2.50
Mindfulness	507	33.00	67.00	46.85	6.49
Valid N (listwise)	507				

The mean score for SCR is 36.48 and the maximum score is 45.00. For mindfulness, the mean is 46.85 and the maximum is 67.00. NM (*M*=22.66, *SD*=2.96) obtained higher mean score than PM (*M*=13.82, *SD*=2.36), and for mindfulness NS received the highest mean (*M*=17.33, *SD*=3.64).

The reliability estimate of the mindfulness variable computed via Cronbach's alpha was found to be .81. Before running the model in Mplus to explore the relationship between SCR and mindfulness, the factor loadings of the two variables were investigated and their suitability for the subsequent factor loadings exceeding 0.3 has been confirmed. SCR with two and mindfulness with three sub-factors have been defined. The results are shown in Table 5.

Table 5.

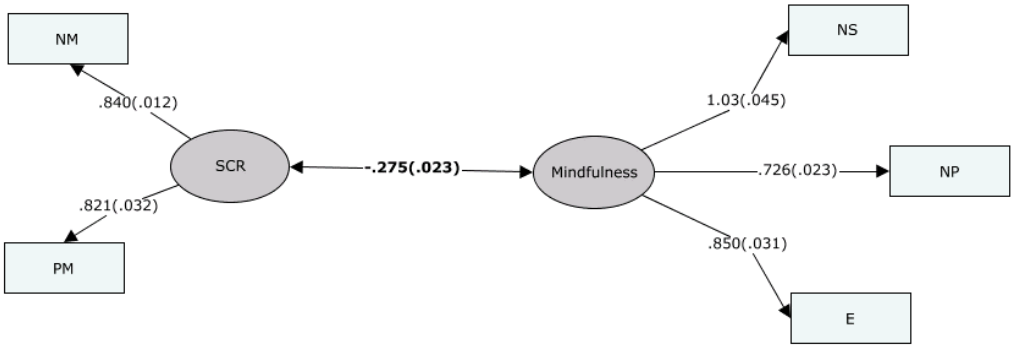
Factor Loadings of SCR, Mindfulness and their Subscales

Variables	Sub-factors	Standardized Factor Loadings	Standard Deviations	Test Statistics	P-values
SCR	NM	0.90	0.03	25.06	0
	PM	1.0	0.04	25.79	0
Mindfulness	NS	0.86	0.01	48.55	0
	NP	0.89	0.01	53.95	0
	E	0.80	0.02	35.38	0

The structural model is presented in Figure 3. As can be seen, the chi-square (1.23), the RMSEA (0.07), SRMR=0.009, and the CFI=.96, GFI= .94, AGFI=0.92, and TLI=0.098 all reached the acceptable fit thresholds. The model also indicated a significant association between SCR and mindfulness (p-value<0.05).

Figure 3.

The Graphic Representation of the Association Between SCR and



Mindfulness

Table 7.

The Correlation Coefficients between SCR and Mindfulness and their Subfactors

	1	2	3	4	5	6	7
1.Negative metacognition	1						
2.Positive metacognition	-.27**	1					
3.Novelty seeking	.04**	.28**	1				
4.Novelty production	.03**	.04**	.45**	1			
5.Engagement	.11**	.11**	.10**	.11**	1		
6.Self-critical rumination	.71**	.48**	.24**	.06**	.19**	1	
7.Mindfulness	.08**	.22**	.81**	.76**	.49**	-.24**	1

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

6. Discussion

This study aimed at designing and validating a scale to evaluate language learners' level of self-critical rumination based on the existing SCRQ measuring the construct regardless of any discipline or context. To this aim, the items were modified to fit EFL students' rumination. The results of confirmatory factor analysis revealed that except for four items, the Persian version of SCRQ is a valid and reliable tool for assessing the two aspects of self-critical rumination; namely, negative metacognition and positive metacognition.

Regarding the second purpose of the study, finding the nexus between SCR and a tested verified variable to reach concurrent validity of the scale, the results revealed associations between high SCR with low mindfulness. In other words, a significant negative correlation was found between the two constructs. This is in line with Raes and Williams (2010)'s study which investigated the association of the two variables via a cross-sectional design

among psychology students and found that mindfulness is significantly negatively correlated with rumination. Previous reports have also indicated the same findings (e.g., Brown & Ryan, 2003). According to Keng et al. (2011), the two features of mindfulness (consciousness and acknowledging moment-to-moment experience) had a negative association with psychological distress and its forms such as anger, fear, anxiety, and rumination (Shapiro et al., 2006).

In a similar vein, Lykins and Baer (2009) probed the effect of mindfulness meditation on psychological and mental well-being. The results of their study revealed that meditators exhibited lower levels of rumination. Mindfulness has also been found to increase the metacognitive awareness (Ghanizadeh et al., 2024; Hargus et al., 2010) which in turn reduces the amount of rumination (Ghanizadeh et al., 2024; Jain et al., 2007).

An important point to be taken into account is that the model of self-critical rumination inspired the present study rests on both positive and negative metacognitions. So, nurturing the positive aspect of self-critical rumination should be facilitated for the students through scaffolding appropriate instruction and strategies. In a recent study by Ghanizadeh et al. (2024), it was reported that regulating and fostering students' metacognitive awareness develops positive self-critical rumination while diminishing the negative aspect of rumination.

Two significant limitations of the present study can be stated. First, the sample comprised undergraduate students that may threaten the external validity (generalizability) of the results. Second, the data were collected by self-report questionnaires; thus future studies can use other techniques for data collection to examine SCR and mindfulness. Hence, the results await replication by the use of experimental or longitudinal designs. Notwithstanding these limitations, the present study provided first evidence

considering self-critical rumination in an EFL context and exploring the negative relationship between SCR and student mindfulness. Besides, this study tried to go beyond a correlational analysis that does not show the causal associations among the constructs (Raes & Williams, 2010). As such, our findings further accentuate the theoretical model underlying L2 rumination and mindfulness in an EFL context.

7. Conclusions & Implications

This study validated a scale for gauging EFL students' self-critical rumination. Overall, knowledge about students' rumination can empower educators to support their students' mental health, well-being, and academic success by creating a more engaging and inclusive learning environment. Accordingly, determining students' self-critical rumination might help teachers anticipate their students' effective functioning, including their academic achievement and their emotional and motivational status. The significance of the present study lies in that it took initiative to validate a scale for assessing L2 self-critical rumination in Iranian context. It is undeniable that EFL learners normally are faced with a host of challenges in the process of English learning and are prone to different stressors arising from high rate of communication required in a different language and culture, inadequate input, demotivation, incongruence between teaching and learning styles. All these stressors might prompt ruminating over one's own flaws and inadequacies.

The major implication of the present study is that it can offer the prospect of measuring students' rumination. Understanding students' rumination can be beneficial for educators and teachers in several ways:

–Identifying students at risk: Educators who are aware of signs of rumination in their students can better identify those who may be struggling with

unresolved emotions, stress, or negative thought patterns. This awareness can help educators provide targeted support and interventions to help these students cope effectively.

–Promoting mental health and well-being: By recognizing rumination as a potential barrier to students' mental health and well-being, educators can implement strategies to promote positive coping mechanisms, resilience, and emotional regulation skills. This can contribute to creating a more supportive and nurturing learning environment.

–Enhancing academic performance: Rumination can negatively impact students' ability to concentrate, problem-solve, and retain information. Educators who understand the effects of rumination can implement strategies to help students manage their emotions, reduce stress, and improve focus, ultimately enhancing academic performance.

–Fostering empathy and understanding: Educators who are knowledgeable about students' rumination can approach their interactions with empathy and understanding. By acknowledging and validating students' emotions, educators can create a safe space for students to express themselves, seek help, and work through their challenges.

–Teaching coping skills: Educators can incorporate lessons on mindfulness, stress coping strategies, emotional regulation, and problem-solving skills into their curriculum to help students develop healthy coping mechanisms and resilience in the face of rumination and negative emotions.

–Encouraging and highlighting the positive side of self-critical rumination: By involving students’ in metacognitive awareness of their thinking, feeling, and acting, educators can take advantage of the positive metacognition underlying any ruminative behavior.

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Appendix: L2 Self-Critical Rumination

		1	2	3	4
1	I find it hard to focus on anything else when I think about my past mistakes and failures in the process of language learning.				
2	I motivate myself to try harder to succeed in language learning by dwelling on stupid things I did in the past.				
3	Thinking about what I did wrong in the past while learning the language negatively affects my performance.				
4	I need to repeatedly think about things that I got wrong in order to avoid making mistakes in the following experiences of language learning.				
5	Dwelling on my past mistakes in language learning represents a weakness of character.				
6	Repeatedly reviewing how I should have acted differently in the past in different situations of language learning shows that I care about the outcome.				
7	I will get depressed if I don't stop reviewing my self-critical thoughts in the experiences of language learning.				
8	Reviewing past mistakes and failures I had in language learning can help me to understand things better.				
9	Thinking about my self-worth (or lack of) helps me stay focused in the present.				
10	I find it hard to stop thinking about my past mistakes and failures in the process of language learning once I have started.				
11	I tend to treat thoughts about my worth as facts – If I think them, they must be true.				