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Exploring the Relationship Between Deliberate Rumination and College Students Creativity: The Mediating Role of Self-Efficacy

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ABSTRACT

Purpose. Deliberate Rumination is defined as a contemplation of emotions and a conscious attempt to understand events and their outcomes, often associated with creativity and self-efficacy of individuals. This study examined the correlation between Deliberated Rumination and Creativity among higher education learners, with a particular concentration on the facilitating role of Self-efficacy. **Methodology**. A quantitative approach was adopted to study a sample of 881 Chinese undergraduate students, who participated in a survey comprising items related to Deliberated Rumination, Creativity and Self-efficacy. These students faced daily pressures in college, so they were the most suitable sample. The respondents' data was assessed through Event Related Rumination Inventory Deliberated Rumination Subscale (ERRI-DR) to measure Deliberated Rumination, Runco Ideational Behaviour Scale (RIBS) to assess creativity, and General Self-Efficacy Scale (GSES) to assess self-efficacy. **Findings.** Empirical evidence revealed a clear correlation between Deliberate Rumination and Creativity. Furthermore, a substantial correlation was found between Deliberate Rumination and Self-efficacy, which is directly associated with creativity. Empirical data indicates that Self-efficacy plays an influential part in the connection among Deliberate Rumination with Creativity. **Implication for research and practice**. Undoubtedly, Deliberate Rumination seems to be a dependable measure of creativity, with Self-efficacy acting as a link between the two, emphasizing the ability of deliberate thought as a practical resource in fostering creativity in the presence of daily scholastic demands.

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Introduction

Present-day university students regard creativity as a fundamental skill (Stolz et al., 2022). Cognitive creativity, as a constructive cognitive activity, significantly influences the academic and everyday experiences of university students (Du et al., 2021). However, the process of adjusting to college life poses challenges for students such as academic expectations and essential social adjustments, sometimes leading to heightened levels of anxiety and low mood (Chen & Lucock, 2022). These pressures can hinder students' creative abilities and academic focus. Within this context, the psychological concepts of Deliberated Rumination and Self-efficacy are regarded to be crucial. Moreover, the cognitive mechanism of Deliberated Rumination has the potential to augment individual creativity. Scholars recognize Deliberated Rumination as a cognitive process that entails engaging in self-reflective thinking to cope with stress, convert negative emotions into problem-solving skills and promote creativity (Du et al., 2021; Vahle-Hinz et al., 2017). Furthermore, self-efficacy denotes the confidence in someone's capacity to take on activities with surmount obstacles, is linked with stress resilience and psychological well-being (Xu et al., 2022).

Therefore, it is logical to hypothesize a relationship between Deliberated Rumination and creativity. Moreover, the creative process is commonly considered like the key element in clarifying the mechanism of creativity. Since Deliberated Rumination is a crucial cognitive process helpful in fostering Creativity, the phenomenon is strongly linked to the process of creativity and entails persons participating in repetitive rumination. Empirical research has shown that engaging in ruminative practices can enhance creative interests by fostering cognitive reactivity, which in turn facilitates the generation of more valuable creative ideas (Forgeard et al., 2020). Hence, it is imperative to investigate the potential of Deliberated Rumination in fostering the generation of creativity among university students. The primary goal of this study is to investigate the correlation between Deliberated Rumination and Creativity among higher education learners, with a particular concentration on analyzing the facilitating role of Self-efficacy. A thorough examination of these interconnected factors could yield a significant insight into enhancing creativity and psychological resilience in college students.

Literature Review

Creativity

Creativity is the cognitive and behavioral mechanism that results in the generation of meaningful and unique ideas, products, or services (Guilford, 1950). Through the accumulation of extensive research, experts in many fields such as social psychology, educational psychology, organizational relationships, and mental health have continuously improved the conceptualization and definition of creativity. Previous studies have provided empirical evidence that cognitive processes and creative problem-solving abilities (Amabile, 2018) are dependable predictors and explanatory variables for creativity. Runco, Plucker and Lim (2001) emphasizes that creativity, which involves the process of producing ideas, should be an inherent part of an individual's daily existence, rather than being confined to academic success, artistic endeavors, invention, and innovative activities. The phenomenon of creativity can be considered as

an intellectual procedure, in which cognitive ability is proposed as essential elements of this process (Runco, 1986).

Deliberated Rumination

The cognitive process of rumination is defined as the continuous contemplation of emotions and their emotional consequences. The occurrences can be classified as two types: intrusive and intentional manifestations (Cann et al., 2011). Intrusive rumination (IR) refers to the automatic and persistent thoughts that arise from previous events, frequently resulting in emotional pain. Conversely, Deliberated Rumination is a conscious and intentional attempt to understand events and their outcomes, associated with introspective thinking and proactive resolution of problems (Cann et al., 2011). In stressful circumstances, Deliberated Rumination is essential for successfully transforming experiences. Furthermore, it is strongly linked to cognitive strategies that target the identification of solutions (Watkins, 2008; Zeng et al., 2021). The psychological processing theory posits that a person's reaction to adversity, whether it is beneficial or harmful, is contingent upon their cognitive processing style. Hence, the process of Deliberated Rumination is crucial in facilitating positive responses to challenging situations.

Previous conceptions of creativity proposed a significant association between Deliberated Rumination and creativity. In 1926, Wallas proposed a conceptualization of creativity as a cognitive process consisting of four clearly defined stages: preparation, incubation, illumination, and verification. These stages are often repeated and occur in an indeterminate serial order. Creative thinking can be understood as an intellectual procedure that entails the identification and reassessment of requirements. Furthermore, it is crucial that the most efficient creative activity occurs within the framework of a very difficult and demanding problem. If such is the situation, the individual is thus motivated to independently complete the activity or address the recognized problem (Amabile, 2018). Innovative thinking is more likely to emerge in challenging situations as barriers may naturally drive the person to tackle the given challenge using various methods (Amabile & Pratt, 2016).

Self-Efficacy

Self-efficacy, as defined by Bandura's (1977) theory concerning social mental processes, refers to an individual's personal evaluation of their ability to successfully influence both internal and external situations. The perspective being examined is associated with the concept of locus of control in social psychology. This concept refers to a cognitive orientation or a collection of ideas regarding the connection between an individual's given efforts and the resulting reward or outcome. In essence, confidence is a psychological characteristic that is linked to an individual's development in many areas. Considerable levels of self-efficacy provide individuals with the confidence and ability to effectively handle their current situations in order to achieve greater goals. Moreover, self-esteem is considered a vital part in the treatment of stress (Bandura, 1977). Participants who possess higher degrees of self-efficacy demonstrate more proficiency in reducing the impact of a stress response. Bandura (1977) contends that self-efficacy beliefs have a pivotal role in influencing the emotions, intellectual processes, self-motivation, and actions of individuals. Among individuals, the nature of beliefs is intricate, characterized by differences in their intensity, depth, and origin.

Typically, the self-efficacy of individuals can be modified by either failure or success in specific situations by projecting to events that transcend the original goal (Du et al., 2021).

Prior research has consistently shown that the presence of favorable attributes in rumination can significantly contribute to the enhancement of self-efficacy. Deliberated Rumination can be effectively controlled when confronted with a challenge (Zeng et al., 2021). Simply put, when confronted with an escalating issue, people often employ active or recurrent cognitive processes to analyze the situation until a resolution is found and the stress caused by the problem is relieved. Nevertheless, the communication of favorable perspectives on diabetic retinopathy is often ignored. Bandura (1977) proposed that efficacy can have distinct impacts on intellectual, inspirational emotional, and selecting processes. The absence of enough self-efficacy might result in persons perceiving themselves as unable to overcome obstacles, therefore exacerbating the occurrence of negative feelings, depression, or post-traumatic stress disorder. A greater degree of self-efficacy in individuals leads to increased motivation and proactivity in their efforts to comprehend the problem, contemplate it, or employ demand-driven reasoning to seek a solution (Andersson et al., 2014).

Empirical evidence has strongly supported the association between confidence and creativity. Research by Tierney and Farmer (2011) suggests that self-confidence is a crucial factor in fostering the development of creative behaviour. Multiple research projects have presented empirical evidence that consistently demonstrates an immediate and beneficial relationship between self-esteem for creativity and creative performance. Based on Bandura's (1977) theoretical framework of self-efficacy, creative self-efficacy refers to an individual's confidence in their ability to successfully do tasks in a specific environment. Therefore, there likely exists a favorable correlation between self-efficacy and creativity. Furthermore, in line with the notion of positive psychological capital (Luthans, Youssef, & Avolio, 2006), self-efficacy, as a beneficial psychological asset, might enhance an individual's ability to generate creative innovations.

Bandura (1977) defines self-efficacy as the degree of assurance individuals have in their capacity to accomplish particular behavioral objectives. Self-efficacy exhibits changes in both its scope and attributes during different life phases of an individual. While self-efficacy by itself does not directly influence an individual's skills, it does influence their planned behaviors, the level of effort required, and the desired outcome of achieving a certain goal (Cai et al., 2018). Deliberated Rumination is a skillful and introspective ability to address and resolve difficulties (Cann et al., 2011; Vahle-Hinz et al., 2017). Compared to passive IR, Deliberated Rumination is more likely to lead to success and improve an individual's self-efficacy. Furthermore, there is convincing empirical evidence that self-efficacy is a reliable predictor of individual creativity. Individuals with a robust feeling of self-efficacy typically exhibit greater levels of creativity. Four primary research hypotheses were established upon the specified study objective and the findings of the literature review:

Hypothesis 1: *Deliberated Rumination is a reliable indicator of creativity.*
Hypothesis 2: *Deliberated Rumination is a reliable indicator of self-efficacy.*
Hypothesis 3: *Self-efficacy is a robust indicator of creativity.*
Hypothesis 4: *Self-efficacy serves as a mediator in the association between Deliberated Rumination and creativity.*

Methodology

Research Design

The current investigation employed an associated quantitative approach in which data was gathered by an internet-based survey. This study conducted a mediation evaluation with Deliberated Rumination as the independent variable, creativity as the dependent variable, and self-efficacy as an intermediary facilitator. Within the scope of our inquiry, students participated in the survey by scanning the short code while they were taking breaks from their college English lessons. In China, a QR code is a monochrome pictorial symbol implemented on a two-dimensional surface. It is widely used and relied upon for many purposes such as online purchases, daily transportation, and data entry.

Participants and Procedures

A web-based questionnaire survey was administered to college students from April 10 to June 15, 2020, via several online methodologies. The questionnaire, originally developed in English, was then translated into Chinese followed by a back translation to confirm its correctness (Almutary, Bonner, & Douglas, 2015). An analysis was conducted to resolve any discrepancies between the original and back-translated versions. The sample comprised volunteering college students currently enrolled in a polytechnic situated in Guangdong Province, China. A diverse social and economic context defines Guangdong Province as a hub of commercial and cultural endeavors in China. Moreover, it has abundant educational resources and a stimulating social creativity atmosphere, which significantly supports the study on the creativity of university students in that particular setting. The study had a cohort of 918 individuals who successfully administered the survey instrument. Of these, 881 replies were deemed legitimate. A total of 317 male participants (36.0%) and 564 female participants (64.0%) were enrolled in the study, all of them belonged to the same grade level.

Data Collection

The data was collected through internet-based survey comprising sections on (a) Demographic Information, (b) Event Related Rumination Inventory Deliberated Rumination Subscale (ERRI-DR) to measure Deliberated Rumination, (c) Runco Ideational Behaviour Scale (RIBS) to assess creativity, and (c) a General Self-Efficacy Scale (GSES) to assess self-efficacy.

Event-Related Rumination Inventory - Deliberated Rumination Subscale (ERRI-DR)

An analysis of Deliberated Rumination was carried out utilizing the Event Related Rumination Inventory (ERRI) developed by Cann et al. (2011). The ERRI model comprises two dimensions: Intrusive rumination and Deliberated Rumination. ERRI-Deliberated Rumination is a subset of Deliberated Rumination that measures an individual's propensity to engage in Deliberated Rumination, a cognitive activity centered on problem-solving through analysis and reflection. In this research, the Deliberated Rumination variant of the Rumination index was selected to evaluate the cognitive functions of college students after experiencing a stressful event. The questionnaire consisted of 10 items, such as "I

considered the potential of deriving meaning from my experience" and "I felt compelled to personally reflect on my emotions about my experience," assessed using a 5-point Likert scale, where "1" represents no meaning whatsoever and "4" represents never. The current investigation produced a Cronbach's alpha ratio of 0.910, indicating that this scale has a sufficiently high level of reliability.

Runco Ideational Behavior Scale (RIBS)

To evaluate level of creativity, the RIBS, a 23-item scale created by Runco et al. (2001), Tsai (2015) and Abdulla Alabbasi et al. (2022) was employed. This scale is a psychometric instrument employed to assess a person's ability to creatively originate, develop, then integrate ideas (such as "I often generate original ideas when confronted with difficulties" and "I will transform innovative ideas into practical practices"). The measurement instrument measures the subjective level of creative involvement in daily activities by using a 5-point Likert scale ranging from "1" indicating substantial divergence to "5" indicating the greatest level of agreement. Based on the obtained Cronbach's alpha coefficient of.938 and McDonald's omega compound reliabilities of 0.903 (>.700), the present study indicates a high degree of reliability for this scale.

General Self-Efficacy Scale (GSES)

The GSES was created by Schwarzer et al. (1997) as a psychometric tool to evaluate a people's subjective assessments of their capacity to handle various challenging situations. This work employed a GSES with 10 components. Based on an assessment of the content validity of the GSES, the last three questions of the initial rating system were eliminated to guarantee that the assessed material corresponded to the research objective of this study. Initially, two items ("When I am confronted with a problem, I can usually recognize several solutions" and "If I am encountering difficulty, I can usually devise a solution") were excluded from the analysis since they did not provide clarity on the purpose of this study. Hence, due to the similarity in meaning between the two statements ("I can usually handle whatever comes my way" and "I am confident that I could deal efficiently with unexpected events"), the latter item was omitted while the former one was preserved, as the latter could be fully incorporated and comprehended. Moreover, the Likert scale comprises four points, with "1" indicating complete falsehood and "4" indicating substantial truth. The applied statistical analysis revealed a Cronbach's alpha coefficient of.875, suggesting that the rating system demonstrates a satisfactory degree of reliability.

Data Analysis

The gathering and evaluation of data in this work were conducted using IBM SPSS version 23.0. In order to verify the accuracy of the data provided by the participants themselves, we initially conducted Harman's single-factor test to investigate the potential presence of common method bias (Podsakoff et al., 2003). The analysis of the unrotated primary factor revealed that 7 factors had independent values above 1, resulting in a total contribution of 62.970% to the residual variance. Based on a percentage of 30.541%, the first factor did not meet the crucial criterion of 40% as established by Li (2018), indicating the lack of significant common technique bias. Fundamentally, the disparity among the

independent and dependent variables can be attributed to variations in the characteristics of the variables rather than to the techniques used for gathering and measuring data.

Furthermore, we performed descriptive analysis, correlation analysis, and model testing on the data to test the study hypotheses. Initially, we examined the concentration and distribution of data by calculating the averages and standard deviations among variables. Furthermore, we calculated Pearson's correlation coefficients in order to analyze the relationships among the independent, dependent, and mediating variables. Next, we conducted a more thorough analysis of the research hypotheses. In addition, we used the SPSS PROCESS plug-in V3.3 (Hayes, 2013) to investigate the mediating effect of the model specifically designated as Model #4. A statistical model was constructed based on the results of the correlation analysis. The PROCESS plug-in was specifically developed for conducting route analysis-based analyses of moderation and mediation, as well as their combinations. The broad use of this approach arises from its simplicity, adaptability, interpretability, and selective emphasis on specific impacts (Hayes, Montoya, & Rockwood, 2017). An evaluation of the indirect impact indicators was conducted using bias-corrected bootstrapping with a sample size of 5,000 and 95% confidence intervals. The statistical relevance of the mediation parameter was demonstrated when the intervals specified did not contain a zero value (Shrout & Bolger, 2002).

Results and Findings

Descriptive Statistics and Correlation Analysis

Table 1 summarizes the mean (M) and standard deviation (SD) indicating gender (M=0.640; SD=0.480), Deliberated Rumination (M=2.041; SD=0.587), Creativity (M = 3.249, SD = 0.563), and Self-efficacy (M = 2.318, SD = 0.537) showing an average to moderate relationship. Creativity has the highest mean, suggesting it is rated most positively among the variables. Overall, the data indicate moderate variability across the constructs and some gender imbalance in the sample.

Table 1

Means, Standard Deviations Among Variables

Items	M	SD
Gender	.640	.480
Deliberated Rumination	2.041	.587
Creativity	3.249	.563
Self-efficacy	2.318	.537

Note: N = 881. Gender was dummy coded (1, female, 0, male)

Summary statistics and Pearson matrix relationship coefficients were computed using SPSS 23.0 to evaluate the mean, standard deviation, and correlation coefficients for Deliberated Rumination, Self-efficacy, and Creativity in college students. The results of the descriptive statistical analysis are displayed in Table 2.

Table 2

Results Of Correlations Among Variables.

	(1)	(2)	(3)
(1) Deliberated Rumination	-.045	-	-
(2) Creativity	-.004	.277**	-
(3) Self-efficacy	-.015	.228**	.475**

*p < .05, **p < .01, ***p < .001; Deliberated Rumination, Deliberated Rumination

The association analysis in Table 2 displayed a highly substantial beneficial association (r =.227, p <.01) between Deliberated Rumination and Creativity among college students. Furthermore, a clear and positive association was observed between Deliberated Rumination and Self-efficacy (r =.228, p <.01), as well as between Self-efficacy and Creativity (r =.475, p <.01). Initial results provided support for the future examination of mediating effects.

Mediation Analysis

Table 3

Testing the mediating effect of Deliberated Rumination on Creativity

Predictors	On Self-efficacy				On Creativity			
	β	SE	t	95% CI	β	SE	t	95% CI
Deliberated Rumination	.21	.03	6.95***	[.15, .27]	.17	.029	5.96***	[.12, .23]
Self-efficacy	-	-	-	-	.46	.031	14.54***	[.39, .52]
R2	.05				.26			
F	48.34				151.01			

Note: *p < .05, **p < .01, ***p < .001; CI- Confidence Interval; Analyses conducted by PROCESS Model 4, N = 881.

A mediation analysis was conducted using the PROCESS plug-in (version 3.3) to investigate the association between Deliberated Rumination as the determining factor, Creativity as the dependent variable, and Self-efficacy as the mediator factor (model #4). The results are consistent with the hypothesis outlined in Table 3. The statistical evaluation reported that Deliberated Rumination had a significant positive impact on Self-efficacy (β =.21, SE =.03, p <.001). H3: Self-efficacy positively influenced creativity statistically significantly (β =.46, SE =.03, p <.001). A robust causal association between Deliberated Rumination and Creativity was shown by the statistical analysis (β =.17, SE =.03, p <.001), indicating that Deliberated Rumination positively predicted Creativity (H1). The newly introduced metric of Self-efficacy retained its significant predictive power (β =.10, SE =.02, 95% CI = [.07,.13]). Therefore, the verification of assumption 4 confirms that overall confidence serves as an intermediary in the connection among digital literacy and creativity. Alternatively expressed, Self-efficacy facilitated the model due to its positive association with Deliberated Rumination and Creativity. Table 4 presents the total, direct and indirect effect with regard to SE and CI of the variables.

Table 4

Total, Direct, and Indirect Effect

	β	SE	95% LLCI	Relative effect size
Total	.27***	.03	[.21, .33]	-
Direct	.17***	.03	[.12, .23]	64.29%
Indirect	.01***	.02	[.07, .13]	35.71%

*p < .05, **p < .01, ***p < .001. SE. standard error; CI, confidence interval.

The statistical analysis in Table 4 shows that the overall impact of Deliberated Rumination on inventiveness, which was statistically significant (β =.27, SE =.03, p <.001). A robust causal association between Deliberated Rumination and Creativity was shown by the statistical analysis (β =.17, SE =.03, p <.001). Furthermore, the indirect impact of Deliberated Rumination on Creativity was also statistically significant (β =.10, SE =.02, p <.001). Notably, the 95% confidence intervals for the lower and upper bounds of the direct impact of Deliberated Rumination on Creativity, taking into consideration the intermediary impact of Self-efficacy, were significant and did not include zero. These findings indicate that Deliberated Rumination indirectly influenced Creativity to some degree by influencing Self-efficacy. Overall, the direct effect (.17) and the mediating effect (.10) independently explained 64.29% and 35.71% of the total effect, respectively. Furthermore, Figure 1 illustrates the correlations and magnitudes of the effects graphically.

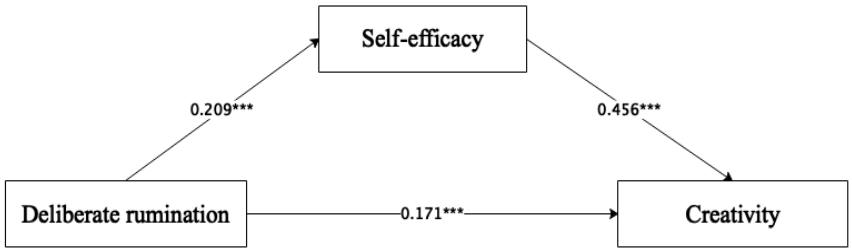

Figure 1: *The Mediation Model Showing Relationships Between Deliberated Rumination and Creativity and The Mediating Role of Self-Efficacy.*
*p<0.05;*o<0.01:***p<0.001.

Discussion

The findings of this survey underwent a rigorous analysis of existing literature and data, which validate specific theories. This research proposed an Intermediary template to examine the correlation between Deliberated Rumination and Creativeness between university sophomore learners who face persistent academic stress. The study unveiled the subsequent findings: (1) Deliberated Rumination exhibits a favorable prognostic correlation with Creativity; (2) Deliberated Rumination exerts a favorable effect on overall Self-efficacy; (3) Self-efficacy demonstrates a favorable prognostic correlation with Creativity; (4) the beneficial influence of Deliberated Rumination on Creativity is partially

mediated by Self-efficacy. The findings of research confirmed that our theory and confirm prior scholarly investigations, emphasizing the importance of Deliberated Rumination and Self-efficacy in fostering Creativity when confronted with common stressors encountered in college.

With regards to hypothesis 1, the findings indicate that Deliberated Rumination has a beneficial predictive impact on Creativity. The notion of creativity suggests that creative behaviour emerges from the dynamic interplay between individuals and their environment (Sternberg & Lubart, 1991). This study presents further evidence that a stressful environment can enhance creativity by triggering increased levels of Deliberated Rumination (Khlystova, Kalyuzhnova, & Belitski, 2022). This suggests that the encounter and cognitive analysis of adverse or distressing experiences can disturb and rebuild individuals' viewpoints and self-image, so fostering creative cognitive processes. Furthermore, the investment theory of creativity posits that creativity arises from the dynamic interaction of ability, process, and environment. Therefore, the degree of Deliberated Rumination in an individual can impact their level of creativity, in addition to the intricacy of the challenge and their own unfavorable feelings toward the world. Building upon this concept, college sophomore students with a higher degree of Deliberated Rumination are more apt to display originality in their academic performance and everyday study habits.

Furthermore, the findings are in line with hypothesis 2 and previously reported research that showed a positive impact of Deliberated Rumination on overall self-efficacy (Takagishi, Sakata, & Kitamura, 2012). Stated differently, a significant degree of Deliberated Rumination can enhance an individual's overall self-efficacy. Bandura's Social Cognitive Theory posits that the participants develop and modify their confidence by introspecting on their own experiences and decisions, encompassing both achievements and setbacks (Zeng et al., 2021). Cognitive Reprocessing helps individuals gain insight into their previous accomplishments and failures, enabling them to adapt their self-expectations and behavioral approaches in future activities, hence improving self-efficacy. Hence, the more robust the Deliberated Rumination of college students, the greater their capacity to cultivate self-efficacy (Zeng et al., 2021). By employing this method, people will be inspired to embrace a positive mental attitude and successfully tackle academic, life-related, emotional, and other challenges that may emerge either directly or indirectly from those stressful events in live.

Moreover, the results are also consistent with hypothesis 3, which posited that overall self-efficacy has a positive predictive relationship with creativity. In essence, a strong sense of overall self-efficacy might augment an individual's capacity for creativity. This conclusion is based on the findings of prior researchers (Mulyadi, Basuki, & Rahardjo, 2016; Zeng et al., 2021), which indicate that greater degree of confidence is connected with increased individual problem-solving endurance and stress tolerance, hence boosting creativity. Our research findings indicate that those who possess a strong sense of self-efficacy are more likely to choose challenging tasks and activities and make deliberate efforts to accomplish their goals (Bandura, 1977). Furthermore, our discovery clarifies the process by which self-efficacy has a beneficial impact on creativity. Individuals who possess a high sense of self-efficacy have exceptional self-control (Seggelen - Damen &

Dam, 2016), which enables them to focus on the present task and therefore increase their chances of successfully completing it (Zeng et al., 2021). Furthermore, they are more equipped to face challenges since they have high confidence in their capacity to attain achievement. Furthermore, self-efficacy has the ability to improve the determination to engage in creative activities. Research conducted by Amabile (2018) has shown that there are positive associations between self-efficacy, which is a type of intrinsic motivation, and individual creativity. It is therefore not unexpected that in this study, college learners with larger degree of confidence were sensitive to challenges; self-efficacy empowered them to creatively address academic problems, emotional disorders, mental health, and lifestyle-related concerns.

Moreover, these results also corroborate hypothesis 4 and previous research results, suggesting that general self-efficacy can be predicted by Deliberated Rumination and that Deliberated Rumination can be transformed into a positive factor in augmenting individuals' creativity. Therefore, self-efficacy works as an intermediary link among Deliberated Rumination with creativity, which enables Deliberated Rumination to impact Creativity. The goal of this research is to clarify the function of self-efficacy as an intermediator, which has an inherent ability to reduce the negative consequences of Deliberated Rumination and improve the creative skills of college students (Du et al., 2021). The adoption of Deliberated Rumination can be regarded as a harmless strategy to mitigate the adverse impact of pandemic stress and other stress-inducing factors on mental health (Squires et al., 2022). Furthermore, our findings support prior research suggesting that the beneficial influence of self-esteem on creativity pronounced among college students with lower levels of Deliberated Rumination than to those with greater levels (Zeng et al., 2021). Individuals with strong self-efficacy exhibit a psychological capacity to effectively utilize their emotional resources when confronted with challenging or ambiguous situations. It is this capacity that drives people to actively engage in constructive adaptation to overcome obstacles, ultimately enabling them to not only withstand but also thrive in their own positive adaptation (Xu et al., 2022). Furthermore, engagement in Deliberated Rumination might motivate individuals to actively contemplate resolutions to challenges in challenging circumstances, leading to personal growth. This developmental process can progressively bolster an individual's self-assurance and ultimately, augment their conviction in their own capabilities. However, excessive levels of Deliberated Rumination might lead to negative emotional or mental disorders (Bakker & van Wingerden, 2021).

The current study unequivocally establishes that general confidence acts as somewhat regulating function in the correlation between Deliberated Rumination with Creativity among college students. Statistical analysis of the data showed that Deliberated Rumination had the greatest impact on Creativity (64.29%), indicating that the function of general confidence as a facilitator is not major (only 35.71%). Moreover, research suggests that Deliberated Rumination might have a substantial influence on Creativity.

Conclusion, Limitations and Implications

The present study employed an intermediary stimulation approach to investigate the association among Deliberated Rumination and Creativity. Furthermore, it examined the function of self-efficacy as intermediary in the correlation between Deliberated Rumination

and Creativity. The results indicated that Deliberated Rumination has a substantial predictive power for both Creativity and Self-efficacy. Simply put, college students with a higher degree of Deliberated Rumination tended to have stronger levels of Creativity. Conversely, college students with a higher degree of Deliberated Rumination also had a better level of Self-efficacy. Moreover, higher education learners having a higher degree of self-efficacy have larger levels of Creativity. The participants consisted of higher education learners who had faced a vast array of challenges. This study presents a possible rationale for the observation that active rumination could enhance the creativity and self-efficacy of undergraduates, therefore enhancing their ability to confront and succeed in difficult circumstances.

The research faced a few evident limitations. The present investigation utilized an exploratory research approach. Furthermore, all participants were exclusively assigned to the identical college, thus the sample collection consisted of learners in the same grade level. Hence, the results of this investigation lack generalizability. Follow-up researchers may contemplate conducting longitudinal studies to track the advancement of the research participants. Furthermore, researchers should explore other mediating variables (such as melancholy, stress, life attitude, etc.) that may influence the effect of deliberate rumination on creativity. Presently, our knowledge of the system and the mental procedure linked to Deliberated Rumination and its influence on creativity is insufficient. The present study provides empirical data that will be of great value for subsequent investigations.

By conceptually establishing a correlation between Deliberated Rumination and Creativity, this work contributes to the ongoing discussion on the influence of Deliberated Rumination on Creativity and enhances pertinent research knowledge. Moreover, our results suggest that self-efficacy acts as mediating in the interplay among Deliberated Rumination with Creativity. Their finding indicates that college students can enhance their ability to adapt efficiently and manage challenges by increasing their Deliberated Rumination and Self-efficacy. Consequently, this allows individuals to exhibit their ability to innovate in their everyday activities or in their particular specific fields of knowledge.

From an applied viewpoint, the interrelation of the three considerations can help researchers in acquiring a more profound comprehension of the process through which Deliberated Rumination promotes innovative growth, thereby offering many opportunities for creative growth and psychological assistance. More precisely, the study promotes the academic enhancement of college students' self-awareness of Deliberated Rumination and their self-efficacy in their task performance, as perceived from a psychological perspective, therefore contributing to their level of Creativity. Thus, taking into account the perspectives of family, school, and society, the study provides theoretical guidance and empirical evidence for fostering creativity among college students.

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