International Journal of Applied Behavioral Sciences **2025; Vol. 12, No. 3: 47-54**
DOI: 10.22037/ijabs.v12i3.50539 **Online ISSN: 2423-5253**

Original Article

Prediction of Creative Self-Efficacy Based on Innovative Thinking, Brain-Behavioral Systems, and the Mediating Role of Cognitive-Emotional Self-Regulation and Creative Problem-Solving in Teenage Girls in Tehran

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Received: 23 Jul 2025; Revised: 25 Agu 2025; Accepted: 15 Sep 2025

Abstract

Background and Aim: Nowadays, educational systems in every country strive to identify creative, innovative, and efficient students to harness their cognitive and emotional capacities in addressing significant societal challenges. In this context, conducting studies in various educational sciences has become a necessity. The present study aimed to predict creative self-efficacy based on creative thinking, behavioral brain systems, and the mediating roles of cognitive-emotional self-regulation and creative problem-solving among adolescent girls in Tehran.

Materials and Methods: This research was conducted with a fundamental purpose and employed a descriptive-correlational path analysis approach. The statistical population included all female high school students in Tehran during the 2023-2024 academic year. A sample of 221 students was selected using a cluster sampling method. Data collection tools included the Carver and White Behavioral Inhibition/Activation System Questionnaire (1994), the short form of the Cognitive Emotion Regulation Questionnaire by Garnefski and Kraaij (2006), Beghetto's Creative Self-Efficacy Scale (2006), Carter's Creative Thinking Questionnaire (2009), and Basadur's Creative Problem-Solving Scale (1999). Structural Equation Modeling (SEM) with AMOS 24 and SPSS 27 was used to evaluate the proposed model.

Results: Findings indicated a satisfactory fit between the proposed model and the data. Path analysis results showed that behavioral inhibition and activation systems, as well as creative thinking, explained 16% of the variance in maladaptive cognitive-emotional self-regulation strategies, 33% of the variance in adaptive cognitive-emotional self-regulation strategies, and 38% of the variance in creative problem-solving. Furthermore, behavioral brain systems, creative thinking, adaptive and maladaptive self-regulation strategies, and creative problem-solving together explained 39% of the variance in creative self-efficacy.

Conclusion: The results of this study underscore the simultaneous importance of strengthening cognitive-emotional skills and behavioral brain systems in enhancing creative self-efficacy among adolescents, as well as in designing effective educational and developmental interventions to promote creativity within the educational system. These findings may inform policymakers and educational planners in developing innovative skills among adolescents.

Keywords: Creative self-efficacy, Creative thinking, Behavioral brain systems, Cognitive-emotional self-regulation, Creative problem-solving, Students

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Please cite this article as:
Ershadi Manesh, S. Prediction of Creative Self-Efficacy Based on Innovative Thinking, Brain-Behavioral Systems, and the Mediating Role of Cognitive-Emotional Self-Regulation and Creative Problem-Solving in Teenage Girls in Tehran. Int. J. Appl. Behav. Sci. 2025;12(3):47 -54

Introduction

In recent decades, numerous studies have highlighted the significant role that positive emotions play in enhancing mental health, quality of life, academic achievement, and occupational performance (1). Within educational contexts, positive emotions are linked not only to improved academic outcomes but also to increased student satisfaction and personal growth. Consequently, interest in discovering the factors that promote the growth and reinforcement of positive emotions, as well as the development of emotional self-regulation strategies, continues to grow, particularly during adolescence, a critical stage for cognitive and emotional development (2).

Cognitive emotion regulation refers to the cognitive and behavioral processes involved in managing and effectively responding to emotions. Educational researchers recognize these strategies as indispensable 21st-century skills (3). The practical application of cognitive emotion regulation supports adaptation to stressful situations, cultivates motivation, and strengthens academic performance. Findings indicate that the skillful use of these strategies contributes to abilities such as problem-solving, creative thinking, and self-efficacy, all of which have been linked to higher academic achievement (4).

An emerging concept that has garnered considerable attention in recent years is creative self-efficacy, defined as an individual's belief in their ability to generate original and innovative ideas or solutions (5). This trait enables individuals to deal with challenges more effectively, sustain motivation and persistence in creative endeavors, and achieve superior academic and professional outcomes. Consistent evidence points to a positive relationship between creative self-efficacy and creative performance across various contexts (5, 6). Furthermore, creative self-efficacy empowers individuals to surmount barriers to creativity and develop novel solutions to complex problems (4).

Creative thinking—the ability to produce novel and practical ideas—is considered the foundation of innovation, scientific progress, and practical problem-solving (7). Creative problem-solving, particularly in today's complex and dynamic world, is regarded as a critical skill that enables individuals to devise unique and practical solutions to various challenges (8). There is growing evidence for the mediating or moderating roles of creative thinking and problem-solving strategies in the development of creative self-efficacy (9).

From a neuropsychological perspective, behavioral brain systems—namely the Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS)—play important roles in the emergence and regulation of emotions (10). The proper functioning of these systems, particularly in response to motivational and stressful situations, can influence both creative behavior and emotion regulation. Individual differences in approach (BAS) or avoidance (BIS) tendencies affect emotional experience and expression, which in turn impact cognitive emotion regulation strategies and creative self-efficacy (11).

Despite the available evidence highlighting the impact of these variables, a comprehensive understanding of the interplay and mediating or moderating roles of creative thinking, behavioral brain systems, and creative problem-solving strategies in predicting creative self-efficacy remains lacking—especially among adolescent girls. This population is at a significant stage of cognitive, emotional, and social development, making it essential to investigate these relationships within their context.

Accordingly, the present study aims to examine a structural model that predicts creative self-efficacy based on creative thinking and behavioral brain systems, considering the mediating roles of cognitive emotion regulation and creative problem-solving strategies among adolescent girls in Tehran. The findings are expected to address existing theoretical and practical gaps, guiding future educational and developmental programs that foster creativity and innovation among adolescents, particularly within the national educational system.

Methods

Study Design and Participants

This applied study employed a descriptive-correlational design, based on structural equation modeling (SEM), to examine multivariate relationships among research variables and conduct path analysis. The statistical population comprised all female high school students aged 14 to 18 years in Tehran during the 2023–2024 academic year. A multi-stage cluster sampling method was employed: first, five out of Tehran's 22 districts (Districts 4, 5, 7, 9, and 11) were randomly selected, and then one school was chosen from each of these selected districts. In coordination with school administrators and teachers, online questionnaires were distributed, and a total of 221 students completed the survey, which was included in the analysis.

Inclusion and Exclusion Criteria

Inclusion criteria were informed consent and being within the 14–18 age range. Exclusion criteria included unwillingness to participate or the presence of physical or psychological conditions that impeded participation. Sample size was determined based on the Supper formula, considering the number of latent variables, questionnaire items, and the proposed model (12).

Cognitive Emotion Regulation Questionnaire (CERQ - Short Form)

The short form of the CERQ is an 18-item self-report measure assessing both positive and negative cognitive emotion regulation strategies on a 5-point Likert scale (1 = never to 5 = always). Developed by Garnefski and colleagues for individuals aged 12 and older, it demonstrates high reliability in Iran, with Cronbach's alpha ranging from 0.76 to 0.92, test-retest correlations between 0.51 and 0.77, and satisfactory construct and criterion validity. Subscales include self-blame ($\alpha = 0.68$), acceptance ($\alpha = 0.73$), rumination ($\alpha = 0.79$), positive refocusing ($\alpha = 0.80$), planning ($\alpha = 0.79$), positive reappraisal ($\alpha = 0.81$), perspective-taking ($\alpha = 0.79$), catastrophizing ($\alpha = 0.81$), and blaming others ($\alpha = 0.77$) (13).

Carver and White Behavioral Inhibition/Activation System Questionnaire

This 20-item tool measures two subscales—Behavioral Inhibition System (BIS) and Behavioral Activation System (BAS)—on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). Reported Cronbach's alpha coefficients are 0.74 for BIS and 0.77 for BAS (14, 15).

Creative Self-Efficacy Questionnaire (CSEQ)

Developed by Beghetto, the CSEQ is a 7-item scale using a 7-point Likert response format, with total scores ranging from 7 to 49. Its concurrent validity has been reported as 0.66 ($p \leq 0.001$) (16, 17).

Basadur Creative Problem-Solving Scale

This 16-item scale is rated on a 5-point Likert scale (total score: 16–80), and can be administered individually or in groups. Test-retest reliability has been reported as 0.762 and Cronbach's alpha as 0.884. The psychometric properties of the Persian version have been validated (18, 19).

Carter's Creative Thinking Questionnaire

Developed in 2009, this 20-item questionnaire assesses creative thinking abilities across three subscales: difference recognition (items 1–6), finding the omitted symbol (items 7–14), and diagram relationship (items 15–20). Scores range from 20 to 100, using a 5-point Likert scale (1 = never to 5 = always). Cronbach's alpha for the total scale is 0.89, with an internal consistency of 0.85 (20, 21).

Procedure and Data Analysis

Descriptive statistics (mean, standard deviation, and Pearson zero-order correlations) were calculated. Structural equation modeling (SEM) was used to assess model fit and relationships among variables, performed using SPSS v26 and AMOS v24.

Data were collected online by distributing survey links to students. The introductory section of each questionnaire informed participants about the study objectives, participation conditions, confidentiality, and the requirement for informed consent. Data collection spanned from March to October 2024. Only fully completed questionnaires were included in the analyses to ensure data quality. The research complied with ethical standards, obtaining approvals and informed consent from both participants and their parents. Confidentiality and the right to withdraw at any stage were ensured, and no identifying information was collected from participants.

Results

The demographic characteristics of the participants are presented in Table 1. A total of 221 female students, with a mean age of 16.84 years (SD = 2.44; age range, 14-18 years), participated in the study. Approximately 57% of the sample belonged to the 14–16 age group, with the remainder in other age groups. As shown in Table 2, the mean (and standard deviation), minimum, and maximum values of the study variables are provided. According to Table 2, the mean total score for behavioral inhibition was 15.90 (SD = 3), behavioral activation 24.22 (SD = 4.75), creative problem-solving 53.53 (SD = 8.49), creative self-efficacy 33.17 (SD = 5.15), creative thinking 51.54 (SD = 12.55), adaptive cognitive-emotional self-regulation 19.81 (SD = 4.83), and maladaptive cognitive-emotional self-regulation 19.25 (SD = 3.84).

The normality assumption of the data was examined using skewness and kurtosis tests.

Table 3 presents the correlation matrix of research variables. As indicated, all correlations are substantial ($r \geq 0.58$ or $r < -0.10$). Among these, creative problem-solving and creative thinking displayed the highest correlation ($r = 0.58$), while maladaptive cognitive-emotional self-regulation and creative problem-solving showed the lowest ($r = -0.10$).

Before evaluating the measurement model and the structural model, key assumptions of structural equation modeling, including univariate and multivariate normality, as well as the absence of multicollinearity, were assessed. Calculating skewness and kurtosis for each observed variable is a standard method for assessing univariate normality. In this study, the skewness of the observed variables ranged from -0.53 to 1.25, and kurtosis ranged from 1.093 to 5.75. According to Chu and Bentler , a cut-off point of ±3 for skewness is considered appropriate. Although there is little consensus on the cut-off point for kurtosis, generally, values greater than ±10 are considered problematic, and values exceeding ±20 are deemed invalid (22, 23).

In this study, multivariate normality was assessed using the relative multivariate kurtosis index, which yielded a value of 1.378. Bentler states that if this value does not exceed 3, multivariate normality is achieved. Therefore, the distribution of all combinations of variables is normal. The assumption of no multicollinearity was examined by inspecting the correlation matrix among observed variables. Analysis of this matrix indicated that multicollinearity did not exist among the variables, as the coefficients ranged from 0.58 to 0.10 (24).

The measurement model specifies the relationships between observed variables and latent variables. This model was evaluated using confirmatory factor analysis. The model fit indices presented in Table 4 indicate a desirable fit for the measurement model. Therefore, the observed variables are capable of operationalizing the latent variables. The standardized coefficients for the direct paths in the proposed model are displayed in Figure 1. According to these results, the variables of inhibition, behavioral activation, and creative thinking collectively explain a portion of the variance in the study's mediator and endogenous variables. To evaluate the mediational paths, the bootstrap test was used, and its results are reported in Table 5. The findings indicate that the indirect effects of certain predictor variables on creative self-efficacy, mediated by specific variables, were significant.

The findings for the direct hypotheses of the study showed that individual and cognitive variables, such as creative thinking and creative problem-solving, play a statistically significant and positive role in enhancing creative self-efficacy.

In addition, the influence of brain-behavior systems varied depending on the direction of the effect: the behavioral activation system led to an increase in creative self-efficacy.

In contrast, the behavioral inhibition system led to a decrease. Furthermore, the results indicated that adaptive cognitive-emotional self-regulation strategies serve as supportive factors for creative self-efficacy, while maladaptive strategies have an inhibiting effect. Overall, these results highlight the necessity of the concurrent presence of cognitive-emotional and biological factors in predicting adolescents' creative self-efficacy.

Modeling outcomes revealed that mediating variables such as cognitive-emotional self-regulation strategies and creative problem-solving strengthen the impact pathways of the main variables. For example, the effects of creative thinking and brain-behavioral

systems on creative self-efficacy, mediated by these variables, were mainly significant and directional, emphasizing the importance of adaptive strategies and problem-solving processes as mediators. These findings suggest that fostering mediating skills can not only enhance the influence of main variables but also open new pathways for improving creative self-efficacy.

Table 1. Mean and Standard Deviation of the Age of Student Participants in the Study

Age Group	Frequency	Percentage	Cumulative Percentage
12–14 years	73	33.0%	33.0%
14–16 years	125	56.6%	89.6%
16–18 years	23	10.4%	100.0%
Total	221	100%	
Age	Mean	Standard Deviation	Minimum (Maximum)
	16.84	2.44	14 (18)

Table 2. Distribution of Mean, Standard Deviation, Minimum, and Maximum of the Research Variables

Variable	Mean	Standard Deviation	Minimum	Maximum	Skewness	Kurtosis
Behavioral Inhibition	15.90	3.00	8	28	0.681	1.216
Behavioral Activation	24.22	4.75	15	52	1.541	5.753
Creative Problem Solving	53.53	8.49	16	75	-0.530	1.204
Creative Self-Efficacy	33.17	5.15	7	49	-0.648	3.927
Creative Thinking	51.54	12.55	25	100	0.598	1.301
Adaptive Cognitive-Emotional Self-Regulation	19.81	4.83	11	40	1.257	2.596
Maladaptive Cognitive-Emotional Self-Regulation	19.25	3.84	11	32	0.568	1.093

Table 3. Correlation Matrix of the Research Variables

Variable	1	2	3	4	5	6	7	8
Behavioral Inhibition	-							
Behavioral Activation	-0.56	-						
Creative Problem Solving	-0.30	0.42	-					
Creative Thinking	-0.33	0.42	0.58	-				
Adaptive Cognitive-Emotional Self-Regulation	0.39	0.46	0.41	0.47	-			
Maladaptive Cognitive-Emotional Self-Regulation	0.14*	-0.17	-0.10*	-0.15*	-0.26	-		
Creative Self-Efficacy	-0.18*	0.17*	0.19*	0.22	0.27	-0.21		-

Table 4. Goodness-of-Fit Indices of the Proposed Model

Category	Fit Index Name	Proposed Model Value	Acceptable Fit Criteria
Absolute Fit Indices	Chi-square Goodness of Fit Test (χ^2)	109.863	Greater than 5%
	Goodness of Fit Index (GFI)	0.995	≥ 0.90
	Adjusted Goodness of Fit Index (AGFI)	0.935	≥ 0.90
Comparative Fit Indices	Non-Normed Fit Index (NNFI)	0.948	≥ 0.90
	Normed Fit Index (NFI)	0.990	≥ 0.90
	Comparative Fit Index (CFI)	0.995	≥ 0.90
	Relative Fit Index (RFI)	0.891	≥ 0.90
	Incremental Fit Index (IFI)	0.995	Range: 0–1
Parsimonious Fit Indices	Parsimonious Normed Fit Index (PNFI)	0.094	≥ 0.50
	Root Mean Square Error of Approximation (RMSEA)	0.061	≤ 0.10
	Normalized Chi-square (CMIN/DF)	1.811	Between 1 and 3

Table 5. Bootstrap results for examining the standardized indirect coefficients of the research variables

Paths	Effect	Bias	S.E	Lower Bound	Upper Bound	P
Behavioral Inhibition---> Adaptive Strategy---> Creative Self-Efficacy	-0.040	-0.16	0.039	-0.034	-0.078	0.01
Behavioral Inhibition --->Maladaptive Strategy---> Creative Self-Efficacy	0.021	0.008	0.142	0.016	0.111	0.09
Behavioral Inhibition-->Creative Problem Solving--> Creative Self-Efficacy	-0.023	-0.005	0.132	-0.021	-0.121	0.01
Behavioral Activation --->Adaptive Strategy---> Creative Self-Efficacy	0.062	0.006	0.089	0.054	0.145	0.009
Behavioral Activation --->Maladaptive Strategy---> Creative Self-Efficacy	-0.016	-0.019	0.126	-0.013	-0.019	0.124
Behavioral Activation --->Creative Problem Solving--> Creative Self-Efficacy	0.034	0.009	0.089	0.025	0.103	0.02
Creative Thinking --->Adaptive Strategy---> Creative Self-Efficacy	0.080	0.003	0.054	0.065	0.187	0.006
Creative Thinking --->Maladaptive Strategy---> Creative Self-Efficacy	-0.028	-0.008	0.141	-0.016	-0.121	0.103
Creative Thinking--->Creative Problem Solving---> Creative Self-Efficacy	0.083	0.003	0.063	0.055	0.145	0.002

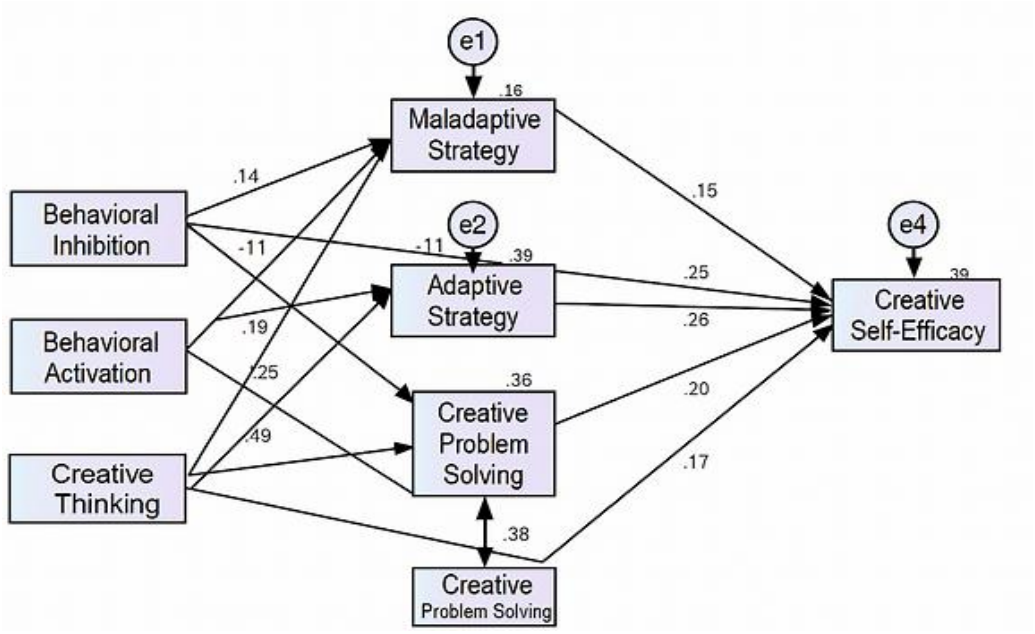

Figure 1. Standardized Coefficients of Direct Paths in the Proposed and Fitted Model of the Research Variables

Discussion

The findings from this study reveal that creative thinking, behavioural brain systems, cognitive-emotional self-regulation, and creative problem-solving play significant roles in predicting creative self-efficacy among adolescents. These results are consistent with Bandura's social-cognitive theory, as well as a body of research highlighting the critical influence of personal beliefs in one's abilities on academic achievement and personal growth (5, 19).

One notable observation is that creative thinking enhances an individual's confidence in their creative abilities. Adolescents who demonstrate higher creative thinking skills tend to be more adept at drawing upon practical problem-solving approaches and self-regulation, particularly when faced with academic challenges (15, 24). Additionally, the research suggests

that the Behavioral Activation System (BAS) has a positive effect on creative self-efficacy, whereas the Behavioral Inhibition System (BIS) has a negative impact on it (10, 14, 21). It suggests that attitudes of motivation, optimism, and goal-oriented action work to enhance personal efficacy, whereas hesitation and self-doubt can detract from it (11, 14).

Adaptive cognitive-emotional regulation strategies were found to have a notable, positive association with creative self-efficacy, while maladaptive approaches either offered no benefit or showed a negative link (2, 14). These findings underscore the importance of educating adolescents in emotional regulation and effective coping strategies as a means to foster not only creativity but also well-rounded problem-solving competencies (23, 26). Furthermore, creative problem-solving skills were found to influence creative self-efficacy both directly and indirectly, serving as a central factor in the model (17, 18). Adolescents equipped with these skills reported higher confidence in their ability to craft innovative solutions to life's diverse problems.

The study's indirect pathways revealed that creative thinking enhances creative self-efficacy by strengthening cognitive-emotional self-regulation and problem-solving abilities. Behavioural brain systems were also shown to contribute to the development of creative self-efficacy through these psychological mechanisms (10, 21). These insights necessitate educational initiatives that foster both cognitive and emotional competencies in students. The present findings resonate with national and international studies that confirm the mediating effects of emotional regulation and problem-solving in the interplay between creative thinking, behavioural brain systems, and creative self-efficacy in adolescents (6, 23, 26).

The study's practical implications are extensive for policymakers, school administrators, psychologists, and counsellors. Since creative thinking, creative problem-solving, and cognitive-emotional self-regulation are each confirmed to bolster creative self-efficacy, educational programs should go beyond rote learning. School curricula should prioritize group problem-solving exercises, divergent thinking workshops, and up-to-date emotional skills training (8, 25). Consistent opportunities, such as creativity seminars, hands-on problem-solving sessions, and tailored counseling, can help students address academic and social challenges more confidently. Additionally, empowering teachers to identify and nurture students' creative abilities—using encouraging and supportive strategies—should be a central focus, helping shift schools from memory-based environments to ones that foster creativity, resilience, and motivation.

Conclusion

Reflecting on the study's results, future research is strongly encouraged to examine the impact of interventions that target creative thinking, emotion management, and problem-solving across various periods and broader participant samples (including male students, different age cohorts, or learners with special needs). Longitudinal and experimental research will be invaluable in clarifying the persistence and direction of change in key variables over time. Moreover, exploring environmental factors—such as family dynamics and school climate—as well as mediating or moderating personality traits (for example, resilience, motivation, and social support) can deepen our understanding of how creative self-efficacy influences academic achievement and overall well-being in Iranian adolescents.

Acknowledgment

I sincerely thank my esteemed supervisors, dear friends, and all participants whose cooperation greatly contributed to this research.

Conflict of Interest

The authors declare that they have no conflict of interest.

References

1- Oh, S., & Pyo, J. (2023). Creative Self-Efficacy, Cognitive Reappraisal, Positive Affect, and Career Satisfaction: A Serial Mediation Model. *Behavioral sciences (Basel, Switzerland)*, *13*(11), 890. https://doi.org/10.3390/bs13110890

2- Webb, T. L., Miles, E., & Sheeran, P. (2012). Dealing with feeling: A meta-analysis of the effectiveness of strategies derived from the process model of emotion regulation. *Psychological Bulletin*, *138*(4), 775–808. https://doi.org/10.1037/a0027600

3- Gross, J. J. (2015b). The Extended Process Model of Emotion Regulation: Elaborations, Applications, and Future Directions. *Psychological Inquiry*, *26*(1), 130–137. https://doi.org/10.1080/1047840X.2015.989751
4- Coursey, L. E., Paulus, P. B., Williams, B. C., & Kenworthy, J. B. (2018). The role of individual differences in group and team creativity. In *Individual creativity in the workplace* (pp. 311-338). Academic Press.
5- Tierney, P., & Farmer, S. M. (2011). Creative self-efficacy development and creative performance over time. *The Journal of applied psychology*, *96*(2), 277–293. https://doi.org/10.1037/a0020952
6- Shaw, A., Kapnek, M., & Morelli, N. A. (2021). Measuring Creative Self-Efficacy: An Item Response Theory Analysis of the Creative Self-Efficacy Scale. *Frontiers in psychology*, *12*, 678033. https://doi.org/10.3389/fpsyg.2021.678033
7- Runco, M. A., & Jaeger, G. J. (2012). The standard definition of creativity. *Creativity research journal*, *24*(1), 92-96.
8- Harefa, D. (2020). Pengaruh Model Pembelajaran Problem Solving Terhadap Hasil Belajar IPA Fisika Siswa Kelas IX SMP Negeri 1 Luahagundre Maniamolo Tahun Pembelajaran (Pada Materi Energi Dan Daya Listrik). Jurnal Education and Development, 8(1), 231–234.
9- Reis, M., Pfister, R., Kunde, W., & Foerster, A. (2023). Creative thinking does not promote dishonesty. *Royal Society open science*, *10*(12), 230879. https://doi.org/10.1098/rsos.230879
10- Serrano-Ibáñez, E. R., Ramírez-Maestre, C., López-Martínez, A. E., Esteve, R., Ruiz-Párraga, G. T., & Jensen, M. P. (2018). Behavioral Inhibition and Activation Systems, and Emotional Regulation in Individuals With Chronic Musculoskeletal Pain. *Frontiers in psychiatry*, *9*, 394. https://doi.org/10.3389/fpsyt.2018.00394
11- Hundt, N. E., Brown, L. H., Kimbrel, N. A., Walsh, M. A., Nelson-Gray, R., & Kwapil, T. R. (2013). Reinforcement sensitivity theory predicts positive and negative affect in daily life. *Personality and Individual Differences*, *54*(3), 350-354.
12- Wolf, E. J., Harrington, K. M., Clark, S. L., & Miller, M. W. (2013). Sample size requirements for structural equation models: An evaluation of power, bias, and solution propriety. *Educational and psychological measurement*, *73*(6), 913-934.
13- Garnefski, N., & Kraaij, V. (2006). Cognitive Emotion Regulation Questionnaire Development of a short 18-item version (CERQ-short). *Personality and Individual Differences*, 41, 1045-1053.
14- Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: the BIS/BAS scales. *Journal of personality and social psychology*, *67*(2), 319.
15- Begetto, R.A. (2006). Creative self-efficacy: Correlates in middle and secondary students. Creativity Research Journal,18, 447–457.
16- Basadur, M. (1999). The Basadur simplex Creative Problem-Solving Profile inventory (CPSP): further research on reliability and validity. Michael G. DeGroote School of Business McMaster University. Working paper.NO. 83.
17- Zare, Hossein, Imanifar, Hamid Reaz, Mostafaee, Ali, & Baradarn, Majid. (2014). Validating And Factor Structure Of Basadr Creative Problem-Solving Test. Innovation & Creativity In Human Science, 3(4), 127-146. SID. https://sid.ir/paper/223354/enCarter, A. G., Creedy, D. K., & Sidebotham, M. (2016). Development and psychometric testing of the Carter Assessment of Critical Thinking in Midwifery(Preceptor/Mentor version). *Midwifery*, *34*, 141–149. https://doi.org/10.1016/j.midw.2015.12.002
18- mirsamadi F. Comparison of The Effectiveness of 5E Model and Ganiye Educational Model on Critical Thinking and Creative Thinking of Students. 3 JNE 2022; 10 (6) :77-87 URL: http://jne.ir/article-1-1321-fa.html
19- Brozovich, F. A., Goldin, P., Lee, I., Jazaieri, H., Heimberg, R. G., & Gross, J. J. (2015). The effect of rumination and reappraisal on social anxiety symptoms during cognitive-behavioral therapy for social anxiety disorder. *Journal of Clinical Psychology*, *71*, 208–218. https://doi.org/10.1002/jclp.22132
20- Ng, T. W., & Lucianetti, L. (2016). Within-individual increases in innovative behavior and creative, persuasion, and change self-efficacy over time: A social-cognitive theory perspective. *The Journal of applied psychology*, *101*(1), 14–34. https://doi.org/10.1037/apl0000029
21- Barsalani, N., Ebrahimi Alaviklaei, S., Sadeghi, J., & Mohammadzadeh, R. A. (2022). Relationship between behavioral activation/inhibition systems with Academic Self-Efficacy in students. *Journal of Educational Psychology Studies*, *19*(46), 13-1.
22- Barsalani, N., Ebrahimi Alaviklaei, S., Sadeghi, J., & Mohammadzadeh, R. A. (2022). Relationship between behavioral activation/inhibition systems with Academic Self-Efficacy in students. *Journal of Educational Psychology Studies*, *19*(46), 13-1.
23- Taghvaee Yazdi, M., & Hosseini Tabaghdehi, L. (2022). The mediating role of creative self-efficacy in the relationship between social intelligence and students' cognitive emotion self-regulation. *Social Psychology Research*, *12*(45), 27-44.
24- Daker, R. J., Viskontas, I. V., Porter, G. F., Colaizzi, G. A., Lyons, I. M., & Green, A. E. (2023). Investigating links between creativity anxiety, creative performance, and state-level anxiety and effort during creative thinking. *Scientific reports*, *13*(1), 17095. https://doi.org/10.1038/s41598-023-39188-1
25- Chou, C. P., & Bentler, P. M. (1995). Estimates and tests in structural equation modelin
26- Aali, S., Yazdi, S. A. A., Eidi, H., & Moghise, N. (2016). The Association between functional-emotional development and creative thinking in preschool children. International Journal of Applied Behavioral Sciences, 2(3), 1–7. https://doi.org/10.22037/ijabs.v2i3.7488