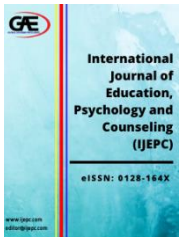
International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 7 Issue 45 (March 2022) PP. 343-355
DOI 10.35631/IJEPC.745027



INTERNATIONAL JOURNAL OF EDUCATION, PSYCHOLOGY AND COUNSELLING (IJEPC)
www.ijepc.com

CORRELATION BETWEEN METACOGNITION AND EMOTION REGULATION AMONG PRE-SERVICE TEACHERS

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Article Info:

Article history:
Received date: 01.02.2022
Revised date: 12.02.2022
Accepted date: 17.02.2022
Published date: 05.03.2022

To cite this document:

Yeoh, S. W., Hutagalung, F. D., & Chew, F. P. (2022). Correlation Between Metacognition And Emotion Regulation Among Pre-Service Teachers. *International Journal of Education, Psychology and Counseling, 7* (45), 343-355.

DOI: 10.35631/IJEPC.745027

Abstract:

This research aims to identify the correlation between metacognition and emotion regulation among pre-service teachers. 238 pre-service teachers from an Institute of Teacher Education responded to Metacognitive Awareness Inventory (MAI) and Emotion Regulation Questionnaire (ERQ). Based on the result, there is a significant correlation (r=0.328) between metacognition and emotion regulation among pre-service teachers. Teacher education should focus on pre-service teachers' metacognitive development to improve emotion regulation.

Keywords:

Metacognition, Emotion Regulation, Pre-service Teacher

Introduction

Malaysia educational system is experiencing tremendous transformation. Focus of curriculum swifts from reading, writing, and counting to higher order thinking skills (Malaysian Education

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Blueprint 2015-2025). The role of metacognition is being emphasize in different level of education. Pre-service teachers need to equip with emotion regulation and metacognition skills to cope with the job-related stress. Metacognition empowers the awareness and regulation of cognition hence facilitate emotion regulation. Research among teachers in west Malaysia shows that teachers are low in emotional intelligence. The mean value for emotional intelligences according to Malaysian Emotional Quotient Inventory (MEQI) was 64.36 %. Lack of emotion regulation causes teacher respond passively to negative emotion from job-related stress (Noriah, Iskandar, Ridzauddin, 2017).

According to National Foundation for Educational Research (2017), teaching profession involved great job-related stress in educational industry. Teachers in Malaysia not only facing the challenges to educate children but also endure the stress from constant educational transformation in the nation. Emotional flexibility of pre-service teacher to adapt in changing environment is crucial as they are the front-liner in educational system (Kaçay, 2021). According to Informational Affect Theory, emotion is capable to determine the content of thought, judgment and decision making. Emotion regulation is essential to achieve cognitive adaptive response (Wang, 2020). It has significant influence on the cognitive process and modulates information processing (Koschmieder & Neubauer., 2021). A study on the influence of metacognition towards emotion regulation is needed because these variables modulate pre-service teacher's job performance.

There are two emotion regulation strategies in this study. Cognitive reappraisal re-evaluates the circumstances to view it as safe. (Troy et al., 2018). Expressive suppression responds to negative emotion by neglecting it. This strategy trigger stress response model (Ibrahim & David, 2021). Emotion suppression leads to negative mental and social outcomes in Western culture. However, East-Asian cultural like Malaysia emotion suppression not necessarily leads to negative outcomes (Schouten et al, 2020). Most of the Western psychologist agreed that suppressive emotion is unhealthy. East-Asian culture has better perspective on emotion suppression. According to two Japanese quote "Is elegant if hidden." "Smiling face. Crying heart.", individual is encouraged to suppress emotion to maintain harmony social interaction. Therefore, suppressive emotion is less harmful in interdependent culture. It has fewer negative impacts on psychological and social wellbeing in East-Asian culture compared to Western culture. Understanding of cultural differences in emotion suppression is crucial in teacher education.

The purpose of this study is to: First, investigate the correlation between metacognition and emotion regulation among pre-service teachers. Second, investigate the correlation between metacognition and different emotion regulation strategies. Pre-service teacher's ability to aware and regulate of emotion while facing challenges increase perceived control towards future challenges (Ishak & Jamian, 2021). Understanding of metacognition and emotion regulation enable teacher training institutes to plan appropriate strategies in teacher preparation. Pre-service teacher should be trained to cope with stress and other negative emotions to sustain in challenging situation. Ability to control own emotion empower pre-service teacher with the autonomy to control their responses towards external circumstances (Koschmieder & Neubauer, 2021).

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Literature Review

The role of metacognition in emotion regulation has attracted researcher from different areas such as education, neuropsychology, medical, and psychology to study on this topic. Study on metacognition and emotion regulation from different fields provide understanding on this topic from different perspectives. Understanding of pre-service teachers' metacognition and emotion regulation from different perspectives strengthen the conceptual understanding on the relationship between metacognition, emotion regulation and self-efficacy.

From neuropsychology perspective, cognitive reappraisal facet is a healthier method to regulate negative emotion compared to expression suppressive facet. A study was conducted by researcher from Jinan University to identify the influence of different emotion regulation towards emotion responses. The purpose of Chen's research is a theoretical review to identify the similarity and difference between cognitive reappraisal and expression suppressive towards emotion response. Intervention of the study are supervision of cognitive reappraisal and ad-hoc cognitive reappraisal. In supervision of cognitive reappraisal, participant implement language to re-assess emotion experience. Participants were required to watch abhorrence of video. Results show that cognitive reappraisal decrease the abhorrence feelings. However, expression suppressive effectively suppressed abhorrence expression but failed to decrease the abhorrence feelings (Chen, 2016).

Chen assesses the cognitive reappraisal towards emotional response using intervention in cognitive reappraisal. Language instruction was used to guide respondents to reappraise their emotion cognitively. Respondents were required to watch an aversive video clip. Result shows that even though cognitive reappraisal does not aim to reduce emotion expression, but respondents' emotional behavior reduced from the cognitive reappraisal strategy. Cognitive reappraisal reduces the emotional expression and aversion experience. Expression suppressive reduces the emotional expression but does not reduce the aversion experience (Chen, 2016). However, Chen's intervention does not discriminate on the genetic disposition of respondents. Respondents from both genders were watching to the same aversive video clips. Sexuality and gender research shows that gender disposition has significant influence on the emotional reaction towards different stimulation (Zhang & Bian, 2020). Chen's intervention causes bias between male and female emotional reaction hence it influences on the emotion regulation process.

Understanding of individual's emotional experiences is the antecedent factor to study emotion regulation strategies in Chen's research. He used emotion regulation questionnaire (ERQ) to assess the impact of emotional experience for respondents who used cognitive reappraisal as emotion regulation strategies. Results indicates that respondents who re-evaluate negative emotion experience cognitively, experience lower negative emotion compared to respondents who suppression their negative emotion. Gross and Levenson (1993) conducted the similar study to investigate the cognition pattern and emotion regulation. Both studies indicate the similar findings on cognitive reappraisal facets. Cognitive reappraisal is positively correlated to mental health while dealing with negative emotion regulation. It shows that implication of metacognition to evaluate cognition in emotion regulation process provides better emotion regulation outcome. In addition, Gross and Levenson extend their researcher in expression suppressive facet. Their result indicates that there was no significant correlation between expression suppressive facet and negative emotional experience. However, there was a significant negative correlation between expression suppressive facet and positive emotional

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experience. Suppression of negative emotion does not reduce the negative feelings; but suppression of positive emotion does reduce the positive feelings.

Based on the two studies, researcher understand that cognitive reappraisal facet and expression suppressive facet can reduce expression of emotion. However, cognitive reappraisal facet able to reduce the emotional experience compared to expression suppressive facet (Chen, 2016). In addition, valence of emotion leads to different impact of expression suppressive facet. Suppress positive emotion reduce positive emotion experience whereas suppress negative emotion increase negative emotion experience. (Gross & Levenson, 1993). Expression suppressive facet does not support individual mental well-being.

Besides neuropsychology perspective, correlation between metacognition and emotion regulation can be observed from mental health research. A study was conducted in Universal Medical Center Mainz to examine the correlation between awareness and regulation of emotion strategies. Emotional awareness determines pre-service teachers' emotion regulation. It influences pre-service teachers' perception on negative feelings. 2524 participants responded to emotional awareness scale (LEAS) and Emotion Regulation Questionnaire (EQR). LEAS measures implicit and explicit level of awareness of emotion. ERQ identifies participants' emotion regulation (Claudia, 2017).

Result shows that cognitive reappraisal facet leads to lower negative affectivity. Coping stress with cognitive reappraisal facet indicates low anxiety and depression level. Results is justified by experiment which regulation of anxiety is arose from task performance. Reappraisal or acceptance emotional experience decrease physiological effect thus improves task performance and decrease negative feelings compare to suppress anxiety emotion. Mood disorder and anxiety patients are reported to have less negative emotion experience if they did cognitive reappraisal after watching a sad movie. Cognitive reappraisal develops the awareness to gap between reality and negative emotion (Claudia, 2017).

Claudia (2017) replicated the study on population who facing with real threats. Chronic patients who are experiencing medical condition were recruited in the research. Result indicates that cognitive reappraisal is negative correlated with anxiety and depression among chronic patients. Besides, cognitive reappraisal has stronger negative correlation with negative emotion for inferiority and aging elders compared to young adults. Lastly, cognitive reappraisal has stronger negative correlation with eating disorders among stressed women compared to men. Claudia's research provides us deeper understanding on the impact of cognitive reappraisal in different context. Chen's research does not discriminate the discrepancies between age and gender. Chen's research shows that metacognition facilitates cognitive reappraisal process and improve mental health. However, Claudia's research shows that metacognition has the same impact on age and gender, but the intensity of metacognition impact is different by age and gender.

The role of metacognition in emotion regulation is observed in psychopathology research. 114 patients with emotion disorder participated in the research. Results show that cognitive reappraisal is negatively correlated with problem solving and negative emotion ($r = -0.173$, $p < .05$). Suppression expressive is positively correlated with avoidance and negative emotion ($r = 0.266$, $p < .001$). It shows the influence of emotion awareness and regulation to psychopathology. Anxiety and depression consequence different physiological arousal that

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influence on fight or flight action tendencies. Depression patients consciously aware of their emotional experience such as sadness through emotional awareness (Claudia, 2017).

Results show that individual has unique awareness of cognition to comprise anxiety and depression. Thus, individual has unique emotion experience of mood states. Example, some anxiety patients experience restlessness unconsciously, but other anxiety patients experience nausea consciously as physiological reaction. Some depression patients withdraw from social activity not because they do not have social skills, but they feel exhausted on interaction with other. Results show that awareness of negative emotion is important in emotion regulation. Cognitive reappraisal as a conscious decision needs pre-service teacher to aware of own emotion experience to create a new paradigm for it. Suppression expressive is an unconscious strategy to cope with negative emotion. Individual is unconscious of own emotion while deciding to suppress expressive of emotion. (Claudia, 2017). Even though both researchers were studying on cognitive reappraisal, but both researchers have different focus of research on the same variable. Claudia focused on the role of metacognition to understand the antecedent of emotion whereas Chen focused on the consequence of implement metacognition in emotion regulation through cognitive reappraisal.

Pre-service teachers choose to suppress expressive of emotion to decrease the anxiety from diffuse negative arousal. They suppress conscious awareness to decrease negative experience such as sadness. However, suppress conscious awareness reduces the autonomy in decision making process because pre-service teachers do not have clear understanding of the issue and its impact on own cognition and emotional states. Thus, cognitive awareness is an important variable to influence emotion regulation and negative emotion (Claudia, 2017).

Method

Research Design

Quantitative research was used to identify the correlation between metacognition and emotion regulation among pre-service teachers. Variables of this research can be measured by scaled instruments. This research focuses on the actual data collected therefore research can be duplicate to similar population. Application to carry out research in Institute of Teacher Education was approved under Kementerian Pendidikan Malaysia Bahagian Perancangan Dan Penyelidikan Dasar Pendidikan on 17 November 2020 with reference number: KPM.600-3/2/3-eras(8615). Researcher is allowed to conduct the research at Institute of Teacher Education Campus Bahasa Melayu from 4 January 2021 to 30 June 2021.

Data Collection Techniques

Researcher uses Google Survey Form to collect data for this research. Survey link will be distributed through Email and Messaging apps to targeted population. Researcher aware that there are two possibilities of non-response questionnaire: noncontact of selected sample and refusal of sample. Nonresponse will affect the accuracy of statistical result. It will increase the sampling variance because the sample size is smaller than the original sought (Gavilanes, 2020). Therefore, researcher collects extra questionnaire response than original sought. 32 extra samples were selected using the same sampling method. Researcher will select the first 238 responses according to timing of respond. Researcher will repeat the method if the extra response is not sufficient to compensate the nonresponse sample.

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EISSN : 0128-164X
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Participants

238 pre-service teachers from an Institute of Teacher Education participated in the research via convenient sampling method. 55 respondents were male education students, and 183 respondents were female education students.

Table 1: Demographic Profile of Respondents of Field Study.

Demographic Variable		n	Percentage
Gender	Male Female	55 181	23.3 76.7
Age	18–20-year-old 20–22-year-old 22-year-old and above	154 77 5	65.3 32.6 2.1

Measures

Metacognitive Awareness Inventory (MAI) was used to measure respondents' metacognition. There are 52 items with 5-point Likert-scale in this inventory. These items are divided into 2 components: knowledge about cognition and regulation of cognition. Knowledge about cognition assess participants understanding of own cognition. There are 3 sub-components in this component: declarative, procedural, and conditional knowledge. Regulation of cognition assess participants ability to control own cognition. There are 5 sub-components in this component: planning, information management strategies, comprehension monitoring, debugging strategies and evaluation. Internal consistency coefficient of MAI was α=.95 and stability coefficient of MAI was α=.90 (Schraw and Dennison, 1994). Emotion Regulation Questionnaire (ERQ) was used to evaluate two emotion regulation strategies: Cognitive Reappraisal Facet and Expressive Suppression Facet. There are 10 items with 7-point Likert-scale in ERQ. The internal consistency coefficient of ERQ was α=.73 and stability coefficient of ERQ was α=.69 (Gross, J. J. & John O. P, 2003).

Reliability and Content Validity

Table 2: Pilot Test Result

	Internal consistency (α)	Corrected item correlation (α)
MAI	0.955	0.949 to 0.953
ERQ	0.626	0.431 to 0.601

Table 2 indicates the pilot test result of MAI and ERQ from 30 pre-service teachers. Internal consistency for MAI is α=0.955, corrected item correlation (α) for MAI ranged between 0.949 to 0.953. Remove any item from MAI leads to lower internal consistency. Therefore, researcher do not remove any item from the inventory. Internal consistency for ERQ is α=0.626, corrected item correlation (α) for ERQ ranged between 0.431 to 0.601. Remove any item from ERQ leads to lower internal consistency. Therefore, researcher do not remove any item from the questionnaire.

Content validity for Metacognitive Awareness Inventory and Emotion Regulation Questionnaire Malay version was validated by expert from Psychology field. Dr W. specializes

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in educational psychology. Dr W. major areas are motivation, self-efficacy and learning approaches. Dr W. is the Head of Counselling Department in Secondary School. Expert were required to validate each item based on 4 questions: 1) Has each item in the instrument consistent? 2) Are the items representative of concepts related to the dissertation topic? 3) Are the items relevance to the dissertation topic? 4) Are the Items clear in term of wording? 4 points Likert scale was used to evaluate the validity of each item for question 1 to 3: 1 = unclear; 2 = less clear; 3 = clear; 4 = very clear. 3 points Likert scale was used to evaluate the wording validity for each translated item as stated in question 4: 1=unclear, 2=clear, 3=very clear.
Content validation indicates that mean values for question 1 for all instruments were above 3 (m>3). It shows that each item was consistent in the instrument clearly. The mean values for question 2 for all instruments were above 3 (m>3). It shows that all items were representative of concepts related to the dissertation topic. The mean values for question 3 for all instruments were above 3 (m>3). It shows that all items were relevance to the dissertation topic. The mean values for question 4 for all instruments were above 2 (m>3). It shows that all items were clear in term of wording.

Data Analysis

Data screening and managing missing values was conducted prior to data analysis. Next, descriptive analysis of Metacognition and Emotion Regulation were conducted using IBM SPSS software. Lastly, the correlation between Metacognition and Emotion Regulation were conducted to test the hypothesis.

Result

Table 3: Correlations between MAI and ERQ

	Ave_MAI	Ave_ERQ
Ave_MAI		.328*
Ave_ERQ	.328*	

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

Table 3 is the correlations for Metacognitive Awareness Inventory (MAI) and Emotion Regulation Questionnaire (ERQ). The result indicates that there is a significant correlation between MAI and ERQ ($p<0.05$), the normal theory parameter estimate is .328. Based on the results, significant value between average MAI and average ERQ is < .05. Therefore, researcher reject null hypothesis there is no significant correlation between metacognition and emotion regulation. Researcher concludes that there is a significant correlation between metacognition and emotion regulation among pre-service teachers.

Table 4: Correlations among MAI, ESF and CRF

	Ave_MAI	Ave_CRF
Ave_MAI		.
Ave_CRF	.398*	
Ave_ESF	0.059	.161*

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Table 4 is the correlation for Metacognition (MAI), Cognitive Reappraisal Facet (CRF) and Expressive Suppression Facet (ESF). The result indicates that there is a significant correlation between MAI and CRF ($p<0.05$), the normal theory parameter estimate is .398. However, there is no significant correlation between MAI and ESF $p=0.367$ ($p>0.05$), the normal theory parameter estimate is 0.059. Lastly, there is a significant correlation between CRF and ESF $p=0.013$ ($p<0.05$), the normal theory parameter estimate is .161.

Table 5: Correlations among ESF, CRF, KoC and RoC

	Ave_CRF	Ave_ESF	Ave_KoC
Ave_CRF			
Ave_ESF	.161*		
Ave_KoC	.347*	0.082	
Ave_RoC	.398*	0.042	.893*

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

Table 5 is the correlation for Knowledge of Cognition (KoC), Regulation of Cognition (RoF), Cognitive Reappraisal Facet (CRF) and Expressive Suppression Facet (ESF). The result indicates that there is a significant correlation between KoC and CRF ($p<0.05$), the normal theory parameter estimate is .347. However, there is no significant correlation between KoC and ESF $p=0.21$ ($p>0.05$), the normal theory parameter estimate is 0.082. Next, there is a significant correlation between CRF and RoC ($p<0.05$), the normal theory parameter estimate is .398. However, there is no significant correlation between RoC and ESF $p=0.52$ ($p>0.05$), the normal theory parameter estimate is 0.042.

Discussion

There was a significant correlation between Metacognition and Emotion Regulation. Researcher concludes that there was a significant relationship between Metacognitive and Cognitive Reappraisal Facet (CRF). However, there was no significant relationship between Metacognitive and Expressive Suppression Facet (ESF). This relationship did not identify the independent and dependent variable (Taylor, 1990). Researcher treated metacognition and emotion regulation equally. Improvement in pre-service teachers' metacognitive ability improved CRF. Likewise, improvement in CRF improved their performance in metacognitive. However, improvement in metacognitive performance and ESF did not affects each other.

According to the result in sub-components in MAI and ERQ. Researcher concludes that there was a significant correlation between CRF and KoC. This indicates that higher knowledge of cognition is more likely to select Cognitive Reappraisal while facing negative emotion. At the same time, pre-service teachers who used Cognitive Reappraisal as their emotion regulation strategy had better understanding to knowledge of cognition. Based on the result, researcher concludes that there was a significant correlation between CRF and RoC. This indicates that better regulation of cognition was more likely to employ cognitive reappraisal. At the same time, those who used Cognitive Reappraisal as their emotion regulation had greater autonomy in regulation of cognition. This result is supported by research conducted on mood disorder patients. Findings shows that development of metacognition during Cognitive Behavioral

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Therapy (CBT) enable patient to control own thinking process during cognitive reappraisal process to reduce rumination on anxiety and depression feelings (Tecuta et al, 2021).

However, researcher concludes that there was no significant relationship between ESF to KoC and RoC. This shows that KoC and RoC does not relate to Expressive Suppression Facet. Pre-service teachers' KoC and RoC does not predict their engagement of expressive suppression facet as emotion regulation strategy. This finding is different from research conducted on mood disorder patients. The result shows that there was a significant negative relationship between metacognition and expressive suppression. Later research shows that development of metacognition reduces suppression frequency and increase reappraisal on self-efficacy. However, current research indicates that ESF is a passive reaction of emotion experience (Tecuta et al, 2021).

Findings of current research were supported by Chen (2016). Based on Chen's research on differences between individual's emotional experiences and different emotion regulation strategies, cognitive reappraisal facet able to reduce the negative emotional experience and expression of negative emotion. Whereas expression suppressive facet only reduces expression of negative emotion but did not impact on the negative emotion experience. In the other hand, suppression of positive emotional expression reduces the positive emotional experience for individual.

The role of metacognition in cognitive re-appraisal can be observed from mental time travel. According to Morgenroth et al (2020), mental time travel and perspective influences pre-service teacher's emotion regulation. The capacity of mental time travel and perspective are prominent features of metacognition. Setting up time perspective create more temporal cues as stimulation. Metacognitive skill helps pre-service teacher to embed and transform the current emotion experience by anticipating future consequence (Meyer & Schlesier, 2021). It requires pre-service teacher to activate KoC and RoC to integrate with previous experience. RoC engages pre-service teachers in counterfactual thinking while coping with negative emotion (Broomhall et al., 2017). Researcher suggests that teacher education should emphasize on time perspective ability to achieve, maintain, and restore the mental well-being of pre-service teacher. This ability is crucially important in their future career to cope with work-related stress. Mental time travel and flexible time perspective create KoC on the temporal distance of time (Macrynikola., et al., 2017). It helps pre-service teacher to cope with stressful thoughts and negative emotion experience caused by undesired circumstances.

Researcher suggests that time perspective to be a predictor of short-term and long-term mental well-being. Metacognition is crucial to engage pre-service teacher in the instrumental bottom-up and cognitive top-down process (Broomhall et al., 2017). Metacognitive awareness and regulation influence pre-service teacher's decision making and lead to different outcome that have direct impact on mental well-being (Morgenroth et al., 2020). Teacher education should encourage pre-service teacher to set long term goal such as personal' mission and vision in teaching career. Pre-service teachers who orientated towards future are more persistent and determine in pursuing their goals. They are less prone to defeated by the negative emotional experience while facing failure. Mental time travel also improves pre-service teacher Cognitive Reappraisal ability. They are focus on the long-term goals instead of the temporary failures (Bruehlman et al, 2016).

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According to Morgenroth et al (2020), time perspective influences the cognitive top-down approach in cognitive reappraisal process. KoC is the basic of cognitive top-down approach in the process. As an example, pre-service teacher who has positive memories towards her past is easier to recall the positive memories. Therefore, they are gaining the positive perspective while re-appraising the situation.

According to Gross's emotion regulation model (2015), cognitive process is sensitive to time perspective while pre-service teachers engage in cognitive reappraisal. Researcher suggests that teacher education should perceive time perspective as an effective tool to alter pre-service teacher emotion regulation strategy. Time perspectives modify emotional experience by changing its meaning and relevance. According to Bruehlman (2016), temporal distance by time perspective can promote CRF among pre-service teachers. Time perspectives arrange events according to psychological distance. It reduces the subjective emotional experiences which are proximal or distal. Researcher suggests pre-service teachers to use temporal, spatial, social, and hypothetical discuss to create the psychological distance. This is because if emotion experience is viewed as distal from one area, it is also viewed as distal for other areas.

According to Stolarski and Witowska (2017), metacognition involves in high level of psychological distance. It shifts subjective emotion and self-immersed perspective to a distal perspective onto the experience. Therefore, teacher education should develop pre-service teacher ability on temporal distance by re-direct them reflect on long-term goal. Mental time travel and flexibility in time perspective, help pre-service teacher to aware and regulate the temporal framing of events influence thought and emotion experience related to it (Morgenroth, Keck & Gensicke, 2020). KoC is stimulated to cope with the challenges and failures in teaching career.

Researcher suggests pre-service teachers to engage in four metacognitive temporal coping strategies. First, is the temporal self-distancing and perception of impermanence. According to Kross & Ayduk, (2017) self-distancing is a mental process of considering greater perspective. It helps pre-service teachers to facilitate adaptation of negative emotion experience from distance. Pre-service teachers should avoid self-immersed perspective in CRF because it is vulnerable to cognitive reappraisal outcome. Self-immersed perspective causes pre-service teachers to involve in rumination and aggravated the negative emotion reactivity (Morgenroth et al, 2021). The perception is supported by empirical study from Bruehlman (2015), impermanence of negative emotions, anticipating of better future and hindrance of stress-related thought are mediators for temporal self-distancing. Therefore, researcher suggests that temporal distancing can be an effective metacognitive tool to cope with negative emotion.

The second metacognitive temporal coping strategy is present centeredness. Pre-service teachers should engage in mindfulness process as a metacognitive strategy for self-regulation of attention. It prevents them from elaborating the observation and present-centered awareness of cognition and emotion moment by moment (Morgenroth et al., 2021). Hedonistic presents consequence from preference from present pleasure and associated with positive affect and sociability. Research shows that mindfulness develops better emotion regulation abilities. It increases pre-service teacher's psychological well-being (Heppner et al, 2015).

The third metacognitive temporal coping strategy is positive temporal refocusing. Researcher suggests pre-service teacher to imagine the positive future events or positive experience while

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facing work-related stress. Temporal distance reduces emotional reaction (Kross & Ayduk, 2017). RoC helps pre-service teacher redirects their thinking from actual negative events to the positive pleasant issues. Pre-service teachers involve in CRF when redirect thinking to positive events in future and positive experience. Pre-service teachers can adapt to the stressful environment because they are able to widen their focus of thinking hence regulate their emotional responses (Oettingen & Sevincer, 2018).

The last metacognitive temporal strategy is negative temporal contrasting. According to Epstude and Roese (2008), there are two directions in theory of counterfactual thinking. Upward counterfactual helps pre-service teachers to reflect on how past event could be better while anticipating the future. Downward counterfactual helps pre-service teachers to reduce negative affect by reflect on how an event could be worse than reality. It serves as a standard for comparison. Teacher education should introduce and encourage pre-service teachers to use metacognitive temporal strategy in teacher preparation. Frequent use of metacognitive temporal strategy in teacher preparation provides them a platform to practice the skills and prepare them for future profession.

Researcher emphasizes the role of metacognition in emotion regulation. Pre-service teachers who aware and regulate the way of thinking able to make the correct decision while responding to the emotional experience. Thinking about own thinking directs pre-service teachers to revisit the circumstances cognitively (Ramirez-Arellano et al, 2019). Besides, metacognition promotes persistent in emotion regulation process. Knowledge of cognition provides information to reappraisal the situation in Cognitive Reappraisal Facet. Regulation of cognition control thinking and stop rumination. Regulation of cognition plays important role in metacognitive temporal coping strategy. It changes time perspective to focus on the long-term goal instead of current difficulties. Research shows that metacognition does not relate to Expressive Suppression Facet. However, researcher stated that there is room of investigation on the regulation of cognition to suppress expression.

Conclusion

In Conclusion, there is a significant correlation between metacognition and emotion regulation. There is also a significant correlation between metacognition and cognitive re-appraisal facet. The importance of metacognition can be observed from its role in Cognitive Re-appraisal Facet. However, this research shows that no relationship between metacognition and Expressive Suppression Facet. Researcher encourages pre-service teachers to use Cognitive Re-appraisal Facet to cope with negative emotion experience because metacognitive enable pre-service teachers to re-evaluation the emotion experience. The process enables pre-service teachers to reduce expression of negative emotion and negative emotion experience. However, Expressive Suppression Facet only reduce the expression of negative emotion, but it does not reduce the negative emotion experience.

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International Journal of Education, Psychology and Counseling
IJEPC
EISSN : 0128-164X
Volume 7 Issue 45 (March 2022) PP. 343-355
DOI 10.35631/IJEPC.745027

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