International Journal of Education and Practice
2026 Vol. 14, No. 2, pp. 427-442
ISSN(e): 2310-3868
ISSN(p): 2311-6897
DOI: 10.18488/61.v14i2.4904

Factors affecting the emotional regulation skills of pedagogical students in learning activities

Hoan Vu Thuy[1]
Minh Bui Thi Hong[2+]
Hoan Ngo Thi Kim[3]
Thuy Do Thi[4]
Yen Tran Thi Kim[5]

[1,2,3,4]*Faculty of Education, Hanoi Metropolitan University, Vietnam.*
[1]*Email: vthoan@hnmu.edu.vn*
[2]*Email: bthminh@hnmu.edu.vn*
[3]*Email: ntkhoan@daihocthudo.edu.vn*
[4]*Email: dtthuy@daihocthudo.edu.vn*
[5]*Email: tranyen@vnu.edu.vn*

(+ Corresponding author)

Article History
Received: 17 October 2025
Revised: 19 February 2026
Accepted: 25 March 2026
Published: 10 April 2026

Keywords
Academic pressure
Emotional intelligence
Emotional regulation
Learning environment
Pedagogical students
Vietnam.

ABSTRACT

Emotional regulation is an indispensable skill that plays an imperative role in the comprehensive development of pedagogical students, directly affecting their learning outcomes, adaptability, and professional qualities. However, in the educational context of Vietnam, the development of emotional regulation skills among teacher education students remains understudied, in spite of the increasing psychological demands of academic and teaching environments. The current study aims to bridge this research gap by analyzing the impacts of psychological and contextual factors on emotional regulation skills of pedagogical students in Vietnam. A mixed-method research design was adopted, and a quantitative survey was conducted with 311 students from five universities in Vietnam. Confirmatory factor analysis (CFA) and multiple linear regression analysis were conducted to identify significant predictors. The results of CFA and multiple linear regression revealed that the learning environment has the strongest positive influence, whereas academic pressure exerted a strong negative impact on students' emotional regulation skills.

Contribution/Originality: The study contributes to improving students' emotional regulation skills, regulating learning pressure, designing learning environments, and providing appropriate psychological support programs for students to achieve their learning goals. The originality of this study is the necessity of moderated efforts in preparing teachers to create emotional support in learning and minimize sources of academic pressure as a critical way of preparing students psychologically to deal with pressure, thus enhancing their emotional resilience and professional development.

1. INTRODUCTION

The past few decades have witnessed a proliferation of research on emotion regulation, specifically within the fields of psychology, education, and neuroscience (Antonopoulou & Gkintoni, 2025; Rahaman, Govil, Khan, & Jevremov, 2024). The growing body of research has made emotion regulation one of the most vibrant areas in contemporary psychology (Koole, 2009; Roesler, 2024). Emotion regulation is understood as the process by which individuals influence the emotions they experience, when they occur, and how they express those emotions. Multiple studies have reported that individuals with good emotion regulation are more likely to cope with stress, have fewer anxiety and depression issues, and demonstrate better social adjustment (Aldao, Nolen-Hoeksema, & Schweizer, 2010;

Lopez et al., 2024). This capability of effectively regulating emotions serves an indispensable role in maintaining mental health, nurturing healthy social relationships, and supporting effective learning and working dynamics (Thompson, 2014).

In the field of pedagogy, self-regulation is often considered an integrated personal and professional characteristic of teachers, involving awareness of actions, emotions, motives, dispositions, and appropriate adjustment of activities according to the demands of the situation (Sáez-Delgado et al., 2022). A large body of literature on self-regulation shows that personal emotional self-regulation is highly correlated with academic achievement (Supervía & Quílez Robres, 2021; Yu, Huang, He, Wang, & Zhang, 2022). Thus, it can be asserted that the ability to regulate emotions is essential for the learning process, given that regulatory skills are reportedly interlinked with student achievement and motivation (Järvelä & Järvenoja, 2011). Emotional regulation helps students control their responses to academic stress while also supporting decision-making, critical thinking, and group collaboration, which in turn formulates and elevates their ability to nurture better study habits and strengthen their academic skills (Sarwar, Tara, Abid, & Dukhaykh, 2025; Vestad & Tharaldsen, 2022). However, the ability to regulate emotions is not a completely innate skill and thus necessitates its development through education, life experiences, social environment, and family support (Gross, 2015). Therefore, the acquisition of this soft skill becomes an essential requirement for pedagogical students since they will directly take on the role of educating and leading future generations (Adeoye, 2024; Kovalchuk et al., 2022).

Emotional regulation is both a personal psychological skill and a factor that has a profound impact on the quality of learning, the effectiveness of interactions in the school environment, as well as the ability to adapt to future careers. In the context of current educational innovation, the requirements for teachers are not only professional competence but also emotional competence, especially the ability to identify, control, and regulate emotions in the process of teaching and pedagogical communication (Jennings et al., 2017; Jennings & Greenberg, 2009). Pedagogical students, as the successor force, need to be comprehensively trained in knowledge, skills, and emotions to meet increasingly high professional requirements. In particular, emotional regulation skills are considered one of the fundamental factors that help students maintain a stable psychological state, effectively cope with stressful situations, thereby improving the quality of learning and teaching practice.

Although the importance of these emotional dimensions has aroused interest in global research, their practical implementation within teacher training programs varies considerably across contexts. For instance, in the case of Vietnam, teacher education programs rely heavily on academic proficiency, professional knowledge, and pedagogical skills, while often completely disregarding psychosocial skills. As a result, the majority of pedagogical students struggle with controlling their negative emotions, such as anxiety, stress, or frustration, when encountering learning difficulties or during their teaching internships (Dang, Weiss, Lam, & Ho, 2018). Even though several variables related to emotional regulation, such as personal characteristics, social-familial aspects, and academic environment, are believed to directly impact emotional regulation (Bonilla, Armadans, & Anguera, 2020), they are not comprehensively and systematically studied in Vietnam's teacher training context. Consequently, the current study intends to contribute to this paradigm by exploring and identifying the factors affecting the emotional regulation skills of pedagogical students in learning activities, based on the synthesis of theory and previous empirical studies. Clearly identifying groups of influencing factors is expected to not only contribute to filling the theoretical gap on emotional competence in pedagogical education but also serve as a basis for proposing solutions to support comprehensive development for pedagogical students, aiming to train teachers who are both professionally competent and emotionally and humane.

2. LITERATURE REVIEW

2.1. Social and Emotional Learning (SEL) Model

Social and emotional learning (SEL) is one of ten positive educational approaches that help students enhance their ability to integrate thinking, emotions, and behaviors in ways that achieve positive outcomes in both school and life (Jones & Doolittle, 2017). The Collaborative for Academic, Social, and Emotional Learning (CASEL) establishes the concept of social and emotional learning as a foundation, defining it as learning that includes the processes through which children and adults acquire and develop the knowledge, skills, and attitudes needed to understand and manage emotions, achieve positive outcomes, meet goals, demonstrate empathy, maintain positive relationships, and make responsible decisions (CASEL, 2013). The connotations of the elements in this model include:

1. *Self-awareness:* The ability to accurately identify an individual's emotions and thoughts and their influence on behavior.
2. *Self-management:* The ability to regulate an individual's emotions, thoughts, and behaviors effectively in different situations.
3. *Social awareness:* The ability to take the perspective of others and empathize with people from different backgrounds and cultures, to understand social norms of behavior, and to identify support resources from family, school, and community.
4. *Social skills:* The ability to establish and maintain healthy and rewarding relationships with different individuals and groups.
5. *Responsible decision making:* The ability to make constructive and respectful choices about personal behavior and social interactions.

This model has been applied by many countries in the process of educating learners to establish an equitable learning environment and coordinate practices in the classroom, school, family, and school community to improve learners' social, emotional, and academic abilities (Elias, 2009).

SEL is considered to be taught and developed in schools to help students increase their thinking, emotional, and behavioral abilities, bringing positive results for learning and life (Jones & Doolittle, 2017). Through establishing a safe learning environment, paying attention to the initiatives of friends and family, improving and managing the classroom, teaching practices, and building community in the school, SEL has promoted the development of students' emotional and social competencies (Hawkins, Smith, & Catalano, 2004). Specifically, SEL builds children's skills in recognizing and managing emotions, taking the perspectives of others seriously, setting positive goals, making responsible decisions, and handling interpersonal situations (Greenberg et al., 2003). This helps to leverage personal and environmental resources so that students feel valued, experience greater intrinsic motivation, develop social and emotional relationships, and improve academic performance, health-promoting behaviors, and citizenship.

2.2. Concept and Impact of Emotional Regulation on Learning Activities

Self-regulation is a cyclical process for adjusting a person's thoughts, emotions, and planned actions to achieve set goals. It is accepted as one of the defining characteristics of humans, who have the unique ability to adapt to different conditions and plan various strategies for problems (Zimmerman, 2000). Self-regulation is the ability of an individual to change his or her behavior, thereby enhancing the flexibility and adaptability of human behavior, allowing people to adjust their actions over a wide range, and providing an important basis for the popular notions of free will and socially desirable behavior (Baumeister & Vohs, 2007).

Thompson (1994) defined emotion regulation as "the external and internal processes responsible for monitoring, evaluating, and adjusting emotional responses, especially their intensity and timing characteristics, to achieve one's goals. Gross (1998) also agreed that emotion regulation is a process in which individuals influence the types of emotions they have, when they have them, and how they experience and express them. According to the process

model of emotion regulation, proposed by Gross (1998), individuals can use a variety of strategies to control emotions, including cognitive modification, behavioral modification, or situational modification.

Emotion regulation skills include: the ability to consciously process emotions/be aware of emotions (Lischetzke & Eid, 2003) accurately interpret bodily sensations associated with emotions (Marchesi, Fontò, Balista, Cimmino, & Maggini, 2004) understand the signs of emotions (Southam-Gerow & Kendall, 2002) accept emotions (Greenberg, 2002) tolerate emotions (Kabat-Zinn, 2003) cope with emotionally distressing situations to achieve important goals, and actively regulate negative emotions to feel better (Salovey, Mayer, Goldman, Turvey, & Palfai, 1995).

Emotion regulation affects a person's experience and expression of emotions (Rutherford, Wallace, Laurent, & Mayes, 2015) is a complex skill and is recognized to develop throughout the human lifespan (Zimmermann & Iwanski, 2014). Emotion regulation can influence every aspect of functioning, including mental and physical health, as well as the relationships that are formed and maintained with others (Koole, 2009). Difficulties in emotion regulation have been implicated in a number of clinical disorders, including generalized anxiety disorder (Etkin, Prater, Hoeft, Menon, & Schatzberg, 2010) and depression. In addition, changes in emotion regulation strategies may serve as both a protective factor and a risk factor for psychopathology (Aldao et al., 2010). An individual's ability to regulate emotions appears to change throughout life (Bariola, Hughes, & Gullone, 2012). However, there are significant changes to the human cognitive and affective systems from adolescence to adulthood. This may influence the process of emotion regulation (Steinberg, 2005; Steinberg & Morris, 2001). During emotion regulation, individuals may increase, maintain, or decrease positive and negative emotions. These changes may occur in the types of emotions experienced, the timing of emotional responses, and the ways emotions are experienced and expressed. Notably, the emotional changes produced by emotion regulation may or may not bring individuals closer to their desired emotional states.

Students with higher levels of emotional regulation are able to perceive their own emotions, express their emotions accurately, and regulate their emotional responses effectively. Therefore, emotional regulation supports students' emotional and intellectual development, helping to build healthy relationships with peers (Peachey, Wenos, & Baller, 2017). Young people who do not regulate their emotions well are more likely to be depressed or anxious, blame themselves, and are less likely to reappraise their cognitions, thereby increasing the intensity of negative emotions (Garnefski, Kraaij, & van Etten, 2005). This study suggests that students' emotional regulation skills in learning activities are the process by which individuals actively use different strategies to regulate their emotions in order to adapt to the learning environment and achieve learning goals. It proposes a model of the emotion regulation process, consisting of five stages: situation selection, situation adjustment, attention redirection, cognitive change, and response adjustment. This model provides a theoretical foundation for analyzing individuals' ability to control and regulate emotions in the learning context. In the educational environment, emotion regulation skills play a fundamental role not only in learning but also in the formation of professional qualities. Emotion regulation skills help individuals cope with learning pressures and prepare them for the role of teachers, who regularly interact with students in diverse emotional situations. Therefore, teacher education students are expected to develop the ability to control their own emotions and guide future students to regulate their emotions positively (Sutton, Mudrey-Camino, & Knight, 2009). In the pedagogical learning environment, students often face situations that require the ability to respond flexibly to emotions, such as presenting in front of the class, practicing teaching, working in groups, or receiving evaluation from lecturers. Therefore, it is very necessary to practice and understand the factors that affect emotional regulation in learning with pedagogical students.

2.3. Factors Affecting the Emotional Regulation Skills of Pedagogical Students in Learning Activities

Emotion recognition involves identifying current emotional states in oneself. It is expressed through facial expressions, gestures, and body language, enabling individuals to assess their own emotions or those of others. Emotional regulation relies heavily on self-awareness, which encompasses the ability to analyze and perceive oneself, including understanding personal identity, potential, emotions, strengths, and weaknesses. Emotional self-awareness

is fundamental and is considered the initial step in the process of emotional regulation. Research by Jordan and Ashkanasy (2013) demonstrated that individuals with a clear awareness of their emotions tend to exhibit more effective adaptive behaviors, particularly in academic settings. Consequently, the first hypothesis is proposed based on these insights.

H_1: Emotional self-awareness (SA) has a significant positive impact on students' emotional regulation skills in learning.

Emotional intelligence is a concept modeled through four main skills, including: perceiving and expressing emotions, accessing and creating emotions to support thinking; understanding emotions and perceiving emotions, and regulating emotions to promote emotional and intellectual development. Emotional intelligence acts as an "early warning system" that helps individuals adjust their behavior, responses, and strategies to adapt to learning pressures (Mayer, Salovey, & Caruso, 2004). In the university environment, where students often face stress, anxiety, and performance pressure, the ability to be self-aware of emotions will create an important premise for effective emotional regulation (Gross, 2015). The findings of Amponsah, Salifu, Yeboah, and Commey-Mintah (2024) and Bereded, Abebe, and Negasi (2025) show that emotional intelligence is positively related to learning activities, especially learning motivation (García-Sancho, Dhont, Salguero, & Fernández-Berrocal, 2017; Quílez-Robres, Usán, Lozano-Blasco, & Salavera, 2023). Students with high emotional intelligence often know how to relieve stress, handle school conflicts, and maintain stability in learning, thereby leading to better academic performance (Salleh, Khairi, Halim, Idrus, & Rozali, 2024). Thus, the second hypothesis is formulated as.

H_2: Emotional intelligence (EI) has a significant positive impact on students' emotional regulation skills in learning.

Social and family factors play a particularly important role during adolescence, when students face many psychological, academic, and social changes. The family is not only the starting point for individuals to learn how to identify and express emotions but also a solid support in the process of emotional regulation through close relationships, acceptance, and emotional guidance (Morris, Silk, Steinberg, Myers, & Robinson, 2007). A warm, supportive, and low-conflict family environment facilitates students' development of positive emotion regulation strategies (Eisenberg et al., 2003). Social relationships with friends, faculty, and the community also contribute to shaping students' ability to manage emotions in an academic environment. Studies show that when students feel supported by society and family, they tend to cope better with academic pressure and maintain stable mental health (Reeve, Jang, Hardre, & Omura, 2002). Conversely, a lack of emotional support or experiencing prolonged family conflicts can increase the risk of stress and reduce the ability to regulate emotions, negatively affecting academic performance and social relationships in college (Deng et al., 2022). In addition, due to the influence of East Asian culture, especially in Vietnam, students often exhibit signs of calmness and respect (Matsumoto, Yoo, & Nakagawa, 2008). This sometimes limits the development of healthy emotional regulation capacity in students. The third hypothesis is developed as.

H_3: Social-family support (SS) has a significant impact on students' emotional regulation skills in learning.

The learning environment is the primary space where students develop emotional regulation skills. In addition to acquiring professional knowledge, pedagogical students must also practice professional qualities and skills. This necessitates maintaining high emotional balance in all circumstances (Pekrun, Goetz, Titz, & Perry, 2002). Furthermore, relationships with lecturers and classmates significantly influence students' emotional psychology and behavior (Peachey et al., 2017). Students with a positive group of friends will have the opportunity to share their emotions, learn social skills, and thereby develop more effective emotional regulation strategies (Wong, Dosanjh, Jackson, Rünger, & Dudovitz, 2021). On the contrary, negative relationships or social isolation can lead to emotional disorders and inappropriate defensive behavior. In an environment of respect, encouragement, and listening, students will be confident in expressing their emotions and learn to control them in a more positive way (Roorda, Koomen, Spilt, & Oort, 2011). In addition, teaching internship experiences are a decisive stage in the formation of emotional regulation capacity. This is the time when students are exposed to real-life situations, facing new emotions such as anxiety, pressure, or confusion. If properly prepared and supported, students will learn how to manage their emotions

and increase their confidence in the teaching environment (Zembylas & Schutz, 2009). The fourth hypothesis can be proposed as:

H_5: Learning environment (LeE) has a significant impact on students' emotional regulation skills in learning.

Academic pressure includes stress from homework, exams, family expectations, and competition for grades (Wuthrich, Jagiello, & Azzi, 2020). When individuals feel that they lack sufficient resources to cope with academic demands, they are prone to stress and emotional disorders. Studies by Cherry and Wilcox (2020) and Freire et al. (2020) have both shown that academic stress is closely related to emotional dysregulation in college students. Students who experience high levels of stress often have difficulty managing their emotions, leading to impaired emotional regulation, which negatively affects mental health and academic performance. The results of this study emphasize that enhancing emotional regulation skills can help reduce academic stress and improve students' psychological health. These studies are especially useful for teacher education students who often face pressure during their training and future teaching practice. Therefore, the fifth and final hypothesis is formulated as.

H_6: Academic pressure (AP) has a significant impact on students' emotional regulation skills in learning.

3. RESEARCH METHODS AND DESIGN

The current study adopted a mixed-method research design, relying on both secondary and primary data sources. Qualitative research methods were employed to establish the research background, theoretical framework, and overview of the research problem, serving as a foundation for developing the survey. Conversely, quantitative research methods were utilized to analyze the collected data. In this study, the independent variables are the influencing factors, which include five elements: (1) Emotional self-awareness, (2) Emotional intelligence, (3) Social-family support, (4) Learning environment, and (5) Learning pressure. These factors have been conceptualized and incorporated into the questionnaire design, with 18 observed variables. The dependent variable is the skill of regulating emotions during students' learning activities, measured through three observed variables: (1) the ability to recognize when emotions negatively impact learning, (2) the ability to apply effective strategies to overcome negative emotions and transform them into motivation, and (3) the ability to maintain emotional stability throughout the learning process. SPSS software was used to assess the reliability of the scale, perform exploratory factor analysis (EFA), regression analysis, and hypothesis testing. AMOS was employed to analyze confirmatory factor analysis (CFA).

All items are rated on a 5-point Likert scale, from 1 being "Totally disagree" to 5 being "Totally agree." The initial draft of the questionnaire was sent to four psychology experts from universities and research institutes in Vietnam to review the validity of the content and its suitability to the Vietnamese context, as well as to refine the clarity and internal consistency of the items. A pilot survey was conducted with 86 students at Hanoi Capital University to assess the scale's stability. To ensure the reliability of the scale, all observed variables were evaluated using Cronbach's Alpha coefficient. The results indicated that the Cronbach's alpha coefficient for all 18 independent variables and 3 dependent variables was greater than 0.3, with each factor's alpha ranging between 0.7 and 0.9, demonstrating that the scale was appropriate. Subsequently, the official survey was conducted at five major universities in Vietnam, targeting students enrolled in the faculties of education. A total of 328 valid responses were collected through both online and direct distribution methods, ensuring a representative and diverse sample. After data cleaning, 311 valid ballots were obtained, resulting in a response rate of 94.8%. According to Hair, Black, Babin, Anderson, and Tatham (2006), the minimum sample size needs to be five times the total number of observed variables. With 21 observed variables, the sample size of 311 is three times larger than the minimum sample size, so it meets the requirements of the study. The sample size was taken from students at five universities in Vietnam, as listed in Table 1.

Table 1. Descriptive statistics of demographic factors.

University	Frequency	Percentage	Gender	
			Male	Female
Hanoi Metropolitan University	58	18.65%	26	32
Hanoi National University of Education	65	20.90%	27	38
Thai Nguyen University of Education	64	20.58%	29	35
Hai Phong University	61	19.61%	30	31
VNU - University of Education, Hanoi	63	20.26%	30	33
Total	311	100%	142	169

As seen from Table 1, the number of students from each university was nearly similar to ensure balanced representation and avoid analytical bias in the results. Each university accounts for an average of 20% of the dataset. The number of female students in the surveyed universities was higher than that of male students, but the difference was not statistically significant.

Table 2. Descriptive statistics of mean values and Cronbach's alpha coefficient.

Factors	Code	Cronbach's alpha	Item	Corrected item total correlation	Cronbach's alpha if item deleted	Means	Std. Dev.
Learning environment	LeE	0.889	LeE1	0.763	0.861	3.91	1.435
			LeE2	0.792	0.835	3.90	1.449
			LeE3	0.796	0.832	3.86	1.428
Emotional intelligence	EI	0.824	EI1	0.649	0.778	3.59	1.343
			EI2	0.651	0.777	3.96	1.373
			EI3	0.671	0.767	4.03	1.430
			EI4	0.625	0.790	3.97	1.508
Social-family support	SS	0.751	SS1	0.622	0.616	3.94	1.451
			SS2	0.569	0.679	3.90	1.412
			SS3	0.547	0.703	3.90	1.369
Emotional self-awareness	SA	0.869	SA1	0.751	0.816	3.94	1.451
			SA2	0.762	0.804	3.90	1.412
			SA3	0.738	0.827	3.90	1.369
Academic pressure	AP	0.860	AP1	0.825	0.845	2.30	1.470
			AP2	0.747	0.857	2.32	1.477
			AP3	0.739	0.858	2.32	1.474
			AP4	0.793	0.850	2.46	1.624
			AP5	0.841	0.842	2.32	1.451
Emotion regulation strategy	ERS	0.805	ERS1	0.652	0.733	4.01	1.332
			ERS2	0.635	0.750	4.05	1.408
			ERS3	0.668	0.715	4.04	1.399

The descriptive statistics presented in Table 2 showed that each of the measured variables had mean values ranging from 2.30 to 4.05, indicating a neutral to positive response trend on a 5-point Likert rating scale from the survey participants. The group of variables with a mean > 3.90 accounts for the majority of the dataset, reflecting a relatively high level of consensus among respondents for the measured statements, indicating a positive evaluation trend in related aspects (Hair, Black, Babin, Anderson, & Tatham, 2010). The academic pressure variables (i.e., AP1, AP2,..., AP5), with mean values ranging from 2.30 to 2.46, showed a lower level of consensus, indicating that participants had a cautious or neutral to negative assessment of these measurement contents. This is a group that can be examined further to better understand barriers or cognitive differences. The standard deviation of the variables is in the range of 1.33–1.62, reflecting a reasonable level of dispersion, which indicates the diversity in responses among students participating in the survey without any unusual signs in the data.

At the same time, Cronbach's alpha coefficient for each scale ranged from 0.75 to 0.88, indicating high internal reliability. The data collected through this tool provided the basis for subsequent statistical analyses, including

exploratory and confirmatory factor analysis (EFA/CFA) and multiple regression models, to examine the relationship between the identified factors and students' emotional regulation ability. Analyzing the results of the Cronbach's alpha test, the components of all scales meet the requirements, with Cronbach's alpha ranging from 0.751 to 0.889, which indicates that the scales are at a good level.

4. RESULT

4.1. Exploratory Factor Analysis (EFA)

The results of exploratory factor analysis (EFA) of the survey results, as illustrated in Table 3, show that all factors' factor loadings were above 0.5, which ensures the convergence and discrimination of the data when conducting EFA. The KMO coefficient was 0.871 ($0.5 < KMO < 1$), which is completely consistent with the actual data. In Table 1, it was noted that the Bartlett test at the Sig level was 0.000, much lower than 0.05, indicating that the observed variables are linearly correlated with the representative factor. All eigenvalues were greater than 1, indicating that they are all significant and retained. The total variance extracted was 77.267%, exceeding 50%, which proves that the five extracted factors can explain 77.267% of the variability of the data of 18 observed variables participating in EFA. Additionally, the analysis of Cronbach's Alpha test results from the official survey showed that the components of all scales met the requirements, with Cronbach's Alpha ranging from 0.751 to 0.889, indicating that the scale is at a good level.

Table 3. EFA results of the components.

Observed Variables	Elements				
	1	2	3	4	5
AP5	0.925				
AP1	0.914				
AP4	0.882				
AP3	0.859				
AP2	0.851				
EI1		0.833			
EI3		0.808			
EI2		0.773			
EI4		0.756			
SA3			0.870		
SA2			0.841		
SA1			0.838		
LeE2				0.887	
LeE1				0.875	
LeE3				0.862	
SS1					0.828
SS3					0.818
SS2					0.788
KMO coefficient		0.871			
Bartlett's test	Chi-square	3769.623			
	Df	153			
	Sig.	0.000			
	Eigen value	Extracted variance		Cronbach's alpha	
AP	6.311	35.061		0.849	
EI	2.253	12.519		0.824	
SA	2.145	11.916		0.889	
LE	1.800	10.000		0.869	
SS	1.398	7.769		0.751	

4.2. Confirmatory Factor Analysis (CFA)

The CFA model depicted in Figure 1 includes 6 latent factors, including Learning Environment (LeE), Academic Pressure (AP), Emotional Intelligence (EI), Social-Family Support (SS), Emotion Regulation Strategy (ERS), and

Emotional Self-awareness (SA), which are measured by a total of 21 observed variables. The CFA results show that the measurement model has a very good fit, with the following indices:

Chi-square/df = 0.950 (<3): The model fits well with the actual data (Hu & Bentler, 1999).

GFI = 0.954, CFI = 1.000, TLI = 1.013: All exceed the threshold of 0.90, indicating an excellent fit of the model (Hair et al., 2010).

RMSEA = 0.000, PCLOSE = 1.000: confirms low approximation error; the measurement model is not considered to be poorly suited.

RMSEA of 0 represents the ideal level in CFA. This indicates that the indicators fully meet the criteria for the suitability of the CFA model according to international standards. Therefore, the model does not require adjustments since the factors are well-organized and accurately reflect the underlying concepts of each factor. All observed variables exhibited high factor loadings (≥0.60), demonstrating good convergence with the latent factors (Hair et al., 2010). Specifically, the indicators for factors such as LeE, AP, EI, and SS all have loadings ranging from 0.69 to 1.00, indicating strong discrimination between factors. The lowest loadings were EI1 (0.66) and EI2 (0.69); although these are slightly below 0.70, they still fall within the acceptable threshold (Fornell & Larcker, 1981). This result allowed multiple regression to assess the impact level of each factor.

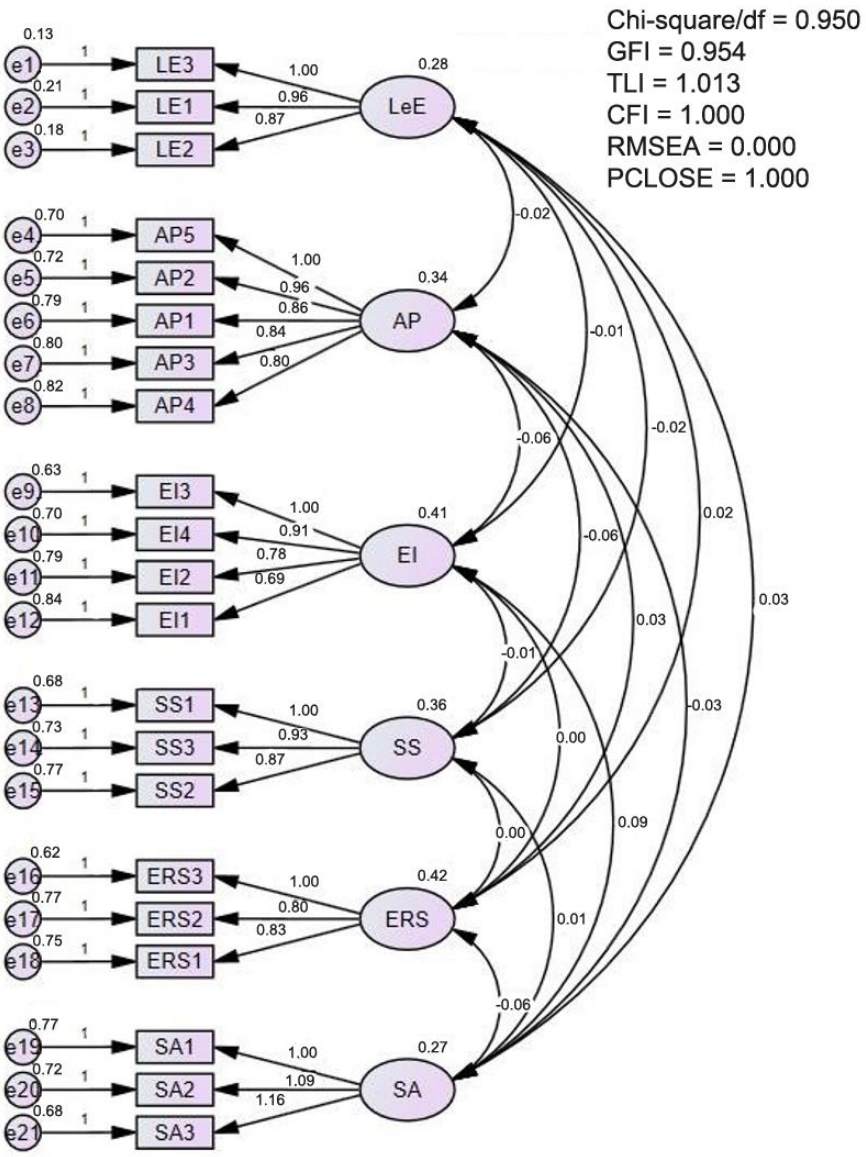

Figure 1. CFA Results.

4.3. Regression Analysis and Hypothesis Testing

Multiple regression analysis was used to assess the impact of each factor on students' regulatory skills in learning activities. The regression results are summarized in the Model Summary, ANOVA, and Coefficient tables presented subsequently.

Table 4. ANOVA and model summary.

Model Summary	R	R square	Adjusted R square	Std. error of the estimate	Durbin-Watson
	0.785a	0.617	0.611	0.73001	1.890
ANOVA regression	Sum of squares	df	Mean square	F	Sig.
	261.805	5	52.361	98.253	0.000b

Table 5. Coefficient and research hypothesis testing results.

Hypothesis	Model	Standardized coefficients	t	Sig.	Collinearity statistics		Results
	Constant	Beta	10.378	0.000	Tolerance	VIF	
H1	F_SA	0.075	2.015	0.045	0.900	1.111	Accepted
H2	F_EI	0.084	2.207	0.028	0.870	1.149	Accepted
H3	F_SS	0.075	2.083	0.038	0.959	1.043	Accepted
H4	F_LeE	0.289	6.832	0.000	0.702	1.424	Accepted
H5	F_AP	-0.514	-11.683	0.000	0.648	1.543	Accepted

The results of linear regression analysis, presented in Tables 4 and 5, revealed that the model with five independent variables was capable of explaining 61.7% of the variance of the dependent variable, which is emotional regulation skills. The coefficient $R^2 = 0.617$ showed that the model has a good level of explanation and is suitable in the context of this study. In particular, the variable F_LeE (learning environment) is the factor with the strongest positive impact on F_ERS, with a Beta coefficient = 0.289 and a significance value of Sig. < 0.001, confirming the key role of improving self-awareness in developing emotional regulation skills. The factors F_EI, F_SS, and F_SA also have a positive and statistically significant influence (sig. < 0.05), indicating that emotional intelligence, social support, and self-awareness all significantly contribute to improving F_ERS. The regression equation is determined as follows.

$$Y = 0.289 * F\_LeE + 0.084 * F\_EI + 0.075 * F\_SS + 0.075 * F\_SA - 0.514 * F\_AP + \varepsilon \quad (1)$$

In particular, the variable F_AP (academic pressure) has the largest negative regression coefficient (Beta=-0.514; Sig.< 0.001), reflecting the clear negative impact of academic pressure on emotional regulation skills. This emphasizes that if not well managed, academic pressure can impair students' emotional regulation ability. In addition, the VIF coefficients are all <1.6, indicating that there is no multicollinearity problem in the model, ensuring the stability and reliability of the regression estimates.

Overall, the linear regression model was used to test the level of the independent variables on the dependent variable. According to Hair et al. (2010), the significance level of 0.05 is a common standard for determining statistically significant differences in a regression model. In the current results, all variables had *p*-values < 0.05, which shows that the relationships between the independent and dependent variables were statistically significant, meaning that the probability that the results occur by chance is very low (< 5%). This strengthens the reliability of the model in explaining the variation of the dependent variable based on the explanatory variables. The results of the hypothesis testing, as depicted in Table 5, revealed *p*-values of < 0.05 for each hypothesis, indicating that all research hypotheses were accepted. Thus, all five factors, namely emotional self-awareness, emotional intelligence, social-family support, learning environment, and learning pressure, are reported to have an influence on students' emotional regulation skills at different levels.

5. DISCUSSION

The results of the current research verified that emotional regulation skills of pedagogical students during the learning process are significantly influenced by five main groups of factors that include emotional self-awareness, emotional intelligence, social-family support, learning environment, and learning pressure. Although each factor plays a separate role, altogether they have a mutual relationship in forming and strengthening the ability to regulate emotions, an essential capacity in the teaching profession.

Firstly, emotional self-awareness is identified as one of the fundamental factors that help students recognize and accurately assess their own emotional states, thereby enabling them to respond appropriately. The survey results showed that students who were able to recognize changes in emotions during the learning process tended to have better emotional regulation. This finding is consistent with the process model of emotional regulation, in which emotional recognition is the first step in the regulation process. Individuals who are more aware of their emotions tend to proactively regulate their adaptive behavior more effectively in academic settings (Jordan & Ashkanasy, 2013). This result also suggests that students need to proactively practice self-awareness and emotional intelligence skills through activities such as writing an emotional diary or participating in an emotional sharing group. In pedagogical environments, where emotional situations often arise, such as standing in class or practicing teaching, emotional self-awareness helps students adjust their behavior to suit their roles as teachers.

Secondly, emotional intelligence is demonstrated through the ability to control, understand, and use emotions to achieve positive learning goals. Students who are able to stay calm under pressure, confidently face challenges, and know how to use positive emotions to motivate learning tend to have better emotional regulation. This reinforces the SEL model, in which it is argued that emotional intelligence is the central factor determining emotional competence in learning. This finding is also supported by the results reported by Quílez-Robres et al. (2023) and Salleh et al. (2024), who showed that EI is closely related to learning outcomes and students' adaptability. In the school environment, especially in the field of education, EI plays an important role in maintaining emotional stability, increasing perseverance, cooperation, and problem-solving ability. Thus, it can be asserted that EI is especially important in the context of modern education when students need to be autonomous in learning and adapt to rapid changes in technology and teaching methods.

Thirdly, support from family and friends acts as a strong support factor, helping students overcome negative emotions and maintain a balanced state in learning. Students who feel shared, understood, listened to, and encouraged are often able to control their emotions better, especially in high-pressure learning situations. This result is consistent with the social support theory of Eisenberg et al. (2003), which suggests that emotional support and social evaluation help reduce the negative effects of stress. Similarly, Cobb (1976) also argued that such support helps individuals reduce feelings of stress and increase emotional resilience. In an educational environment, students with a good support system often feel more secure when facing academic pressure. In particular, emotional support from family and friends helps students practice emotional regulation through observation, learning, and practice.

Fourthly, the learning environment substantially contributes to shaping students' goals, motivations, and provides means for academic activities and interpersonal communication. A friendly and supportive learning environment is characterized by its positivity, effectiveness, creativity, and encouragement, contributing to a learner-oriented atmosphere. This sort of environment adequately facilitates the interaction between learners and teachers, among peers, and between people and their environment. Hence, it can be implied that the quality of the learner's output is determined by physical, emotional, intellectual, and aesthetic development, influencing personality development and achievement of expected learning outcomes. The present results revealed that the learning environment has the strongest and most positive influence on students' emotional regulation skills (Beta = 0.289). The findings from this study align with the emotion theory of Pekrun et al. (2002), indicating that Positive emotions will appear if students feel able to control their learning outcomes and appreciate the value of learning activities. In

addition, positive relationships between lecturers and students, as mentioned in the study of Roorda et al. (2011), are also confirmed to be factors that increase school commitment and emotional competence.

Fifthly and finally, academic pressure has the strongest yet negative impact (Beta = -0.514) on the ability to regulate emotions. Symptoms such as anxiety before exams, fatigue due to homework, or pressure from competition for grades can disturb emotions, leading to reduced learning efficiency. This finding is strongly supported by the stress model of Lazarus and Folkman (1984), which states that without effective coping strategies, academic stress will impair the ability to regulate personal emotions. This result is also consistent with the conclusion presented by Linnenbrink (2007), who suggested that uncontrolled negative emotions will hinder students' self-regulated learning process. In the context of teacher education students, academic pressure comes not only from results but also from expectations about what a future teacher should be like. All in all, without effective coping strategies, stress can lead to a decline in emotional regulation skills. Therefore, schools need to implement support programs, such as emotional regulation skills training and mindfulness-based interventions, to help students, especially teacher education students, develop the ability to effectively manage emotions in challenging learning environments.

6. CONCLUSION

To put it succinctly, the current study has identified and analyzed five groups of factors that influence the emotional regulation skills of teacher education students during the learning process, including emotional self-awareness, emotional intelligence, social-family support, learning environment, and learning pressure. In accordance with the survey results, personal and environmental factors are closely related to students' ability to control emotions in stressful learning situations. It was noted that emotional regulation skill is among the most imperative soft skills, specifically for students of education who will serve in the future generation of educators and inspirers. The continual development of these elements is guaranteed to not only enhance learning effectiveness but also contribute to the formation of emotionally resilient teachers who are ready to adapt to diverse situations in their future careers. This implies that the development of emotional regulation skills could be an important goal in the prevention and treatment of emotion-related mental health problems. Overall, there is good reason to believe that research on emotional regulation will continue to grow, with the growing recognition that emotional regulation plays a key role in physical and psychological health. Consequently, future researchers are recommended to conduct studies in the sphere of how digital tools, mindfulness practices, and emotion-focused curriculum can be incorporated in teacher training to promote sustained emotional competence.

Funding: This study received no specific financial support.
Institutional Review Board Statement: This study was approved by the Institutional Review Board of Hanoi Metropolitan University, Vietnam under protocol number (IRB No. C2021-29), dated October 4, 2021. Informed verbal consent was obtained from all participants, and all data were anonymized to protect participant confidentiality.
Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.
Competing Interests: The authors declare that they have no competing interests.
Authors' Contributions: All authors contributed equally to the conception and design of the study. All authors have read and agreed to the published version of the manuscript.
Disclosure of AI Use: The author(s) used OpenAI's ChatGPT to edit and refine the language in the article. All outputs were reviewed and verified by the authors.

REFERENCES

Adeoye, M. A. (2024). Education in flux: Nurturing minds for the future. *Proceeding of International Conference on Education, Society and Humanity*, *2*(1), 73–82.

Aldao, A., Nolen-Hoeksema, S., & Schweizer, S. (2010). Emotion-regulation strategies across psychopathology: A meta-analytic review. *Clinical Psychology Review*, *30*(2), 217-237. https://doi.org/10.1016/j.cpr.2009.11.004

Amponsah, K. D., Salifu, I., Yeboah, R., & Commey-Mintah, P. (2024). Emotional intelligence and academic performance: How does the relationship work among pre-service teachers in Ghana? *Cogent Education*, *11*(1), 2305557. https://doi.org/10.1080/2331186X.2024.2305557

Antonopoulou, H., & Gkintoni, E. (2025). *The impact of neuroscience on emotional regulation in learning and academic performance.* Paper presented at the INTED2025 Proceedings, International Technology, Education and Development Conference.

Bariola, E., Hughes, E. K., & Gullone, E. (2012). Relationships between parent and child emotion regulation strategy use: A brief report. *Journal of Child and Family Studies*, *21*(3), 443-448. https://doi.org/10.1007/s10826-011-9497-5

Baumeister, R. F., & Vohs, K. D. (2007). Self-regulation, ego depletion, and motivation. *Social and Personality Psychology Compass*, *1*(1), 115-128. https://doi.org/10.1111/j.1751-9004.2007.00001.x

Bereded, D. G., Abebe, A. S., & Negasi, R. D. (2025). Emotional intelligence and academic achievement among first-year undergraduate university students: The mediating role of academic engagement. *Frontiers in Education*, *10*, 1567418. https://doi.org/10.3389/feduc.2025.1567418

Bonilla, R. P., Armadans, I., & Anguera, M. T. (2020). Conflict mediation, emotional regulation and coping strategies in the educational field. *Frontiers in Education*, *5*, 50. https://doi.org/10.3389/feduc.2020.00050

CASEL. (2013). *CASEL guide: Effective social and emotional learning programs.* Chicago, IL: CASEL.

Cherry, M. L., & Wilcox, M. M. (2020). Decreasing perceived and academic stress through emotion regulation and nonjudging with trauma-exposed college students. *International Journal of Stress Management*, *27*(2), 101-110. https://doi.org/10.1037/str0000138

Cobb, S. (1976). Social support as a moderator of life stress. *Psychosomatic Medicine*, *38*(5), 300-314. https://doi.org/10.1097/00006842-197609000-00003

Dang, H.-M., Weiss, B., Lam, T., & Ho, H. (2018). Mental health literacy and intervention program adaptation in the internationalization of school psychology for Vietnam. *Psychology in the Schools*, *55*(8), 941-954. https://doi.org/10.1002/pits.22156

Deng, Y., Cherian, J., Khan, N. U. N., Kumari, K., Sial, M. S., Comite, U., . . . Popp, J. (2022). Family and academic stress and their impact on students' depression level and academic performance. *Frontiers in Psychiatry*, *13*, 869337. https://doi.org/10.3389/fpsyt.2022.869337

Eisenberg, N., Valiente, C., Morris, A. S., Fabes, R. A., Cumberland, A., Reiser, M., . . . Losoya, S. (2003). Longitudinal relations among parental emotional expressivity, children's regulation, and quality of socioemotional functioning. *Developmental Psychology*, *39*(1), 3-19. https://doi.org/10.1037/0012-1649.39.1.3

Elias, M. J. (2009). Social-emotional and character development and academics as a dual focus of educational policy. *Educational Policy*, *23*(6), 831-846. https://doi.org/10.1177/0895904808330167

Etkin, A., Prater, K. E., Hoeft, F., Menon, V., & Schatzberg, A. F. (2010). Failure of anterior cingulate activation and connectivity with the amygdala during implicit regulation of emotional processing in generalized anxiety disorder. *American Journal of Psychiatry*, *167*(5), 545-554. https://doi.org/10.1176/appi.ajp.2009.09070931

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39-50.

Freire, C., Ferradás, M. D. M., Regueiro, B., Rodríguez, S., Valle, A., & Núñez, J. C. (2020). Coping strategies and self-efficacy in university students: A person-centered approach. *Frontiers in Psychology*, *11*, 841. https://doi.org/10.3389/fpsyg.2020.00841

García-Sancho, E., Dhont, K., Salguero, J. M., & Fernández-Berrocal, P. (2017). The personality basis of aggression: The mediating role of anger and the moderating role of emotional intelligence. *Scandinavian Journal of Psychology*, *58*(4), 333-340. https://doi.org/10.1111/sjop.12367

Garnefski, N., Kraaij, V., & van Etten, M. (2005). Specificity of relations between adolescents' cognitive emotion regulation strategies and internalizing and externalizing psychopathology. *Journal of Adolescence*, *28*(5), 619-631. https://doi.org/10.1016/j.adolescence.2004.12.009

Greenberg, L. S. (2002). *Emotion-focused therapy: Coaching clients to work through their feelings*. Washington, DC: American Psychological Association.

Greenberg, M. T., Weissberg, R. P., O'Brien, M. U., Zins, J. E., Fredericks, L., Resnik, H., & Elias, M. J. (2003). Enhancing school-based prevention and youth development through coordinated social, emotional, and academic learning. *American Psychologist*, *58*(6-7), 466-474. https://doi.org/10.1037/0003-066X.58.6-7.466

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, *2*(3), 271–299. https://doi.org/10.1037/1089-2680.2.3.271

Gross, J. J. (2015). Emotion regulation: Current status and future prospects. *Psychological Inquiry*, *26*(1), 1-26. https://doi.org/10.1080/1047840X.2014.940781

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River: Pearson Prentice Hall.

Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis* (7th ed.). New York: Pearson.

Hawkins, J. D., Smith, B. H., & Catalano, R. F. (2004). Social development and social and emotional learning. In J. E. Zins, R. P. Weissberg, M. C. Wang, & H. J. Walberg (Eds.), Building academic success on social and emotional learning: What does the research say. In (pp. 135–150). New York: Teachers College Press.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55. https://doi.org/10.1080/10705519909540118

Järvelä, S., & Järvenoja, H. (2011). Socially constructed self-regulated learning and motivation regulation in collaborative learning groups. *Teachers College Record: The Voice of Scholarship in Education*, *113*(2), 350-374. https://doi.org/10.1177/016146811111300205

Jennings, P. A., Brown, J. L., Frank, J. L., Doyle, S., Oh, Y., Davis, R., . . . Greenberg, M. T. (2017). Impacts of the CARE for teachers program on teachers' social and emotional competence and classroom interactions. *Journal of Educational Psychology*, *109*(7), 1010-1028. https://doi.org/10.1037/edu0000187

Jennings, P. A., & Greenberg, M. T. (2009). The prosocial classroom: Teacher social and emotional competence in relation to student and classroom outcomes. *Review of Educational Research*, *79*(1), 491-525. https://doi.org/10.3102/0034654308325693

Jones, S. M., & Doolittle, E. J. (2017). Social and emotional learning: Introducing the issue. *The Future of Children*, *27*(1), 3-11. https://doi.org/10.1353/foc.2017.0000

Jordan, P. J., & Ashkanasy, N. M. (2013). Emotional intelligence, emotional self-awareness, and team effectiveness. In Linking Emotional Intelligence and Performance at Work. In (pp. 145-164). New York: Psychology Press.

Kabat-Zinn, J. (2003). Mindfulness-based interventions in context: Past, present, and future. *Clinical Psychology: Science and Practice*, *10*(2), 144–156. https://doi.org/10.1093/clipsy.bpg016

Koole, S. L. (2009). The psychology of emotion regulation: An integrative review. *Cognition and Emotion*, *23*(1), 4-41. https://doi.org/10.1080/02699930802619031

Kovalchuk, V., Prylepa, I., Chubrei, O., Marynchenko, I., Opanasenko, V., & Marynchenko, Y. (2022). Development of emotional intelligence of future teachers of professional training. *International Journal of Early Childhood Special Education*, *14*(1), 39-51.

Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York: Springer Publishing Company.

Linnenbrink, E. A. (2007). The role of affect in student learning: A multi-dimensional approach to considering the interaction of affect, motivation, and engagement. In P. A. Schutz, & R. Pekrun (Eds.), Emotion in Education. In (pp. 107-124): Academic Press. https://doi.org/10.1016/B978-012372545-5/50008-3

Lischetzke, T., & Eid, M. (2003). Is attention to feelings beneficial or detrimental to affective well-being? Mood regulation as a moderator variable. *Emotion*, *3*(4), 361-377. https://doi.org/10.1037/1528-3542.3.4.361

Lopez, R. B., Courtney, A. L., Liang, D., Swinchoski, A., Goodson, P., & Denny, B. T. (2024). Social support and adaptive emotion regulation: Links between social network measures, emotion regulation strategy use, and health. *Emotion*, *24*(1), 130–138. https://doi.org/10.1037/emo0001242

Marchesi, C., Fontò, S., Balista, C., Cimmino, C., & Maggini, C. (2004). Relationship between alexithymia and panic disorder: A longitudinal study to answer an open question. *Psychotherapy and Psychosomatics*, *74*(1), 56-60. https://doi.org/10.1159/000082028

Matsumoto, D., Yoo, S. H., & Nakagawa, S. (2008). Culture, emotion regulation, and adjustment. *Journal of Personality and Social Psychology*, *94*(6), 925–937.

Mayer, J. D., Salovey, P., & Caruso, D. R. (2004). Emotional intelligence: Theory, findings, and implications". *Psychological Inquiry*, *15*(3), 197-215.

Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development*, *16*(2), 361-388. https://doi.org/10.1111/j.1467-9507.2007.00389.x

Peachey, A. A., Wenos, J., & Baller, S. (2017). Trait emotional intelligence related to bullying in elementary school children and to victimization in boys. *OTJR: Occupational Therapy Journal of Research*, *37*(4), 178-187. https://doi.org/10.1177/1539449217715859

Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist*, *37*(2), 91-105. https://doi.org/10.1207/S15326985EP3702_4

Quílez-Robres, A., Usán, P., Lozano-Blasco, R., & Salavera, C. (2023). Emotional intelligence and academic performance: A systematic review and meta-analysis. *Thinking Skills and Creativity*, *49*, 101355. https://doi.org/10.1016/j.tsc.2023.101355

Rahaman, S., Govil, P., Khan, D., & Jevremov, T. D. (2024). A 30-year bibliometric assessment and visualisation of emotion regulation research: Applying network analysis and cluster analysis. *Information Discovery and Delivery*, *52*(1), 85-100. https://doi.org/10.1108/IDD-11-2022-0110

Reeve, J., Jang, H., Hardre, P., & Omura, M. (2002). Providing a rationale in an autonomy-supportive way as a strategy to motivate others during an uninteresting activity. *Motivation and Emotion*, *26*(3), 183-207. https://doi.org/10.1023/A:1021711629417

Roesler, C. (2024). Emotion regulation, relationship and therapeutic change in analytical psychology and contemporary psychodynamic approaches. *Journal of Analytical Psychology*, *69*(4), 602-619. https://doi.org/10.1111/1468-5922.13031

Roorda, D. L., Koomen, H. M. Y., Spilt, J. L., & Oort, F. J. (2011). The influence of affective teacher–student relationships on students' school engagement and achievement: A meta-analytic approach. *Review of Educational Research*, *81*(4), 493-529. https://doi.org/10.3102/0034654311421793

Rutherford, H. J. V., Wallace, N. S., Laurent, H. K., & Mayes, L. C. (2015). Emotion regulation in parenthood. *Developmental Review*, *36*, 1-14. https://doi.org/10.1016/j.dr.2014.12.008

Sáez-Delgado, F., López-Angulo, Y., Mella-Norambuena, J., Baeza-Sepúlveda, C., Contreras-Saavedra, C., & Lozano-Peña, G. (2022). Teacher self-regulation and its relationship with student self-regulation in secondary education. *Sustainability*, *14*(24), 16863. https://doi.org/10.3390/su142416863

Salleh, S. M., Khairi, S. M. M., Halim, N. A., Idrus, N. I., & Rozali, N. (2024). "Enhancing academic success: The role of emotional intelligence in university students". *International Journal of Research and Innovation in Social Science*, *8*(9), 2419-2426. https://doi.org/10.47772/ijriss.2024.8090199

Salovey, P., Mayer, J. D., Goldman, S. L., Turvey, C., & Palfai, T. P. (1995). Emotional attention, clarity, and repair: Exploring emotional intelligence using the Trait Meta-Mood Scale. In J. W. Pennebaker (Ed.), Emotion, disclosure, & health. In (pp. 125–154): American Psychological Association. https://doi.org/10.1037/10182-006

Sarwar, S., Tara, A. N., Abid, M. N., & Dukhaykh, S. (2025). Teachers' academic motivation and student procrastination behaviour: Mediating effects of emotion regulation and study habits. *BMC Psychology*, *13*(1), 52. https://doi.org/10.1186/s40359-025-02352-5

Southam-Gerow, M. A., & Kendall, P. C. (2002). Emotion regulation and understanding: Implications for child psychopathology and therapy. *Clinical Psychology Review*, *22*(2), 189-222. https://doi.org/10.1016/S0272-7358(01)00087-3

Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in Cognitive Sciences*, *9*(2), 69-74. https://doi.org/10.1016/j.tics.2004.12.005

Steinberg, L., & Morris, A. S. (2001). Adolescent development. *Annual Review of Psychology*, *52*(1), 83-110. https://doi.org/10.1146/annurev.psych.52.1.83

Supervía, U. P., & Quílez Robres, A. (2021). Emotional regulation and academic performance in the academic context: The mediating role of self-efficacy in secondary education students. *International Journal of Environmental Research and Public Health*, *18*(11), 5715. https://doi.org/10.3390/ijerph18115715

Sutton, R. E., Mudrey-Camino, R., & Knight, C. C. (2009). Teachers' emotion regulation and classroom management. *Theory Into Practice*, *48*(2), 130-137. https://doi.org/10.1080/00405840902776418

Thompson, R. A. (1994). Emotion regulation: A theme in search of definition. *Monographs of the Society for Research in Child Development*, *59*(2/3), 25-52. https://doi.org/10.2307/1166137

Thompson, R. A. (2014). Socialization of emotion and emotion regulation in the family. In J. J. Gross (Ed.), Handbook of emotion regulation. In (2nd ed., pp. 173–186). New York: Guilford Press.

Vestad, L., & Tharaldsen, K. B. (2022). Building social and emotional competencies for coping with academic stress among students in lower secondary school. *Scandinavian Journal of Educational Research*, *66*(5), 907-921. https://doi.org/10.1080/00313831.2021.1939145

Wong, M. D., Dosanjh, K. K., Jackson, N. J., Rünger, D., & Dudovitz, R. N. (2021). The longitudinal relationship of school climate with adolescent social and emotional health. *BMC Public Health*, *21*(1), 207. https://doi.org/10.1186/s12889-021-10245-6

Wuthrich, V. M., Jagiello, T., & Azzi, V. (2020). Academic stress in the final years of school: A systematic literature review. *Child Psychiatry & Human Development*, *51*(6), 986-1015. https://doi.org/10.1007/s10578-020-00981-y

Yu, J., Huang, C., He, T., Wang, X., & Zhang, L. (2022). Investigating students' emotional self-efficacy profiles and their relations to self-regulation, motivation, and academic performance in online learning contexts: A person-centered approach. *Education and Information Technologies*, *27*(8), 11715-11740. https://doi.org/10.1007/s10639-022-11099-0

Zembylas, M., & Schutz, P. A. (2009). Research on teachers' emotions in education: Findings, practical implications and future agenda. In: Schutz, P., Zembylas, M. (Eds.), Advances in Teacher Emotion Research. In (pp. 367-377). Boston, MA: Springer. https://doi.org/10.1007/978-1-4419-0564-2_18

Zimmerman, B. J. (2000). Attaining self-regulation: A social cognitive perspective. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), Handbook of Self-regulation. In (pp. 13-39): Academic Press. https://doi.org/10.1016/B978-012109890-2/50031-7

Zimmermann, P., & Iwanski, A. (2014). Emotion regulation from early adolescence to emerging adulthood and middle adulthood: Age differences, gender differences, and emotion-specific developmental variations. *International Journal of Behavioral Development*, *38*(2), 182-194. https://doi.org/10.1177/0165025413515405