

The Mediating Role of Resilience in the Relationship Between Emotional Awareness and Academic Emotions

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Abstract: Emotions play a crucial role in various aspects of human life, including education and learning. Pekrun et al. (2003) introduced the concept of academic emotions, which include feelings such as joy, pride, anger, frustration, anxiety, and shame experienced in the classroom.

Objective: This study aimed to predict academic emotions based on emotional awareness, considering the mediating role of resilience.

Method: This correlational study utilized structural equation modeling. The statistical population included all undergraduate students at the University of Mazandaran during the 2023-2024 academic year. A total of 382 students were selected through voluntary sampling. The Academic Emotions Scale (Pekrun, 2005), the Connor-Davidson Resilience Scale (2003), and the Rieffe Emotional Awareness Questionnaire (2007) were administered online. Data analysis was conducted using SPSS, LISREL, and AMOS software.

Results: Emotional awareness, with a standardized coefficient of 0.082, predicts academic emotions through the mediating role of resilience. Emotional awareness has a direct relationship with positive academic emotions and an inverse relationship with negative academic emotions. Conclusion: The findings indicate that emotional awareness predicts academic emotions through the mediating role of resilience. Higher emotional awareness leads to an increase in positive academic emotions and a decrease in negative academic emotions.

Keywords: Emotional Awareness, Resilience, Academic Emotions

Introduction

Emotions play a significant role in various aspects of human life. Researchers generally agree that cognition precedes emotions. According to definitions, emotions or feelings arise from the interaction between neural processes and cognition (Ashkanasy & Dorris, 2017). The educational environment is no exception to diverse emotional

experiences. Emotions and feelings are integral aspects of students' personalities, continuously present throughout the learning process, influencing their self-regulated learning. Academic emotions are defined as emotions directly linked to achievement-related activities or outcomes (Moradi, 2019). Empirical findings confirm that students experience various emotions in the classroom. According to experimental research, university students frequently experience emotions such as joy, interest, hope, pride, anger, anxiety, frustration, and boredom (Pekrun & García, 2012). Academic emotions encompass all emotions that students feel in learning situations. Tang's research identifies two dimensions: emotional arousal and emotional capacity. Emotional capacity refers to whether a stimulus is pleasant, while emotional arousal indicates the intensity of the emotion evoked by a stimulus. Positive emotions correlate with learning outcomes such as strategies, motivation, self-efficacy, achievement, and other related aspects (Tan, Mao, Jiang, & Gao, 2014). Academic emotions refer to a set of feelings and emotions that can influence students' learning outcomes (Li, Cui, & Chiu, 2018). Studies conducted during the COVID-19 pandemic highlighted the impact of academic emotions on students' engagement and involvement in learning. For example, academic emotions mediate the relationship between adaptation and academic engagement (Zhang, Wu, Zhou, Zhao, Goetz, & Stang, 2021). Similarly, a study by Hanani, Zarandi, Amiri, and Azadi (2023) concluded that academic emotions are strongly correlated with academic motivation, and positive academic emotions are associated with higher motivation. Carmona-Halty, Salanova, Llorens, and Schaufeli (2021) emphasized the relationship between academic emotions and academic performance, examining the mediating role of psychological capital and academic engagement. Positive academic emotions significantly influence students' academic engagement, whereas negative academic emotions have a less pronounced effect. Moreover, increased academic engagement enhances students' self-efficacy. Therefore, it can be inferred that increasing positive academic emotions contributes to higher student self-efficacy (Ho, Fang, Wu, Mei, & Dai, 2024). Positive emotions such as joy and pride predict academic success, and academic success, in turn, predicts positive emotions. Conversely, negative emotions have an inverse relationship with academic success, and academic success negatively correlates with negative emotions (Pekrun &

Lichtenfeld, 2017). Emotions influence adolescents' learning by affecting attention, motivation, learning strategies, self-regulated learning, and academic achievement (Pekrun, 2017). This study examines academic emotions based on Pekrun's theoretical framework. In Pekrun's view, the impact of emotions on learning and achievement is mediated through several cognitive and motivational mechanisms, including learning motivation, learning strategies, cognitive resources, and self-regulated learning. Academic emotions are related to learning strategies, cognitive resources, self-regulated learning, and students' academic achievement, influencing their physical and psychological well-being (Hashemizadeh & Mahdian, 2018).

Another key variable in this study is emotional awareness. Emotional awareness is defined as metacognitive knowledge of emotional experiences. Most definitions conceptualize emotional awareness in two dimensions: attention to emotions and understanding emotions (Boden & Thompson, 2015). Emotional awareness refers to an individual's ability to identify, describe, and recognize their emotions, requiring an intentional and active transformation of emotional experiences. It also involves effectively using emotion regulation strategies (Van Buren & Gossens, 2018). This study examines emotional awareness from Rieffe's perspective. Rieffe distinguishes key components of emotional awareness across six scales, including differentiation of emotions, attention to physiological aspects of emotional experience, and relational emotions such as sharing. Emotional Communication, Explicit Expression, Tendencies, and Emotional Analysis (Gholamreza & Saberi, 2018). According to Rieffe, emotional awareness can be examined in three dimensions: Awareness of emotions, which refers to an individual's readiness to confront their own feelings and emotions. Some children may perceive certain emotions as distressing and avoid them, while others may see emotions as valuable sources of information about their concerns. The ability to maintain focus in emotionally charged situations, allowing individuals to perceive emotions as essential and valuable information. The ability and willingness to understand others' emotions, which enhances an individual's capacity for empathy (Rieffe & Komedka, 2016). Emotional awareness can enhance positive emotions related to past, present, and future learning experiences. It also helps learners connect emotions with their past experiences (Lavoie, Kazemitabar, Dolk, Lajoie, Carrillo, & Molinari, 2019).

Resilience and Academic Emotions

Another variable examined in relation to academic emotions is resilience. Resilience is a key component of the positive psychology approach. It is defined as positive adaptation or the ability to maintain and restore mental health in the face of adversity. Herman identifies three factors of resilience: personal factors, biological factors, and environmental factors, as well as the interaction between these three elements (Herman, 2011). According to Tugade, resilience refers to an individual's ability to recover from negative thoughts and emotions resulting from stressful experiences. Resilient individuals have an optimistic and energetic outlook on life, remain open and curious about new experiences, and are often characterized by positive emotions. Moreover, positive thinking is considered a fundamental element of resilience. Researchers in the field of coping strategies suggest that positive emotions help individuals manage stress effectively. Positive coping includes strategies such as positive reappraisal, where individuals reframe ordinary events in a positive light to foster and maintain positive emotions (Tugade, 2004). Studies indicate that psychological resilience in migrant students helps them cope with stress by providing access to positive emotional resources (Geng, Wang, Zhong, & Shao, 2023). Resilience is positively related to self-efficacy and can predict academic emotions such as anger, fatigue, frustration, shame, and anxiety (Tang, 2019). Evidence suggests that resilience influences stress symptoms and mental health issues among nursing students (Li & Hasson, 2020). Additionally, resilience is negatively correlated with academic fatigue among university students (Yeh, Zhou, Im, Liu, Wang, & Yang, 2020). There is also a positive correlation between resilience and positive emotions in undergraduate students (Magalingan & Ramly, 2021). Research Gap and Objectives In most existing research on the relationship between resilience and academic emotions, the components of academic emotions have been examined separately. Furthermore, some studies have focused on specific student groups, such as medical or nursing students. Therefore, this study examines academic emotions as a unified variable with a more diverse population. To address these limitations, this research selects a larger sample size and a more diverse statistical population. Additionally, most previous studies have analyzed specific aspects of academic emotions individually (e.g., resilience's relationship with positive emotions or its impact on stress). In this study, academic emotions are considered a criterion

variable, integrating different emotional components. Moreover, no study has been found that examines the mediating role of resilience in the relationship between emotional awareness and academic emotions. Thus, the present study aims to investigate the mediating role of resilience in the relationship between emotional awareness and academic emotions.

Method :

This study is an applied research based on its objective. In terms of data collection, it follows a cross-sectional design and employs descriptive analysis using a correlational design, specifically structural equation modeling (SEM) and path analysis. The statistical population consisted of all undergraduate students enrolled at Mazandaran University during the 2023-2024 academic year. According to Kline (2011), the minimum sample size for structural equation modeling is 200. Based on this, 382 undergraduate students from Mazandaran University were selected using voluntary sampling, and an online questionnaire link was sent to them for completion.

Research Instruments

A) Emotional Awareness Questionnaire (Rieffe et al., 2007): The Emotional Awareness Questionnaire was developed by Rieffe et al. (2007) based on the Toronto Alexithymia Scale (Bagby et al., 1994) to assess how children and adolescents feel or perceive their emotions. It is a three-point Likert scale (true, somewhat true, false) with scores ranging from 1 to 3. This questionnaire includes six subscales: Ability to differentiate emotions (7 items) Ability to share emotions (3 items) Ability to express emotions openly (5 items) Physical self-awareness (5 items) Awareness of others' emotions (5 items) Ability to analyze emotions (5 items) According to Rieffe (2008), the Cronbach's alpha for this questionnaire is 0.70, and the internal correlation is 0.30, indicating acceptable reliability. In Iran, Gholamreza & Saberi (2018) standardized the questionnaire, reporting an overall Cronbach's alpha of 0.78.

B) Connor-Davidson Resilience Scale (CD-RISC, 2003): Connor and Davidson (2003) developed the Resilience Scale by reviewing research on resilience from 1979 to 1991. They believed this scale effectively differentiates resilient and non-resilient individuals in both clinical and non-clinical settings, making it suitable for research and clinical applications. The CD-RISC consists of 25 items, rated on a five-point Likert scale from 0 (completely false) to 5 (always true). The Cronbach's alpha

reported by Connor and Davidson is 0.89, and the test-retest reliability over a four-week interval was 0.87. In Iran, Mohammadi (2005) standardized this scale, reporting a Cronbach's alpha of 0.89. This scale includes five subcomponents: Personal competence Trust in instincts and tolerance for negative emotions Positive acceptance of change and secure relationships Control Spiritual influences

C) Academic Emotions Questionnaire (AEQ, Pekrun, 2005): The Academic Emotions Questionnaire (AEQ) was developed by Pekrun et al. (2005) and consists of 43 items, measuring two main components: positive and negative academic emotions. It is rated on a five-point Likert scale, with statements such as "I enjoy attending class." In Iran, Kadivar et al. (2009) validated the AEQ, reporting Cronbach's alpha coefficients ranging from 0.88 to 0.93, indicating high reliability. The main subcomponents of this questionnaire are: Positive academic emotions Negative academic emotions Research Procedure Initially, coordination was established with university student associations. Students from different academic groups were contacted via social media platforms, and their willingness to participate in the study was assessed. The online questionnaire link was then sent to those who expressed interest. In total, 382 undergraduate students participated in the study.

Findings

The demographic characteristics of the research and the distribution of scores, along with the correlation of the studied variables in the student sample, are presented in Tables 1 and 2. Among the 382 participants, 235 were women, accounting for 61% of the sample, and 147 were men, representing nearly 38% of the sample.

Table 1 - Gender Frequency in the Research

Age Group	Frequency	Percentage
Female	235	61.5
Male	147	38.4
Total	382	100

Sample Table 2 - Marital Status Frequency in the Research Sample

Age Group	Frequency	Percentage
Single	355	92.9
Married	27	7.1
Total	382	100.0

The data in Table 2 show that 92% of the sample consisted of single individuals, while less than 8% were married. In this study, 25 missing data points were replaced by the obtained means. In the hypothetical model, the skewness of the observable variables ranged from -1.37 to 2.33, and their kurtosis ranged from -1.23 to 6.02. According to Chou and Bentler (1995), if the skewness of the indicators in structural equation modeling is within the ± 3 range, there will be no issues in parameter estimation and model fit. Since the absolute value of the skewness coefficient for the variables is less than 3 and the absolute value of the kurtosis coefficient is less than 10, the data are assumed to be normally distributed in samples larger than 100, as per Klein (2023). In

this study, the multivariate normality assumption was tested by calculating the Mardia index, which yielded a value of 30.536 with a critical ratio of 2.59. Since a critical ratio of 5 or lower indicates multivariate normality (Byrne, 2010), it can be concluded that the distribution of data in this study is multivariate normal. The correlation matrix between the observed variables showed no issues with multicollinearity. The correlation coefficients for the hypothetical model ranged from -0.23 to 0.76. Correlation coefficients above 0.85 can create multicollinearity problems, which may cause issues in the accurate estimation of the model (Klein, 2023). Therefore, the assumption of no multicollinearity is satisfied.

Table 3 - Model Fit Indices

Fit Index	Acceptable Range	Value
Chi-square (χ^2)	Non-significant	00/496
Chi-square (χ^2) / df	Less than 3	15/3

Comparative Fit Index (CFI)	Greater than 0.90	0.95
Incremental Fit Index (RFI)	Greater than 0.90	0.93
Goodness of Fit Index (GFI)	Greater than 0.90	0.90
Normed Fit Index (NFI)	Greater than 0.90	0.94
Standardized Root Mean Square Residual (SRMR)	Less than 0.10	0.074
Root Mean Square Error of Approximation (RMSEA)	Less than 0.10	0.09

The results of Table 3 show that the Chi-Square test was significant; however, since this test statistic is sensitive to sample size, the Chi-

Square to degrees of freedom ratio was used to assess model fit. This ratio should be less than 3 (Klein, 2015).

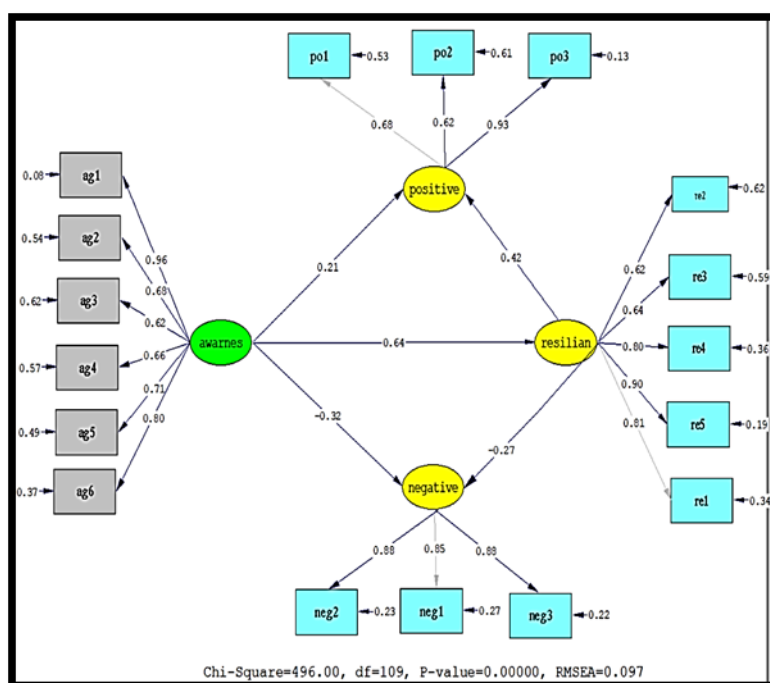


Figure 2 - Research Model

Emotional awareness affects positive and negative emotions and resilience, with standard coefficients of 0.21, -0.32, and 0.64, respectively. Resilience, in turn, affects positive and negative emotions with standard coefficients of 0.42 and -0.27. The data in Table 4 indicate that all direct paths in the

model are significant. To evaluate the mediating relationships, a bootstrap test was used. As shown in Table 4, the path from emotional awareness to academic emotion, mediated by resilience, is significant at the 0.05 level with a standard coefficient of 0.082.

Table 4 - Bootstrap Test Results for Mediating Effects

Exogenous Variable	Mediator Variable	Dependent Variable	Bootstrap Interval (Upper Bound)	Bootstrap Interval (Lower Bound)	Effect Size
Emotional Awareness	Resilience	Academic Emotion	0.131	0.021	0.082

Discussion and Conclusion

The results obtained from the analysis of the research findings indicate that there is a relationship between emotional awareness and academic emotions with resilience as a mediator. There is a direct relationship between emotional awareness and positive academic emotions with resilience as a mediator, and an inverse relationship between emotional awareness and negative academic emotions with resilience as a mediator.

To explain these relationships, it can be said that emotional awareness teaches individuals to cope with their inappropriate emotions in a more adaptive manner and respond more adaptively to them. Emotional awareness helps anxious individuals better identify their emotions, thoughts, and feelings. People with higher emotional awareness have better skills in recognizing their emotions, greater courage in expressing and sharing them, are more aware of their bodily changes, and have a higher understanding of the emotions of others. In general, it can be said that familiarizing oneself with recognizing emotions, learning emotional observation, cognitive reappraisal, as well as being aware of the negative effects of emotional avoidance, recognizing and identifying emotion-driven behaviors, and understanding the reciprocal impact of thoughts and emotions help anxious individuals recognize their maladaptive automatic evaluations. These individuals, through the factors mentioned, can confront their unpleasant emotions, experience them, and respond more adaptively to these emotions. As a result, they gain more control

over identifying and regulating their emotions (Rahimi, Bahrami Poor, 2025).

Emotional self-awareness is an aspect of emotional intelligence. There is a significant relationship between various dimensions of emotional intelligence and perceived stress in students. Enhancing emotional intelligence and its components is effective in stress management. As a result, it prevents disorders and damage caused by stress, particularly in students. Individuals with higher emotional intelligence, including emotional awareness as one of its components, experience higher emotional balance, which helps them better manage their emotions, including stress (Hasan Poor, 2021).

People with high emotional intelligence view worrying events as opportunities, which impacts their happiness and coping strategies. As a result, emotional and physiological disorders decrease, leading to greater happiness. Additionally, the higher a person's emotional intelligence, the greater their ability to recognize, assess, and regulate emotional information about themselves and others. Consequently, their ability to control negative emotions increases, preventing these factors from negatively influencing their behavior. These individuals, while being optimistic about life, maintain effective relationships with others, which contributes to their happiness. Their optimism helps them cope with stress, enabling them to experience greater joy (Karami Gheibi, 2020).

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