

## Impact of Emotional Regulation on Academic Achievement of Students at Secondary School Level

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### Abstract

This systematic review explores the relationship between Emotional Regulation (ER) and academic achievement in secondary school students. It aims to find how efficiently emotional regulation can increase academic achievement and reduce the rate of lower grades. Comprehensive searches were carried out through several databases for quantitative research and theoretical studies that would meet the inclusion criteria. The studies with impact of ER on academic achievement across diverse cultural backgrounds were selected. The analysis of included articles showed that emotional regulated learners are doing well in academic setting. Students who reveal competence in ER tend to exhibit higher academic achievement, thus proving that emotional regulation significantly enhances learning processes and academic achievement. This suggests that emotional regulation training should be included in education practices. Better ER may have a positive impact on academic attainment on students' resilience in overcoming the demands of secondary school. Interventions to improve emotional regulation might support students' educational careers, and their academic achievement in general. This systematic review showed a substantial association between emotional regulation and school achievement. Effective ER is associated with superior problem-solving ability, resilience, focused attention, and adaptive coping strategies.

**Keywords:** *Emotional Regulation, Academic Achievement, Emotional Intelligence*

### 1. Introduction

Secondary school students require cultural standards to live (Kullik & Petermann, 2012). Moreover, they are expected to meet a growing range of requirements as society does, from social skills and emotional stability to academic accomplishment (Sánchez-Álvarez, Martos, & Extremera, 2020).

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Children are required to follow certain norms and rules of conduct, which are shaped by these changing needs that are shaping secondary school. Within this context, the secondary school setting becomes a critical domain influencing kids' ability to control their emotional regulation (ER), in addition to the effects in their personal lives (Macdonald et al., 2014). Emotional regulation is the ability to experience, manage, and respond to such emotions in healthy and adaptive ways (Rodriguez & Kross, 2023). ER is the recognition, understanding, and regulation of one's strong emotional activities, particularly regarding events that fall under the category of overriding or maladaptive for behavior (Rodriguez & Kross, 2023). Children experience a wide range of emotions in the school setting, including interpersonal relationships, academic difficulties, and involvement in extracurricular activities. Their general well-being and academic achievement are greatly impacted by how they manage these emotional experiences, control their emotions, and deal with stress (Kwon et al., 2016). As a result, investigating emotional regulation in secondary school students has drawn attention from researchers. Scholars and educators are realizing how critical it is to develop emotional intelligence in addition to intellectual proficiency. Teachers may assist students' academic success and healthy emotional development by implementing tailored interventions based on their understanding of how children manage their emotions in the classroom. Many researchers studied about the effects of emotional regulation within schools, particularly about how emotional regulation is affected when children first begin attending primary school; the consequences of this are that clear-cut and specific information regarding emotional regulation processes within educational settings often becomes buried beneath a mountain of voluminous data (Hirvonen et al., 2015). While a number of studies have looked at the correlations of emotional regulation in school settings, there is still a lack of a thorough, systematic review that covers the effects of strategies, developmental trajectories, and core correlates of emotional regulation to academic achievement (Durlak et al., 2011).

Research on Emotional Regulation (ER) tends to concentrate on certain facets of the ability, including self-regulation techniques or emotional expressiveness, rather than taking into account the complete range of ER abilities and their complex influences on academic achievement. A comprehensive analysis that integrates research from several ER characteristics might offer a more comprehensive comprehension of the influence of ER on academic performance. Although ER's direct impacts on academic accomplishment have been studied in some detail, little study has been done on the potential explanations for how ER strategies affect academic results. These tactics might be found through a systematic review, which would also offer suggestions for

intervention tactics that may be used to improve academic performance. By synthesizing existing research to answer research questions, the study guides future directions in educational practice and policy, ultimately improving student outcomes and promoting well-being in educational settings.

### **1.1 Objectives of Study**

The objectives were made through PICO (Population, Intervention, Comparison, Outcome) concept. The PICO concept is an overall framework utilized in evidence-based practice and research to formulate clear, focused research questions. The population consists of those subjects or people in whom the study is interested. Intervention is the treatment, procedure, or exposure being studied. Comparison, which means the intervention, is compared to another factor. Outcome is the measured results or effects. Objectives of the study included to:

1. explore the influence of emotional regulation on academic achievement of students at secondary school level.
2. identify emotional regulation strategies of students at secondary school level.
3. identify specific emotional regulation strategies that impact academic achievement of students.

### **1.2 Research Questions**

Following research questions were included:

1. What is impact of emotional regulation on academic achievement of students at secondary school level?
2. What are the emotional regulation strategies of students at secondary school level?
3. What are the emotional regulation strategies that influence academic achievement of students?

### **1.3 Significance of Study**

Educational performance is comprehensively defined by elucidating how emotional regulation and academic achievement are related among high school students. Emotional regulation in addition to regular academic abilities is necessary for student stress management as well as attention to work and relationships that maintain healthy balance. This study informs appropriate interventions and support systems that are meant to enhance learners' emotional health alongside their academic engagement. Schools can integrate these findings into the development of curricula and teaching practices to foster social-emotional learning and create environments that facilitate this process. Consequently, children will have lifelong skills that will enable them to excel both in school and life outside of it.

## 2. Literature Review

Emotional Regulation (ER) has its roots in a number of psychological theories like, James-Lange Theory of Emotion (1884), Cannon-Bard Theory of Emotion (1927), Lazarus' Cognitive Appraisal Theory (1966), Gross' Process Model of Emotion Regulation (1998), Attachment Theory by Giddens and Bowlby (1970), each of which provides a different viewpoint on the mechanisms behind the control and modulation of emotions. Emotional regulation is the capacity of an individual to regulate and implicate emotional experiences, emotional expression and emotional reactions (Stellern et al., 2022). Emotional regulation helps to modify the performance, cognition and welfare of an individual. Emotions are reactions towards external stimuli (Cannon, 2004). ER means having a good knowledge of the feelings as soon as they arise and taking ample measures to deal with them (Iwakabe et al., 2023). Individuals' physical environment deduces emotional reaction towards particular experience. In the view of emotional regulation if an individual can control his physical environment, then its emotional behavior modifies, which is linked to the success of a task (Cannon, 2004). Many researchers believe that physical behavior of a person is working consecutively with emotional reactions (Wang & Morris, 2010). It represents that emotional reactions are due to the functions of the nervous system. Research on emotional regulation suggested that cognition process is significant in managing emotions consecutively which effects academic achievement through modification of devotion, memory and executive planning (Wang & Morris, 2010).

Research on two-factor theory suggested that physical environment and reasoning of an individual combine to make an emotional reaction (Schechter & Singer, 1962). It represent that when individuals are labeled due to their physical appearance then they interpret cognitively to the labels which results in feeling particular emotions (Schachter & Singer, 1962). It also indicated that cognition has a significant role in management of emotions. So, cognitive processes can alter emotional behavior and academic performance of an individual (Trommsdorff, 2010). Lazarus's Cognitive-meditational theory suggested that cognition plays a significant role in controlling emotions towards a particular experience (Lazarus, 1966). This theory believed that individual's assessment is based on the relevance of experiences towards their opinion and motivation (Trommsdorff, 2010). Cognitive assessment manages emotional reaction and behaviors of an individual. Emotional regulation can help to manage emotions in academic pressure, resultantly which increases the success rate of academic achievement (Gross, 2015b). Gross (1998) suggested a process model of emotional regulation to understand behavior and cognition (Gross, 1998). The

strategies which are identified in this model are scenario modification, situation selection, attention deployment, cognitive reappraisal and response modulation (Gross, 2015b). Every strategy has its significance in academic performance and emotional reaction. The process model suggested that effective emotional regulation of students can improve their academic performance (Gross, 2015b).

The emotional regulation fosters the achievement of academic goals through concentration, management of stressful situations and motivation, self-discipline, and finally, goals themselves (Pranata et al., 2023). Emotional regulation helps a student to attend classes despite events such as anxiety or frustration-the absence of such regulation implies the lack of focus and task completion (Xu et al., 2023). It helps in managing exposure to stress due to academic obligations hence reducing the chances of burnout and increasing resilience (Pranata et al., 2023). ER helps to keep a positive emotional framework sustained, which increases motivation to pursue academic goals; positive emotions promote perseverance while negative ones may detract effort (Pranata et al., 2023).

Research on correlation of academic performance and emotional regulation found positive relation (Aldao & Nolen-Hoeksema, 2010). Similar to this, Webb, Miles and Sheeran (2012) carried out a meta-analysis and found that emotion management techniques based on the process model were useful for improving academic performance. Academic achievement and emotional regulation have a complicated and multidimensional relationship. The bidirectional nature of this link was highlighted by Cole, Martin and Dennis, (2004) who hypothesized that academic pressures might affect students' capacity for emotional regulation, which in turn affects their academic performance. Gratz and Tull (2010) presented additional detail about the function of emotion regulation as a mechanism of change in acceptance and mindfulness-based therapies, emphasizing how it may help students achieve better academic results. Many researchers suggested the relationship of motivation, commitment and cognition to emotional regulation (Ellis, Buttram & Remy, 2023). Another research recommended that academic performance and emotional regulation are interrelated (Thompson, 1994). Improved emotional regulation strategies indicate a strong relation of emotional regulation and academic achievement Gross (2015b). Effective emotional regulation tactics can help an individual in improving their academic performance (Aldao et al., 2010).

Emotional regulation in academic achievement is one of the highly significant findings where better emotional regulation is linked to higher grades, motivation, and effective learning strategies (Zimmerman, 2015). Emotional regulation enhances attentiveness, self-control, and persistence, all of which are

factors contributing to academic success (Hemmler & Ifenthaler, 2024). Students who are emotionally regulated tend to better withstand the demands of academic settings like examinations, deadlines, and competitive environments (Yu, 2023). This claim is supported by research focusing on the relationships between emotional regulation and test anxiety, in which it has been observed that individuals with poor emotional regulation usually suffer increased levels of anxiety profiling impaired cognitive functioning and low academic achievement (Zimmerman, 2015).

Students with better emotional regulation are able to manage their stress levels, maintain concentration, and perform better under pressure (Brenner, 2022). Emotional regulation under study in relation to classroom interaction, results indicating that students' ability to regulate their emotions positively influences the ways they interact with friends and teachers, hence increasing their performance in the class (Hemmler & Ifenthaler, 2024). In other words, the effects of emotional regulation result in better collaborative learning, active participation in class, and seeking help when needed are behaviors that have been linked to better academic achievement. These types of behaviors lead not only to changes in academic outcomes but also in social development as students exhibit greater emotional intelligence and interpersonal skills.

### **3. Research Methodology**

This systematic review investigated the impact of emotional regulation on academic achievement of students at secondary school level. The researcher developed inclusion criteria to retrieve the existing articles. The research studies included in the systematic review are based on the publishing dates, peer-reviewed publications, full-accessed texts, quantitative studies and qualitative studies investigating the relationship of ER and academic achievement. The exclusion criteria are also developed to remove research that were irrelevant, published before 2000, and those that cannot be accessed on full text. The web-based databases were searched thoroughly for the selection of the research studies. The researcher used search phrases such as, *emotional regulation*, *academic achievement*, *secondary school* and *student*. The titles and abstracts were screened by two reviewers using predetermined inclusion criteria during the review process. The first reviewer developed the inclusion criteria and collected most of the data on emotional regulation and academic achievement. The second reviewer is Reviewer 2, also the second author of the study. For the consistency and accuracy of the data retrieved the reviewer 2 advised was taken. The systematic approach adopted by both reviewers at this stage ensured that literature review pertinent to the focus of the study would be rigorously evaluated. To assess the quality of articles included the researcher only worked

with those articles that were on W category journals in HEC HJRS list. A narrative style is used to conclude the findings of the study.

(Note: figure 1 represents data collection for the systematic review)

### **3.1 Research Design**

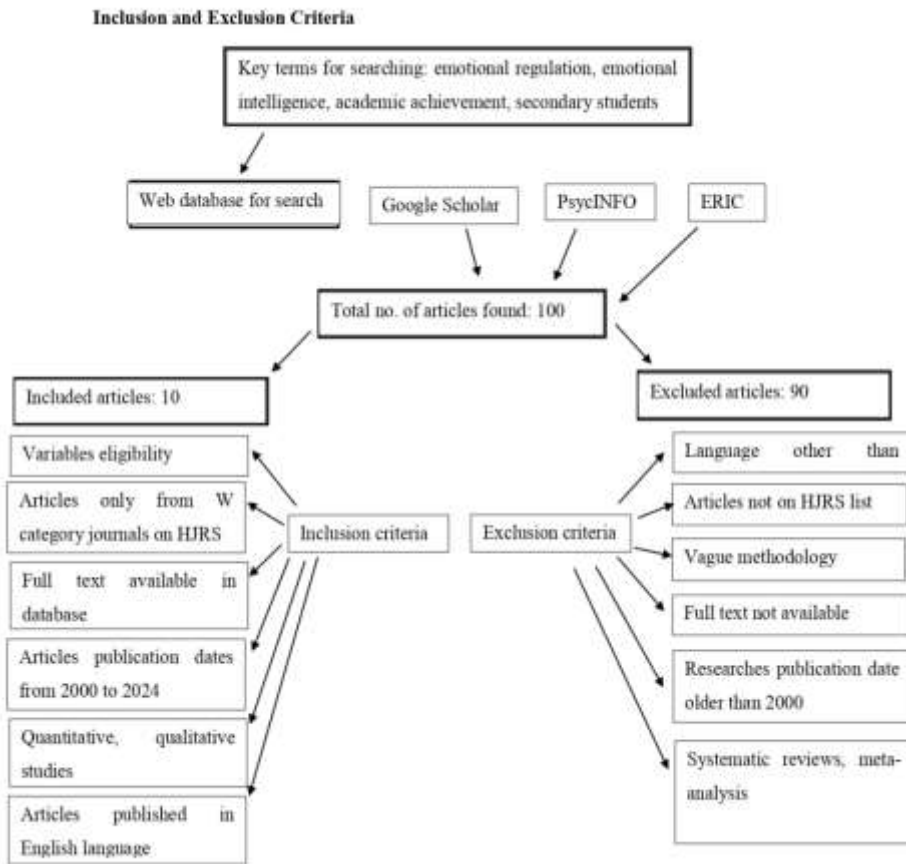
The research design of this systematic review studies the effect of the emotional regulation (ER) on the academic achievement of secondary school students. It relies heavily on exhaustive retrievals of peer-reviewed, full-text articles on ER and academic achievement from various web-based databases. The research design bring together quantitative and qualitative studies conducted on the influence of emotional regulation on one's academic performance. The selected articles were analyzed through a narrative synthesis in order to understand deeply how emotional regulation has contributed to secondary school students' academic performance.

### **3.2 Inclusion Criteria**

Inclusion criteria for systematic review are reviewed according to some distinct characteristics of the research papers: it includes both quantitative and qualitative studies on emotional regulation in regard to academic success. Peer-reviewed full-text articles are considered because it helped to make the data complete and credible. Studies from 2000 onwards and specifically secondary school students are included because they are relevant to the target age group. In addition, being published in W category journals of the Higher Education Commission (HEC) Higher Education Journal Ranking System (HJRS) is mandatory for research to be published in English. These criteria would ensure the quality and applicability of the studies chosen.

### **3.3 Exclusion Criteria**

The exclusion criteria aim to eliminate all studies not concerned with the research focus or not meeting the standards. Studies that lack a relationship between emotional regulation and the academic achievement are excluded. This also excludes any articles published prior to the year 2000 since they seem to reflect a different time regarding the emotion regulation that impacts academic achievement. Further full-text inaccessibility prevented including any such studies, thereby allowing a full view of the research. In addition, articles not included in journals that meet the HEC HJRS W category ranking and published in a language other than English were excluded for the study. All those will ensure empirical research reviewed is indeed included in the systematic review.



#### 4. Data Analysis and Interpretation

For the analysis of the study, 10 research studies including quantitative and theoretical studies were analyzed. By comprising different types of studies in the systematic review the study evaluates the relationship between emotional regulation and academic achievement in breadth. This approach guarantees complete evaluation of emotional regulation and its strategies effect on academic achievement. By collecting evidence from different studies this research assesses emotional regulation and academic achievement in breadth and completeness.



Table 1

*Relationship between emotional regulation and academic achievement*

Author of the studies	Type of study	N	measures
1. Wong, Colasante, & Malti (2023)	Longitudinal study	300	r= 0.43
2. Villavicencio & Bernardo (2012)	Cross-sectional correlational study	1345	r= .22
3. MacCann, Fogarty, Zeidner, & Roberts (2011)	Correlational study	Study 1: 1159 Study 2: 2293	r= 0.44
4. Graziano, Reavis, Keane, & Calkins (2007b)	Cross-sectional correlational study	325	R2 = .29
5. Garg, Levin, & Tremblay (2016)	Cross-sectional study	299	$\beta = 0$
6. Costa, & Faria (2015)	Longitudinal study	380	r = 0.295
7. Halimi, AlShammari, & Navarro (2020)	Longitudinal study	480	Effect size=0.009,0.005.
8. Mohzan, Hassan, & Halil (2013)	Correlational research	278	r= 0.084

The table 1 signifies the research articles utilized for this systematic review of research question: what is impact of emotional regulation on academic achievement of students? Eight research studies were included in the analysis whose sample ranges from 278 to 2293 individuals. Different types of studies were included such as, longitudinal studies, cross-sectional studies and correlational studies. Wong et al. (2023), Costa and Faria (2015), and Halimi, AlShammari & Navarro (2020) identified a strong long-lasting relationship between ER and academic achievement. Research by Wong et al. (2023) revealed that effective emotionally regulated individuals have better academic achievement than others and its evidence came from the value of r (0.43) which indicates strong relation between ER and academic achievement. Similarly, Costa and Faria (2015) found a significant correlation ( $r = 0.295$ ) between emotional regulation and academic achievement in a longitudinal study of 380 secondary school students, supporting the idea that effective emotional regulation strategies contribute to long-term academic success. Cross-sectional research done by Graziano et al. (2007b) and Villavicencio and Bernardo (2012) also found a beneficial association between regulating emotions and academic success. Graziano et al. (2007b) discovered a modest positive association ( $R^2 = 0.29$ ) between regulating emotions and early academic achievement in 325

children, indicating that emotional regulation plays an important role in promoting academic performance from a young age.

Similarly, Villavicencio and Bernardo (2012) found a positive correlation ( $r = 0.22$ ) between pleasant academic emotions and academic accomplishment among 1345 individuals, indicating that emotional regulation may mitigate the link between self-regulation and academic success. MacCann et al. (2011) and Garg et al. (2016) found that emotional management moderated the link between emotional intelligence and academic success. MacCann et al. (2011) discovered that coping mediated the association between emotional intelligence and academic success in two separate research with 1159 and 2293 participants, respectively. Similarly, Garg et al. (2016) found that emotional intelligence had a substantial influence on postsecondary academic success, with emotional control serving as a critical mediating factor. However, some research, such as Mohzan, Hassan, and Halil (2013), found lower impact sizes or non-significant correlations between emotional control and academic success, indicating that findings may vary between settings or populations. Research by Mohzan et al. (2013) suggested that emotional regulation impact on academic achievement could be effect by other factors. The measures of the correlation ( $r=0.084$ ) indicate a slight positive relation. The analysis suggested that effective emotional regulation is positively correlated to academic achievements of students.

#### **4.1 Emotional Regulation Strategies and their Effect on Academic Achievement**

Two research articles related to emotional regulation strategies and their effect on academic achievement which provide extensive theoretical frameworks (table 2). First research of Harley et al. (2019) research is on an integrated model designed in academic performance context, which represents how cognitive change, attention deployment and response modulation affect academic achievement of learners. Gross (2015c) suggested strategies of emotional regulation such as scenario selection, modulation, and cognitive change. This research gives insight into emotional regulation strategies and their effect on academic achievement.

Articles	Type of Research
Harley, Pekrun, Taxer, & Gross (2019)	Theoretical research
Gross (2015c)	Theoretical research

#### **4.2 Situation Selection and Academic Achievement**

Harley et al. (2019) proposed an integrated model of emotion regulation tailored specifically for achievement contexts. In their model, situation selection plays a pivotal role in shaping the emotional experience and cascading outcomes

within achievement-related scenarios. An individual can choose to proactively manage their emotions — and in turn, their performance and well-being — by opting for specific situations that are more conducive or steering clear of others. Gross (2015c) extended the earlier model to focus on emotion regulation through situation selection as the first step of the regulatory process where individuals purposefully adapt their surroundings to affect their emotional experiences. He highlights scenario selection not only in accomplishment situations but other life areas too, which can lead people to have greater control over their response emotionally and subsequently behaviorally. This is achieved when one takes an active role in influencing his or her environment; for example, controlling emotions is possible for individuals involved in achievement-related contexts by proactively choosing or avoiding particular situations.

#### **4.3 Situation Modification and Academic Achievement**

The study by Harley et al. (2019) highlights situation modification as a primary strategy for managing emotions and enhancing performance in achievement situations. Situation modification is the act of changing certain elements of one's surroundings intentionally to elicit particular emotions that are conducive to positive outcomes. For example, a student may better his attention levels and reduce stress by organizing their workspace or adjusting lighting or even coming up with a proper study schedule all aimed at creating an environment where positive emotional experiences can be nurtured. Gross (2015c) identified situation modification as the second phase of emotional regulation, in this phase individuals change their external environment to modify emotional reaction.

#### **4.4 Attention Deployment and Academic Achievement**

Harley et al. (2019) suggested that for managing emotions attention deployments play a significant role. It also suggested that this strategy improves academic achievement of students. Gross (2015c) defined attention deployment as the process of directing attention to a better cause. Gross and Harley suggested attention deployment is an important component of emotional regulation in which individuals change their attention from emotionally instigating events, resultantly improving academic achievement by removing attention from the academic stress.

#### **4.5 Response Modulation and Academic Achievement**

The Harley study of 2019 emanates from the joint work of the three authors who proposed an all-encompassing model of emotion regulation, which they developed specifically for accomplishment situations. They drew notice to the fact that regulation of responses is an important strategy for both emotion regulation and optimization of performance. To be more specific, response

modulation is the regulation of emotional reactions involved in issues like anger, frustration, or being anxious in a situation of high goals. It consists of adaptive coping through the regulation of emotional responses. Gross (2015c) suggested response modulation as a grave element, which allows individuals to cope their emotional reaction and physical behavior. Gross emphasizes that individuals who modify their emotive responses can improve academic achievement through adaptive coping in the face of scholastic problems.

#### **4.6 Cognitive Change and Academic Achievement**

Harley et al. (2019) offer an integrated model of emotion regulation designed mainly to academic achievement, highlighting cognitive transformation as a crucial technique for controlling feelings and optimizing overall performance. Cognitive transformation is altering mind or ideals with a purpose to manage emotional reports and permit adaptive responses to educational problems. Gross (2015c) introduces cognitive transformation as a factor of the law system, in which people consciously reinterpret the means of emotional inputs for you to regulate their emotional studies and next behavior. Gross emphasizes that those who regulate their cognitive opinions can manipulate their emotional reactions and enhance adaptive coping inside the face of academic issues.

### **5. Discussion and Conclusion**

Many long-term studies that clearly show emotional regulation affects academic achievement over time (Costa & Faria, 2015; Halimi, AlShammari, & Navarro, 2020; Wong, Colasante, & Malti, 2023). Basically, if you're good at controlling your emotions, you're more likely to do better in school in the long run. And it's not just those long-term studies that support this idea. Graziano et al. (2007) and Villavicencio and Bernardo (2012) found a positive relationship between effective emotional regulation strategies and academic success. So, it looks like being able to manage your emotions can really help you do well in school. In a study by Brackett et al. (2012), the students who received this emotional regulation intervention had made huge improvements in their academic performance throughout the school year. A study by Durlak et al. (2011) analyzed social-emotional learning programs in schools; those programs actually had a positive impact on academic outcomes. It pointed out that learning to regulate your emotions helped students do better in their studies. MacCann et al. (2011) and Garg et al. (2016) research studies suggest that coping strategies and emotional intelligence play important roles in the connection between emotional regulation and academic performance. These findings help us understand the intricate dynamics of this relationship by clarifying how emotional regulation works. Eisenberg et al. (1998) research show that teaching

emotional regulation skills can really improve academic outcomes and it also identifies how different strategies for managing emotions can impact a student's grades. Harley et al. (2019) and Gross (2015) talk about techniques like situation selection, modification, attention deployment, response modulation, and cognitive change. These methods are key for individuals to effectively handle their emotions when it comes to school stuff. By using these tactics, students can better control how they feel and, as a result, improve their academic performance. Effective emotion management skills doesn't just help in the short term. it has long-lasting effects on education. It's important for educational settings to focus on teaching students how to regulate their emotions in the best way possible. By doing this, we can boost academic achievement and overall well-being. It's all about taking a comprehensive approach to help students succeed both in school and in life.

### **6. Recommendations**

Based on findings of study, following recommendations were drawn:

1. Secondary schools should include emotional regulation strategies into their curriculum to help students in managing stress and improving their academic performance.
2. It is also suggested to integrate long-term emotional regulation programs to ensure high academic achievement of the learners.
3. Educators should be trained to recognize emotional regulation challenges and incorporating strategies to promote positive learning.
4. It is also recommended to create supportive school environment that can promote emotional awareness and offers counselling services to manage stress.

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