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Review Article

Cognitive Insights from Emotional Intelligence: A Systematic Review of EI Models in Educational Achievement

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Abstract

Objectives: This study aims to investigate the relationship between Emotional Intelligence (EI) and academic achievement within educational settings. It seeks to determine how different EI models—specifically, Ability EI and Trait EI—impact students' academic performance, behavior, engagement, and motivation. The goal is to provide insights that can guide the integration of EI into educational practices to foster a more supportive and effective learning environment. *Methods/Analysis*: The study is based on a systematic review of sixty-four (64) peer-reviewed studies published between 2016 and 2023. These studies include randomized controlled trials (RCTs), longitudinal studies, and meta-analyses. The selected studies were analyzed to explore the effects of EI on various academic outcomes, including performance, behavioral engagement, and motivation. *Findings*: The analysis reveals that both Ability EI and Trait EI are positively associated with academic success. These models of EI appear to contribute significantly to the development of key skills such as emotional control, empathy, and problem-solving, which in turn support effective classroom management and academic achievement. The findings suggest that incorporating EI into educational curricula can lead to improved communication, better problem-solving abilities, and enhanced relationships between students and faculty. These improvements can create a more conducive learning environment and enhance overall academic outcomes. *Novelty/Improvement*: This study adds to the existing literature by offering a comprehensive review of recent studies that examine the role of EI in academic settings. It highlights the importance of implementing EI-focused interventions and curricula in schools, emphasizing the practical implications for educators and policymakers.

Keywords:

Emotional Intelligence;
Academic Achievement;
Trait EI;
Ability EI;
Mixed Model EI;
Emotional Regulation;
Learning Behavior;
Educational Setting.

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1- Introduction

1-1- Understanding Emotional Intelligence (EI)

Emotional intelligence (EI) is a relatively new concept in psychology that builds on traditional conceptions of intelligence. Emotional intelligence constitutes one's knowledge of, attention to, and ability to manage emotional and cognitive states in oneself and in others. It contains various traits or competencies, such as emotional awareness and regulation, empathy, and motivation that are fundamental to EI models. Various EI theories and models exist and include trait models that contain emotion-related competencies as well as the MBC model and the model of Mayer and Salovey. The latter distinguishes between an emotional and a cognitive aspect of intelligence. EI as a trait competes and detracts from cognitive abilities such as intelligence and cannot exist, due to this distinctiveness, nor will it have a direct influence on academic grades or achievement. The latter can, however, be influenced through complex cognitive abilities that involve emotional competencies [1-3].

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The definition and interpretation of EI in academic environments is important for several reasons. One of these is the fact that educators are frequently on the lookout for ways to enhance the quality of education. Because emotional and social learning claim to influence academic performance, EI is a desirable tool to employ to enhance learning, as it contributes to co-orientation between people by achieving effective social functioning and learning effectiveness. Moreover, from a broader and more complex point of view, becoming a human being involves the whole individual - his thoughts, intellect, body, feelings, and emotions. Neuroscience supports the discussion of emotional and intellectual integration as division levels of mind and below the level of mind. Stress and learning, as an internal chaos reaction, have a negative influence on a student's ability and capability to learn. Furthermore, a student's interpersonal relationships in the academic organization will suffer because of a lack of EI on the part of an educator. EI is not the only requirement for an effective and embracing education system, but it is one that may be needed or utilized to provide a safe, nurturing, and embracing learning environment. For scholastic advancement, the educational environment is critical [4-10].

1-2- Cognitive Processes and Educational Achievement

While there is no single explanation for school disparities, evidence has identified cognitive processes relevant to educational achievement. Educators have demonstrated interest in most of the constructs that make up the conceptualization of emotional intelligence. Emotional intelligence has received significant attention due to its potential connection to school productivity. Research in the field of emotional intelligence has demonstrated different associations with constructs that often come close to achievement, such as academic self-concept, causal attributions, academic performance, peer acceptance, and socio-emotional adjustment, control of academic performance, satisfaction, intrinsic motivation, and engagement. However, the practical implications of emotional intelligence in terms of locus of control and approach to learning have only been partially addressed, without focusing on the dimensional characterization of the emotional intelligence construct [11-14]. In the educational field, emotional intelligence research has followed the general trend of other social and emotional learning constructs, with several studies that provide the positive effects of intervention programs on various student outcomes; however, there is evidence that the IQ component significantly affects students with lower metacognitive skills. The conclusion is that students' self-perceived emotional abilities have a greater impact on academic performance for socially competent and highly metacognitive students because the cognitive processes are not hindered. However, to our best knowledge, little research to date has integrated metacognitive skills, age, and gender as moderators in the association between emotional intelligence and academic performance [15-20].

1-3- Impact of Emotions on Learning

Emotions have been shown to have a relevant impact on the behavior and actions performed by individuals. It is not controversial to affirm that learning is natural and develops while living. Being part of a learning context is an overall daily dynamic that involves emotions at different levels during the presence of an individual in an educational context due to different factors. Each experience contextualized in a specific educational action can elicit different emotions in the learner, generating specific or different feelings towards that educational context, thus creating a pedagogical relationship not only with the teacher, but also with knowledge, other students, professionals, and the environment involved. Considering that, individuals are biologically predisposed to experience several emotions during their life, and such experiences affect cognition and learning. Nonetheless, it is important not to consider emotions only as a mediator for cognition, but as an integral part of cognitive activity. Emotion regulation is an essential factor of emotional intellectual processes related to cognitive skills which influence the behavior of individuals, their performance, and academic learning [21-28]. Furthermore, emotions have been considered increasingly as being inseparable from cognitive processes. This is because the new educational perspectives in the scope of planning and carrying out teaching consider the person, acknowledging the importance of emotions and answering the demands of current society. Those being, above all, citizens with intellectual and emotional abilities to interpret situations, to think, to act, and to decide in life, being apt to assume a variety of roles, some not yet dreamed of. This also agrees with the definition of the term "emotional intelligence" that highlights the role of emotions in the development of intellectual skills. This concept emerges as a new way of understanding and harboring cognitive abilities and an affective aspect that involves positive emotions and personal competencies such as social skills, empathy, self-regulation, motivation, self-awareness, and self-realization [29-32].

1-4- Cognitive Factors in Academic Success

It is no coincidence that academic achievement includes several educational variables. Studies have shown that more intelligent subjects have a better learning capacity in general, and that intelligence thus forms the foundation of academic success. Some mention that more intelligent students take on less demanding strategies and that they use more advanced strategies (which we could attribute to those with better executive functions). Our working hypothesis is that advanced cognitive capabilities lead directly to better personal adjustment and better social competence. Then, in the case of students, these attributes become cognitive emotions establishing the relationships with broader constructs and academic

success [33-40]. It should not be surprising because individually, cognitive factors are moderately related to academic achievement; in the case of cognitive intelligence, research data suggests that this relation is similarly of moderate magnitude and magnitude. However, cognitive factors are more strongly related to achievement when we consider interactions among cognitive variables, general cognitive variables combining different cognitive factors, or social or other factors interacting with cognitive variables. It is expected because there are currently very powerful statistical algorithms for modeling regression or classification of variables by interactions such as the path analysis model, but at the same time, it helps us to be cautious in pointing to unique and multiple factor cognitive strategies as the general models of the intelligence-achievement relationship [41-45].

Emotional Intelligence (EI) in School Environment

Emotional Intelligence (EI) plays a critical role in the operational and functioning of school environments. It is the potential that an individual demonstrates to understand, perceive, manage, and use emotions in oneself and towards others in a positive and resourceful manner. In the educational environment, EI enhances personality development for both learners and educators to ensure a conducive and effective learning atmosphere [46-49]. The awareness of EI as an integral component of well-being has continued to increase, with it being considered necessary for overall academic excellence and interpersonal relationships in schools and other learning institutions. Schools may allow learners to develop their EI in different ways through the promotion of better communication, conflict management, stress control, kind and successful relationships between students and teachers, and more. The first work on the modern concept of EI was carried out in 1990 by Mayer & Salovey [50]. Their cognitive model of EI focused on the ability of an individual to use their emotions to reason and further employ them to enhance cognitive processes. According to the same author [50], four key components were proposed: perceiving emotions, using emotions to facilitate thought, understanding emotions, and managing emotions. This model emphasized the significance of emotional competencies in education, and an individual's ability to self-regulate and perceive emotions in others can significantly influence academic performance and interaction with others. Studies have shown that individuals with high EI have advanced abilities in handling stress, effective problem resolution, and the maintenance of social interaction. These characteristics cumulatively create a conducive and yielding educational environment. EI is one of the most critical aspects that can be used to create a conducive and effective learning environment. It allows teachers to meet the emotional needs of the students and to manage them, and it will enable students to self-manage their emotions and respond empathically to each other [51, 52]. EI is usually divided into two broad categories: as an inborn quality and a learned skill. Indeed, some definitions mentioned in the literature include both aspects. Therefore, to understand EI in a learning context, both aspects would be of utmost importance, and it becomes utterly essential to learn about Trait EI, Ability EI, and Mixed EI. By looking at these three pathways, one can have a better, detailed understanding of Trait EI, Ability EI, and Mixed EI from where they emerged uniquely, and if some areas require educational support and reinforcement will be established [12, 30, 39].

Models of EI

The Trait EI model remains anchored firmly in the emotional capabilities assessment and self-perception process modified by individualistic personality traits. According to it, a person must control and be aware of their emotions to develop their personality, sustain under varied life contexts, such as education or the workplace, and cope with stressors. This Ability EI is described as an ability to perceive, understand, and regulate both one's and others' emotions. It is directly focused on influencing the educational processes, critical thinking, and stress regulation under performance criteria. This concept influences academic success by creating an atmosphere of empathy that helps in learning through the improvement of cognitive functions like attention, memory, problem-solving, and the management of stress. A mixed model of EI contains parts of both the Trait EI and the Ability EI models, placing greater emphasis on understanding and applying emotional knowledge and skills across several social domains comprehensively. The model includes such practical features of EI as self-perceptions of abilities and inherent emotional abilities, which run coherently in educational settings, interpersonal relationships, and personal development [22, 34, 38].

Research Focus

It is in this regard that this paper seeks to analyze carefully the linkages between EI and children, adolescents, and instructors in a standard school environment. The paper will also try to explore how the influence of these relationships could reflect on the general culture of the school, interpersonal connections, and educational experiences. The incorporation of EI into education is growing conspicuously and has the potential to convert educational institutions to become successful, flexible, and considerate. Emotional intelligence is the understanding and ability to examine cognitively and perceive one's feelings or another person's in addition to participating in an activity in everyday life guided by such emotional states and how to combat circumstances that challenge them. Various aspects related to the day-to-day lives of children and adolescents, including their academic responsibilities, the ambient environment at school, and their personality traits, are influenced by EI [53-56]. The importance and relevance of EI are reinforced by the fact that not only its foundations, but also social and demographic dimensions are under research across countries and cultures. As Geraci et al. (2023) [57] stated, the behaviors of teachers contribute to the significant growth of EI in

the educational setting. Many research reports have also found a positive impact of academic activities on EI enhancement [58-60]. The teachers must realize that their EI directly contributes to students and, by way of a reaction, forms their EI finally. Students develop their own EI in response to the emotional and cognitive interactions they have with their teachers.

Research Questions

The following section presents a concise overview of seven research questions formulated by analyzing keywords, grouping, and identifying relevant studies in this systematic review. These research questions pertain to the relationship between EI and optimal academic performance, focusing on critical factors such as engagement, motivation, personality, and behavior based on the three conceptual pathways of EI (Trait EI, Ability EI, and Mixed EI):

- [RQ1] How do Trait, Ability, and Mixed models of EI differentially predict academic success in students across various educational stages?
- [RQ2] What role does Trait EI play in shaping students' motivation and engagement in the classroom compared to Ability EI?
- [RQ3] How do interventions aimed at enhancing Ability EI impact students' performance on standardized tests and classroom behavior?
- [RQ4] In what ways do Mixed models of EI provide a more comprehensive understanding of students' academic achievement and social interactions within the school setting?
- [RQ5] How does the development of EI, as defined by Trait, Ability, and Mixed models, influence teacher-student relationships and classroom dynamics?
- [RQ6] What are the differential effects of Trait, Ability, and Mixed EI on students' stress management and coping strategies in academic contexts?
- [RQ7] How do various models of EI correlate with leadership skills and peer relationships among students in educational settings?

These questions aim to explore the nuanced impacts of different EI models on educational outcomes, offering a holistic view of how EI shapes academic performance and behavior in educational settings. The synthesized key points from the present study on EI and academic achievement combining the above research questions (RQs) highlight the significance of different EI models: Trait EI, Ability EI, and Mixed EI. Trait EI focuses on self-perceptions and personality traits, positively influencing academic performance, engagement, motivation, teacher-student relationships, stress management, and leadership skills. Ability EI, centered on processing emotional information, enhances cognitive functions, stress management, and academic performance, and is crucial in EI interventions. Mixed EI, combining elements from both Trait and Ability EI, impacts social interactions, emotional skills, and overall academic achievement. Research questions explored in this context include the prediction of academic success, the role of EI in motivation and engagement, and the effects of EI interventions on academic outcomes (Figure 1)

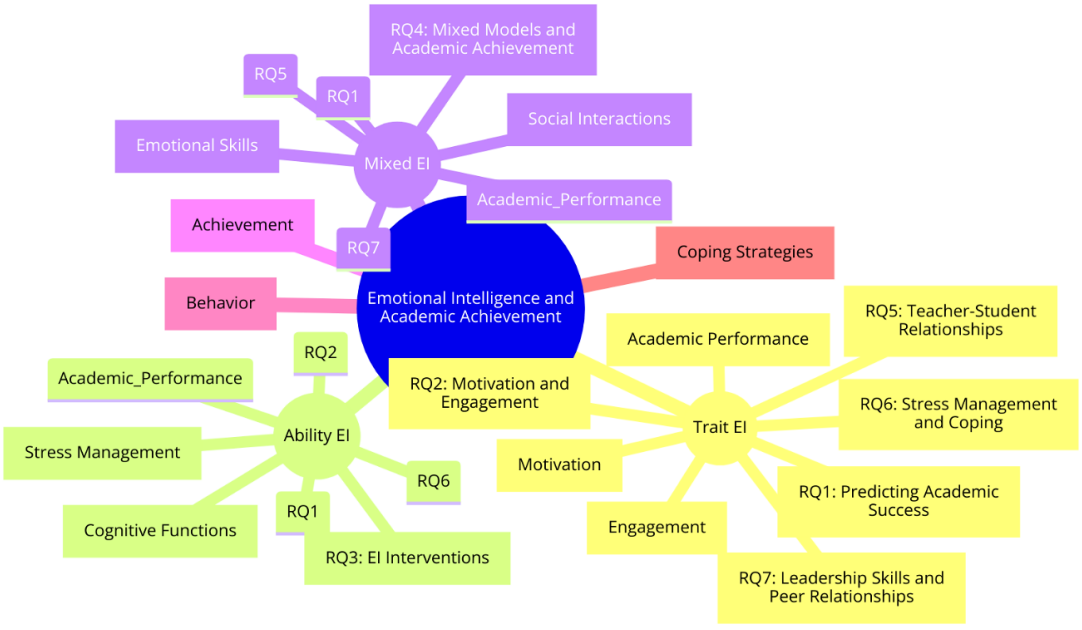

Figure 1. Key Points Mind-Map of the Theoretical Research Framework

2- Literature Review

2-1- Ability EI and Academic Success

EI plays a vital role in academic success through various pathways; potential interventions and forms of support can be assessed from that point. It is noted from the study that the correlation between academic success and ability EI is positive, with higher scores on ability EI indicating better performance in academics for the individuals studied [61]. Ability EI is also associated with academic engagement, which is essential for academic success. This is because it mobilizes active involvement and effort by students toward their studies. The role of ability EI in predicting academic achievement has been shown to be consistent across many learning environments, such as those in medicine, dentistry, and e-learning. These results underline the potential of targeted interventions within educational settings and the multifaceted influence of ability EI on academic success. The pathways through which ability EI leads to academic success present avenues where critical educational interventions are possible. The same researchers [61] argued that ability EI development programs should be part of educational curricula with support initiatives because the relationship between ability EI and academic achievement shows that it is there, but developing students' EI in a bid to increase their academic performance is worth it.

This is further illustrated by the fact that those interventions aimed at enhancing the emotional skills of students and their engagement with the learning process have potential since their EI can be promoted toward increased active engagement in the learning process. The correlation that exists between clinical performance and EI suggests that professional training programs have the inclusion of EI development for the facilitation of success in clinical practice by students [62].

2-2- Trait EI and Academic Success

Trait EI is also quite important for the attainment of academic success through various pathways. In such findings, academic achievement has been noted to be positively associated with the goal setting and planning facets of the trait EI domain [63]. That is how much these constituents' matter in the academic setting. Academic resilience is attributed to trait EI, which allows students to continue and succeed within a challenging environmental context. Further, trait EI indirectly predicts academic satisfaction through career adaptability, contributing to the general quality of the study and the well-being by students [64]. These results underline the multifaceted impact of trait EI on academic success and the areas in which educational intervention and support are needed. The current findings clarify how trait EI influences academic success. As a recent study by Piqueras et al. [65] indicated, interventions at a targeted level could raise the emotional skills and resilience of the students to a new level. They also encouraged good mental health and psychosocial adjustment by targeting emotional education interventions that enhanced resilience. Investments in Trait EI developmental interventions should be implemented within student support initiatives, as research supports the potential to contribute to sustained student success, which suggests the importance of programs for trait EI development in educational settings [66]. The impact that trait EI has on academic achievement is that a student's implicit theories and EI are ways to facilitate their academic success [67].

2-3- Theoretical Frameworks Differentiating Ability EI and Trait EI

Theoretical frameworks and models discriminating between ability EI and trait EI provide critical insights into the specific functions of ability EI in academic performance. Tommasi et al. [68] define Mayer and Salovey's model, representing ability EI, as a kind of intelligence or mental ability that highlights skills in learning, problem-solving, and attaining goals in life. This model suggests that the development of emotional skills through ability EI can directly enhance learning, problem-solving, and goal attainment. In contrast to this model, Petrides' trait emotional self-efficacy model highlights stable personality traits associated with EI and, therefore, represents an alternative approach among EI-related models using self-report measures in one form or another [69]. Trait models, on the other hand, place much emphasis on the role of emotional self-efficacy in influencing academic achievement to such an extent that individuals with higher levels of trait EI will portray greater levels of confidence and competence in their ability to manage feelings, hence positively affecting their academic performance. The integrated model of affect-related individual differences supports the view that EI-related characteristics can be considered constituents within the existing models of cognitive ability (ability EI) and personality (trait EI) [70]. This integrated model suggests that there is an influence from both traits and abilities of EI on academic achievements and influences, in turn, cognitive ability and personality traits. The tripartite model of EI offers a full view of the multidimensional impact of EI on academic achievement and is gaining ground in contexts of performance and health [71]. This model suggests that educational success is considerably explained by the interaction of trait EI with ability, both through the effects of emotional regulation and well-being.

2-4- EI in Educational Settings

EI is of critical importance in educational environments because it is the ability to use information effectively for the guidance of cognitive processes and behaviors by recognizing, appraising, and evaluating emotions in oneself and others. The significance of general well-being and achievement, particularly in educational environments, is becoming more

widely recognized today [72]. This mixed model of EI about academic achievement and learning behavior is addressed by various research studies that have combined elements from both the trait model and ability model of EI. Several research studies have underscored the efficacy of the combined EI model in understanding and predicting academic success and learning behaviors [73-76]. In children, the relationship between EI and better learning capabilities, as well as enhanced personal relationships, has been identified. In schools, the implementation of EI learning helps to further children's understanding and control of their own feelings, which include typical emotions such as frustration, anger, or upset. It also encourages awareness of other people's feelings, from which healthy social relationships develop. Early periods of children's development are good periods in which EI can be developed, improving their resilience and capacity to overcome various obstacles [74, 77].

Most adolescent children experience diverse social situations and emotions. EI can be very beneficial for them since it enhances their capacity to effectively navigate and manage the myriad issues encountered by adolescents. Adolescents with high EI are more likely to show better skills in dealing with academic pressures, understanding and controlling their feelings, and successfully negotiating social situations [78]. This, in turn, translates into better academic performance, enhanced relationships with others, and lower levels of behavioral problems. Educator priorities can be such that educators with EI and heightened EI can feel the emotional states of their students and, therefore, better understand their needs. They enhance the creation of nurturing student relationships and are better at classroom management strategies. In addition, teachers with high EI are likely to deal better with their emotions and hence will have reduced burnout and, consequently enhanced job satisfaction. The EI of both students and teachers influences classroom behavior considerably. Few studies have shown that teacher EI significantly influences teacher-student interaction in such a way that it increases student achievement and affects classroom discipline. In addition, the level of pupils' social-emotional and behavioral skills is associated with the classroom management techniques and emotional expressiveness of their teachers [79].

For instance, EI plays a crucial role in students' motivation to learn. The emotion that students depicted determined the level of self-regulated learning and motivation, which, in turn, predicted their academic success [80]. EI enables college students to regulate, manage, and identify emotions. As such, they are highly motivated to study and have an intense interest in learning [81]. It helps increase the resilience and self-efficacy of students towards online learning activities. EI should also be built in students because of its strong influence on student engagement and school well-being in their learning process. Different programs aimed at developing EI have been used in educational research. For instance, EI skills are developed in pre-adolescents through school-based programs; through such programs, enhancements have been achieved in the EI abilities of students. There is a very high degree of consistency between cognitive well-being, EI, and academic achievement. People with high EI possess high cognitive capacity, efficient emotion regulation, excellent problem-solving ability, and a high level of perseverance under stress, which is crucial for high academic performance [82].

The present study analyzes the differential impacts of the various EI assessments on academic achievements with an emphasis on Trait EI, Ability EI, and Mixed EI. High trait EI normally results in awareness of self, emotions, and control over them; so, it is a positive feature that promotes resilience and ultimately better academic achievement. Trait EI represents an ability related to self-perception of emotional abilities, whereby this is normally assessed via a self-report questionnaire. For students, higher Trait EI translates to higher academic engagement and motivation, more positive classroom behaviors, better interpersonal relationships, and an overall better learning experience. Furthermore, it helps to reduce academic burnout, enhances academic performance, and provides stress management capabilities. For example, teachers with high levels of Trait EI have better abilities for coping with stress, which adds value to the learning outcomes of students and the effectiveness of their teaching [64, 83]. EI abilities are judged mainly by performance measures and, thereby are marked by authentic skills in processing emotional information and handling social settings. It needs those cognitive processes such as memory, attention, problem-solving, which are important for academic achievement, to be honed by competencies like recognition, understanding, and regulation of emotions. Research has indicated a high correlation with academic achievement and Ability EI, particularly in those disciplines where a high level of cognition is demanded, e.g., mathematics and science. For instance, the ability to manage emotions allows students to score high in classroom activities and standardized tests. For example, emotion regulation training is an approach to enhancing the real emotional skill of students for better performance academically, which has also proved effective in interventions [84, 85].

The Mixed EI model incorporates components of both Trait and Ability EI, considering self-perceptions and actual emotional skills. This model integrates self-reported emotional abilities with quantifiable emotional skills to offer a more comprehensive understanding of the impact of EI on academic performance. Students' social-emotional skills, attitudes, and well-being are positively impacted by programs based on the Mixed EI model, such as Social and Emotional Learning (SEL) interventions. These programs help students develop various emotional competencies crucial for academic success. The Mixed model's integration of Trait and Ability EI facilitates the development of comprehensive emotional skills, thereby improving students' engagement, motivation, and social interactions in the school environment [41, 86].

In summary, Trait EI primarily influences academic attainment through self-perceptions and personality traits, which in turn affect students' engagement, motivation, and stress management. Academic performance is influenced by EI through measurable emotional skills that improve cognitive functions and problem-solving abilities. Mixed EI is a comprehensive approach that supports interventions enhancing a broad spectrum of emotional and social skills by integrating components of both models. The significance of integrating EI into educational practices to promote academic success and overall student well-being is emphasized by these differential effects. The research emphasizes the necessity of targeted EI interventions and curricula that address both Trait and Ability EI to establish supportive learning environments and improve academic outcomes [53, 87]. It is crucial to recognize that academic success is significantly influenced by EI through a variety of pathways, such as academic achievement, engagement, and clinical performance. Theoretical frameworks and models offer valuable insights into the unique contributions of ability EI and trait EI to academic achievement. Students' academic performance, resilience, engagement, motivation, and emotional regulation are all influenced by their EI. By integrating EI development programs into educational environments, educators and practitioners can establish a supportive environment that encourages students' emotional skills and engagement, thereby contributing to their academic success [80].

3- Materials and Methods

This study thoroughly analyzes the current body of literature conducted in the English language. The assignment required performing a literature search on EI, adhering to the PRISMA guidelines that specify the recommended reporting items for systematic reviews [88]. The study employed the following criteria to determine which articles would be included: 1) Articles must be written in English. 2) Articles must be produced between 2016 and 2023. 3) Articles must be relevant to the subjects of psychology and education. 4) Articles must be in the final stage of publishing. 5) Verification is required to confirm that the content is highly pertinent to the subject. The study examined articles about the EI of students, teachers, and the wider educational environment. After thoroughly searching databases and applying appropriate filters, 462 articles were identified in the first step, Identification. In the second step, known as Screening, a total of 210 articles were subjected to Screening based on their titles. Out of these, 112 articles were removed due to titles that were irrelevant to the topic, and 6 articles were excluded due to language restrictions. Additionally, 7 articles still need to be retrieved. As a result, a total of 85 articles were distinguished, with 21 being non-reviews and therefore excluded. In the last stage (Included), after thorough deliberation, 64 papers were selected for additional examination (Figure 2).

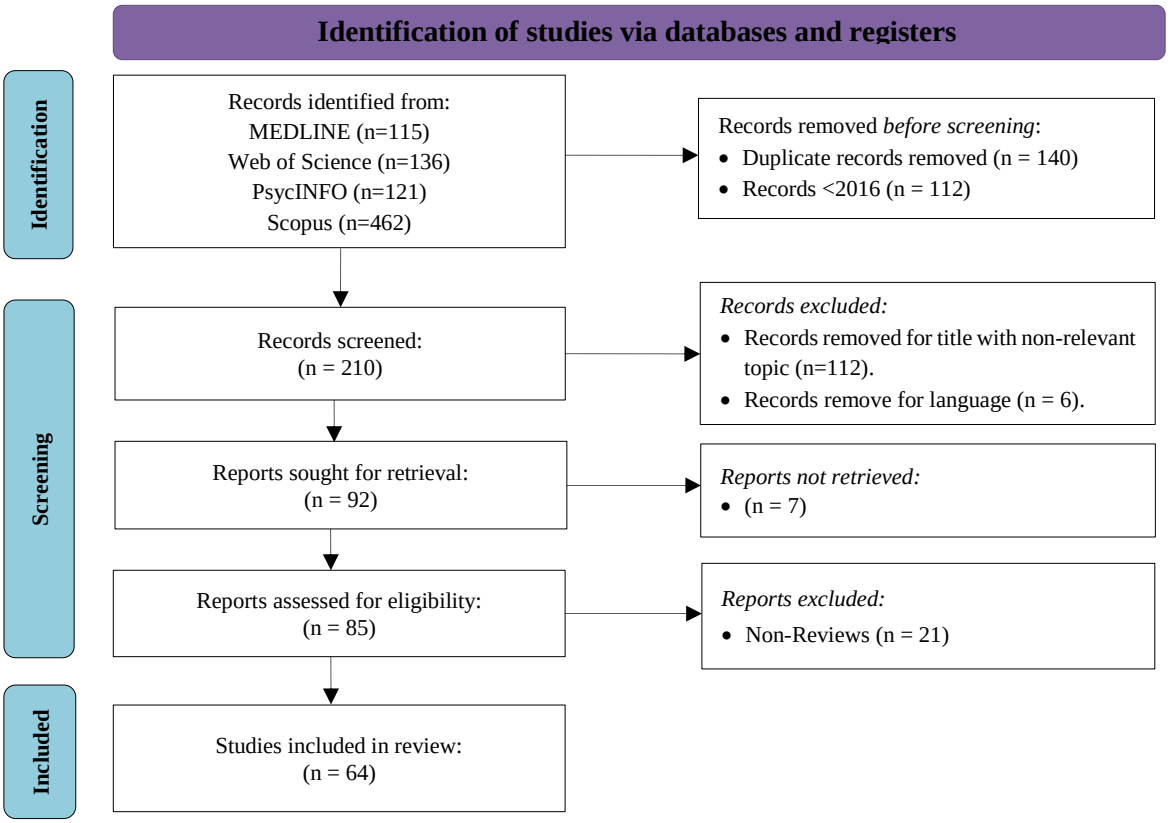

Figure 2. Flowchart of PRISMA Methodology

A total of 64 studies that formed the basis of this systematic review were selected based on predefined inclusion and exclusion criteria. The search considered only English language articles published between 2016 and 2023. Regarding

direct relevance to psychology, education, or EI, priority was given to finding peer-reviewed research which was final-stage published. The eligibility criterion would be that only those studies which have solely targeted the emotional intelligence of students and/or teachers and/or educational environment would be included. The methodologies could include RCTs, longitudinal studies, reviews, or meta-analyses. In this line, exclusion criteria included eliminating studies published in a language other than English and unrelated papers to the key issues studied. For this reason, studies were excluded with non-relevant titles presenting a duplicate study issue or those whose year of publication was earlier than 2016. Besides that, papers reporting non-review studies or failing to present a systematic or methodological approach were not considered. Since this is so, only high-quality and relevant articles will be selected for analysis using the PRISMA methodology.

The AMSTAR-2 tool was employed to evaluate the quality of the included studies, with an emphasis on seven critical criteria. The risk of bias assesses the potential for bias to arise from the study's design or execution. Inconsistency evaluates the degree of variability among studies, with higher ratings suggesting greater variability. On the other hand, indirectness evaluates whether the evidence directly addresses the research question, with lower ratings indicating direct applicability. Imprecision is a metric that quantifies the degree of certainty surrounding the effect estimates, with higher ratings indicating a greater degree of uncertainty. Publication bias assesses the probability that published results deviate systematically from unpublished ones, with higher ratings suggesting a substantial risk. The confidence in the study's findings is determined by an aggregate assessment of the overall quality of evidence, which considers all other domains. A comprehensive overview of the methodological quality and reliability of each study is facilitated by the color-coding of each criterion, which is rated as 'Low', 'Moderate', or 'High' for visual clarity (See Table 1).

Table 1. Quality Assessment of Included Studies (N=64)

Reference	Risk of Bias	Inconsistency	Indirectness	Imprecision	Publication Bias	Quality of Evidence
Agnoli et al., 2022 [89]	Low	Low	Low	Low	Low	High
Alam et al., 2021 [90]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Amirian et al., 2020 [91]	High	High	High	High	High	Low
Bakadorova & Raufelder, 2017 [92]	Low	Low	Low	Low	Low	High
Camacho-Morles et al., 2021 [76]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Chen and Zhang, 2022 [93]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Pascual et al., 2019 [94]	High	High	High	High	High	Low
Costa & Faria, 2023 [75]	Low	Low	Low	Low	Low	High
López-Cassà et al., 2022 [86]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Forsblom et al., 2022 [95]	Low	Low	Low	Low	Low	High
Frenzel et al., 2018 [96]	Low	Low	Low	Low	Low	High
Garon-Carrier et al., 2016 [97]	High	High	High	High	High	Low
Geraci et al., 2023 [57]	Low	Low	Low	Low	Low	High
Luque-González et al., 2022 [48]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
González-Alonso et al., 2020 [98]	Low	Low	Low	Low	Low	High
Gustavsen, 2017 [99]	Low	Low	Low	Low	Low	High
Hong et al., 2020 [100]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Joulaei et al., 2022 [101]	Low	Low	Low	Low	Low	High
Jung et al., 2023 [54]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Vineeth Kumar & Tankha, 2023 [102]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Kwon et al., 2018 [103]	High	High	High	High	High	Low
Lang, 2018 [104]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Lei & Cui, 2016 [87]	Low	Low	Low	Low	Low	High
Lei et al., 2018 [105]	Low	Low	Low	Low	Low	High
Li & Xu, 2019 [106]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Li et al., 2022 [107]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Lichtenfeld et al., 2023 [108]	Low	Low	Low	Low	Low	High

Lim, 2023 [74]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Linden et al., 2017 [109]	Low	Low	Low	Low	Low	High
Lozano-Blasco et al., 2022 [110]	High	High	High	High	High	Low
Maamari & Majdalani, 2019 [111]	Low	Low	Low	Low	Low	High
Maamari & Salloum, 2023 [112]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
MacCann et al., 2020 [73]	High	High	High	High	High	Low
Mahmud, 2020 [113]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Manwaring et al., 2017 [114]	Low	Low	Low	Low	Low	High
Martin, & Collie, 2019 [115]	Low	Low	Low	Low	Low	High
Mendo-Lázaro et al., 2018 [116]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Muhtadi et al., 2022 [117]	Low	Low	Low	Low	Low	High
Nasti et al., 2023 [55]	High	High	High	High	High	Low
Nasvytienė & Lazdauskas, 2021 [118]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Olderbak et al., 2018 [119]	Low	Low	Low	Low	Low	High
Pekrun et al., 2017 [120]	High	High	High	High	High	Low
Pozo-Rico et al., 2023 [51]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Quílez-Robres et al., 2021 [121]	Low	Low	Low	Low	Low	High
Quiroz, 2020 [122]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Salmela- Aro et al., 2021 [123]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Sánchez-Álvarez et al., 2016 [124]	Low	Low	Low	Low	Low	High
Sánchez-Álvarez et al., 2020 [125]	Low	Low	Low	Low	Low	High
Sofeia, 2023 [126]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Tang & He, 2023 [81]	Low	Low	Low	Low	Low	High
Tartakovsky & Vorobiova, 2022 [127]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Taylor et al., 2017 [128]	Low	Low	Low	Low	Low	High
Thornberg et al., 2020 [129]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Ulmanen et al., 2016 [130]	Low	Low	Low	Low	Low	High
Walker et al., 2022 [131]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Wang & Liu, 2023 [132]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Wang & Wang, 2022 [133]	Low	Low	Low	Low	Low	High
Wang et al., 2016 [134]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Wang et al., 2021 [135]	Low	Low	Low	Low	Low	High
Xu et al., 2019 [136]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Xu et al., 2020 [137]	Low	Low	Low	Low	Low	High
Zee & Koomen, 2019 [138]	Low	Low	Low	Low	Low	High
Zhen et al., 2020 [139]	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
Zhoc et al., 2020 [140]	Low	Low	Low	Low	Low	High

Additionally, using the PRISMA methodology described above, all the obtained articles are listed in Table 2. To fulfill this objective, a comprehensive search was conducted in Scopus, PsycINFO, PubMed, and WoS databases. The search used the following keywords: EI, student/teacher, academic performance, and school setting. The present study incorporated various types of studies, which were classified into three primary categories: (a) Randomized Controlled Trial (RCT), b) Longitudinal, c) Review and Metanalysis. The Figure 3 presents a visually updated representation of the classification of Emotional Intelligence (EI) models across different study types. It categorizes the models into three main types: Trait AI, Ability EI, and Mixed EI, and compares them across three different research methodologies: Review and Meta-Analysis, Longitudinal studies, and Randomized Controlled Trials (RCT). The data clearly illustrates that Trait AI is the most frequently analyzed across all study types, with the highest count in Review and Meta-Analysis studies, while Mixed EI also shows significant representation across all methodologies (Figure 3).

Table 2. Main Results and Study Characteristics

Authors	Research Design	Sample	Outcomes Measured	Main Findings	EI Model
Agnoli et al., 2022 [89]	RCT	448 children	• Creative Potential • Emotional Intelligence • Academic Performance	• Educational intervention aimed at increasing the cognitive and metacognitive parts of children's creativity could be more beneficial for children characterized by low levels of EI • The analysis showed, indeed, that the training had positive effects on the ability to create original content in children with low and medium levels of EI	Trait EI
Alam et al., 2021 [90]	RCT	387 students	• Perceived Study Stress • Burnout • Performance of Students	• E-learning and EI have a significant influence on perceived study stress, burnout, and performance of Pakistani students. • Emotion regulation theory can be applied to understand the effects of e-learning and EI on students. • EI has a significant impact on the psychological pressure of a student.	Trait EI
Amirian et al., 2020 [91]	RCT	48 students	• Academic Achievement • Emotion Regulation • Cognitive Abilities • Cognitive rehabilitation	• Cognitive rehabilitation is effective in improving academic achievement in students with PTSD ($P<0.01$). • Emotion regulation can moderate the effect of cognitive rehabilitation on academic achievement ($P<0.05$). • Cognitive rehabilitation can strengthen cognitive abilities and components related to executive functions, leading to improved educational performance and academic achievement in students with PTSD.	Ability EI
Bakadorova & Raufelder, 2017 [92]	Longitudinal	1088 students & 845 students	• Students' Perception Of Peers As Positive Motivators • Behavioral School Engagement • Emotional School Engagement • Students' School Self Concept	• There is a positive association between adolescents' school self-concept and engagement. • Students' perception of peers as positive motivators at the beginning of 8th grade positively predicts their behavioral school engagement at the end of 9th grade. • Behavioral school engagement at T1 functions as a predictor of a student's school self-concept at T2.	Trait EI
Camacho-Morles et al., 2021 [76]	Review, Meta-Analysis	68, 31,868, 11,153, 1,418, 28,410, children/students	• Academic Performance • Enjoyment of Learning • Emotions • Self-regulation • Cognition	• There is a positive relation between enjoyment of learning and academic performance ($\rho = .27$), whereas the relations were negative for both anger ($\rho = -.35$) and boredom ($\rho = -.25$). • Relations of activity emotions with academic performance are stronger when students are in secondary school compared with both primary school and college, and when the emotions are measured by the Achievement Emotions Questionnaires – Mathematics (AEQ-M). • Achievement emotions are linked to motivational, self-regulatory, and cognitive processes that are crucial for academic success.	Mixed EI
Chen and Zhang, 2022 [93]	RCT	231 students	• Self-Efficacy • Emotional Intelligence • Self-Esteem	• Emotional intelligence appears to positively predict creativity self-efficacy, and it seems that this is also influenced by self-esteem. • Gender seems to have an influential role mainly in self-esteem and positively affects boys and not girls	Trait EI
Pascual et al., 2019 [94]	Review, Meta-Analysis	7,947 children	• Academic Performance • Language Performance • Mathematics Performance	• A meta-analysis of 21 samples ($n = 7,947$) demonstrated a moderately significant weighted effect size ($r = 0.365$) between executive functions and academic performance in primary education (6–12 years). • Working memory had the highest presence ($k = 14$, $n = 3,740$) and predictive weight for performance, with an effect size of $r = 0.370$ for random effects, with a moderate level of significance. • Gender resulted in a value of $R2 = 0.49$; the age variable was not significant.	Ability EI
Costa & Faria, 2023 [75]	Longitudinal	222 students	• Implicit Theories of EI (ITEI) • Emotional Intelligence • Emotions Towards School • Academic Achievement • Negative Emotions	• Implicit theories of ITEI are related to EI (ability and trait) in the following year. • ITEI is linked to students' emotions towards school and academic achievement (Portuguese academic grade) at the end of secondary school. • Ability and trait EI mediate the link of entity ITEI and negative emotions and achievement.	Mixed EI
López-Cassà et al., 2022 [86]	RCT	259 students	• Personality • Emotional Intelligence	• There is correlation of b2 {big two personality factors} and b1{Big one personality factor} personality factors with EI. • There is not much influence of the b5 {big 5 personality factors} factors on EI, except for 2 that appeared to predict it and these were impulsiveness and neuroticism.	Trait EI

Forsblom et al., 2022 [95]	Longitudinal	1,716 students	• Perceived Competence In Math • Perceived Value Of Math • Math Emotions (Enjoyment, Anger, And Boredom) • Math Achievement (School Grades In Math)	• Control-value appraisals influence the emotions, and the emotions influence achievement. • Enjoyment positively predicted subsequent math achievement, while anger and boredom negatively predicted achievement. • Achievement showed reciprocal positive predictive effects on subsequent perceived competence, value, and enjoyment, and negative effects on subsequent anger and boredom.	Trait EI
Frenzel et al., 2018 [96]	Longitudinal	69 teachers & 1,643 students	• Teachers' Enjoyment • Students' Enjoyment • Teachers' Observations of Students' Engagement in Class • Students' Perceptions of Teachers' Enthusiasm During Teaching	• A reciprocal effects model of teacher and student enjoyment was proposed and tested, which suggests that there are positive reciprocal links between teachers' and students' enjoyment. • The model was supported by 3-wave longitudinal data collected from 69 teachers and their 1,643 students. • Teacher and student enjoyment were found to be positively related to each other, and these links were mediated by teachers' and students' observations of each other's classroom behaviors.	Trait EI
Garon-Carrier et al., 2016 [97]	Longitudinal	1,478 students	• Intrinsic Motivation Toward Mathematics • Achievement In Mathematics	• Achievement predicted intrinsic motivation from Grades 1 to 2, and from Grades 2 to 4. • Intrinsic motivation did not predict achievement at any time. • This developmental pattern of association was gender invariant.	Mixed EI
Geraci et al., 2023 [57]	RCT	65 early childhoods to secondary teachers	• Burnout • Work Engagement • Academic Performance • Self-Efficacy • Emotional Intelligence	• Teachers reported feeling more burnout and lower self-esteem because of distance learning • The negative effects of COVID-19 differed according to levels of EI • The higher EI teachers have, the better they can deal with these negative effects	Trait EI
Luque-González et al., 2022 [48]	RCT	1,104 students	• Emotional Intelligence • School Climate	• The dimension of emotional restoration, emotional clarity and emotional attention were the highest. Levels of EI and level of school climate were higher in Spanish students • Girls showed higher scores compared to boys on emotional attention. There was a correlation between school climate and EI, gender and country are unrelated to the relationship between school climate and dimensions of EI	Trait EI
González-Alonso et al., 2020 [98]	Longitudinal	55 students	• Level Of Conflict • Perceptions About Bullying • Behaviour Of Students Based on Their Level of Coexistence With The Group Of Classmates	• The ICCC programme was effective in reducing levels of conflict and improving perceptions of bullying among Secondary Education students. • There were no differences between the control and experimental groups in terms of gender. • The programme should be implemented over a longer period of time in order to improve school coexistence and social skills of students from the early stages of education.	Ability EI
Gustavsen, 2017 [99]	Longitudinal	2,266 teachers	• Teacher Rated Academic Achievement in Norwegian • Teacher Rated Academic Achievement in Mathematics • Teacher Rated Academic Achievement in English	• Teacher-rated social skills at T1 had a significant influence on boys' and girls' academic achievement two years later, but the fixed effect varied by subject. • Social skills seemed to explain the variance in mathematics and Norwegian but not English, when controlling for previous academic achievement. • There were no gender differences in the influence of social skills on academic achievement.	Ability EI
Hong et al., 2020 [100]	Longitudinal	789 students/teachers	• Behavioural Engagement • Cognitive Engagement • Emotional Engagement	• Behavioural engagement stably predicted cognitive and emotional engagement over time. • The prediction of cognitive engagement on emotional engagement was not consistent from T1 to T2 and from T2 to T3. • Emotional engagement significantly predicted behavioural and cognitive engagement only from T2 to T3.	Trait EI
Joulaei et al., 2022 [101]	RCT	191 students	• Resilience • Emotional Intelligence	• The practice of resilience positively affects the development of EI, especially in boys, since mainly in them a significant statistical difference is observed in EI performances concerning, for example, problem solving, happiness, impulse control, self-awareness, optimism, self-concentration and more generally EI at the level of the intervention.	Trait EI
Jung et al., 2023 [54]	RCT	115 school-aged children (8-9 years old) and their parents	• Shyness • Emotional Intelligence • Social Skills	• Emotional intelligence moderates the relationship between shyness and internalizing behaviors. • Emotional intelligence may help avoid internalizing behaviors for some shy children in middle childhood.	Trait EI

Vineeth Kumar & Tankha, 2023 [102]	RCT	342 students	• Emotional Intelligence • Personality	• The Big Five factors, Neuroticism, Conscientiousness, Extraversion, Receptiveness, and Openness, served as predictors of Global Trait EI.	Trait EI
Kwon et al., 2018 [103]	Longitudinal	199 children	• Negative Emotionality • Emotion Regulation • Achievement • Academic Engagement	• Cross-lagged path analyses indicated significant directional effects from negative emotionality and emotion regulation to achievement, but not vice versa. • The link from negative emotionality and emotion regulation to achievement was mediated through academic engagement. • Promoting children's academic skills might have a broader positive impact on children's emotional development.	Ability EI
Lang, 2018 [104]	RCT	40 students	• Regulated Negative Emotion • Perceived Empathy	• A 5-week EI training program did not result in a meaningful improvement in regulated negative emotion dimensions and perceived empathy when post training changes were compared between both groups. • 80% of people's success relates to skills that are in some way related to EI. • An appropriate control group plays an important role in studies evaluating interventions to survey EI on the emotion regulation of bullying students.	Ability EI
Lei & Cui, 2016 [87]	Meta-Analysis	17,548 students	• Academic Achievement • Emotional Regulation	• There was a positive correlation between positive high-arousal (PHA) and positive low-arousal (PLA) emotions and academic achievement (r PHA = .312, r PLA = .376). • There was a negative correlation between negative high-arousal (NHA) and negative low-arousal (NLA) emotions and academic achievement (r NHA = -.179, r NLA = -.371). • The effects of academic emotions on academic achievement were moderated by regional location, age, achievement domain match, and gender.	Mixed EI
Lei et al., 2018 [105]	Meta-Analysis	196,473 students	• Overall Student Engagement • Behavioral Engagement • Emotional Engagement • Cognitive Engagement • Academic Achievement	• There was a moderately strong and positive correlation between overall student engagement and academic achievement. • An analysis of the domains of behavioral, emotional, and cognitive engagement showed that almost all had a positive correlation with students' academic achievement. • The relationship between student engagement and academic achievement was influenced by the method of reporting engagement, cultural value, and gender.	Ability EI
Li & Xu, 2019 [106]	RCT	1,718 students	• Foreign Language Enjoyment (Fle) • Foreign Language Anxiety (Fla) • Emotional Intelligence (Ei)	• A correlational study showed medium correlations between students' EI, FLE, and FLA. • An intervention study showed that a PP-based EI intervention was effective in improving EI, boosting more positive classroom emotions and alleviating negative classroom emotions. • The findings have theoretical and practical implications for L2 education.	Trait EI
Li et al., 2022 [107]	Longitudinal	271 children	• Child Psychological Abuse and Neglect (Cpan) • Children's Learning Engagement • Family Socioeconomic Status (Family Sees) • Academic Achievement	• CPAN at T1 was associated with academic achievement at T2, mediated by learning engagement at T1. • Family SES at T1 moderated the relationship between learning engagement at T1 and academic achievement at T2. • Learning engagement is a critical factor in children's academic achievement, especially for those from low SES families.	Trait EI
Lichtenfeld et al., 2023 [108]	Longitudinal	670 students	• Enjoyment • Boredom • Anxiety • Students' Emotions During Learning • Students' Emotions When Taking Test and Exams in Math • School Grades in Math • Math Achievement Test Scores	• Enjoyment decreased, whereas boredom and anxiety remained relatively stable across second to fourth grade. • Enjoyment positively predicted subsequent achievement, and achievement positively predicted subsequent enjoyment. • Boredom and anxiety negatively predicted subsequent achievement, and achievement negatively predicted subsequent boredom and anxiety.	Trait EI
Lim, 2023 [74]	RCT	48 children	• Emotional Intelligence • Social Skills • Self-awareness	• The experimental group showed a statistically significant improvement in some areas of EI, specifically in self-awareness and relationship management, compared to the control group.	Mixed EI
Linden et al., 2017 [109]	Meta-Analysis	36,268 students	• General Factor of Personality (Gfp) • Emotional Intelligence • Trait Ei • Ability Ei	• There is a large overlap between the GFP and trait EI ($r \approx .85$). • There is a positive, but more moderate, correlation with ability EI ($r \approx .28$). • The GFP is very similar, perhaps even synonymous, to trait EI.	Trait EI

Lozano-Blasco et al., 2022 [110]	Meta-Analysis, Systematic Review	42,061 students	• Academic Performance	• Intelligence is a significant, positive and moderate predictor of academic performance ($r = 0.367$; $p < 0.001$). • The predictive capacity of intelligence on school performance is influenced by the type of intelligence and the country of origin. • Age and gender do not have a significant influence on the predictive capacity of intelligence on academic performance.	Ability EI
Maamari & Majdalani, 2019 [111]	RCT	283 students & 10 teachers	• Student Satisfaction • Emotional Intelligence (Ei) Of Students	• The primary factor that will increase the EI of students is not the EI of the teacher, but the class interactions. • Universities should hire emotionally intelligent teachers to increase the EI of their students. • Increasing the EI of students will improve the business situation of universities, as students will be more likely to remain and encourage others to do so.	Trait EI
Maamari & Salloum, 2023 [112]	RCT	410 students & 32 teachers	• Teaching Effectiveness	• High EI is important for teaching effectiveness at universities. • Personality traits of the teacher moderate the positive relationship between EI and teaching effectiveness. • Universities should hire emotionally intelligent teachers and conduct EI workshops for existing teachers in order to improve their EI skills.	Trait EI
MacCann et al., 2020 [73]	Meta-Analysis	42,529 students	• Academic Performance • Emotional Intelligence	• EI is associated with academic performance ($\rho = .20$). • Ability EI is a stronger predictor of academic performance than self-rated or mixed EI ($\rho = .24, .12$, and $.19$ respectively). • EI is the third most important predictor for academic performance, after intelligence and conscientiousness.	Mixed EI
Mahmud, 2020 [113]	RCT	60 students	• Empathy • Emotional Management	• The intervention had a significant positive impact on empathy. • Focus group findings highlighted ways the intervention helped pupils to address negative emotions, cope and manage difficult problems. • The paper highlights a context-specific approach to support programmes, based on the inclusion of an exploratory phase when designing such interventions.	Mixed EI
Manwaring et al., 2017 [114]	Review, Longitudinal	68 students	• Academic Achievement • Retention • Graduation • Behavioral Engagement • Emotional Engagement • Cognitive Engagement • Student Control Appraisals • Value Appraisals • Achievement Goals • Classroom Environment	• Emotional and cognitive engagement are highly correlated, but emotional engagement does not necessarily lead to higher levels of cognitive engagement. • Course design and student perception variables have a greater influence on engagement than individual student characteristics. • Student multitasking has a strong negative influence on engagement, while students' perceptions of the importance of the activity has a strong positive influence on both cognitive and emotional engagement.	Mixed EI
Martin, & Collie, 2019 [115]	Longitudinal	2,079 students/teachers	• Academic Participation • Enjoyment • Aspirations	• There is a significant linear effect, with an increase in the number of positive relationships (relative to negative relationships) with teachers predicting greater school engagement. • When the relational balance became predominantly negative, students' engagement was lower, but did not decline with an increasing number of negative teacher–student relationships. • When the relational balance became predominantly positive, students' engagement was higher and became increasingly more so as the number of positive teacher–student relationships outnumbered the negative.	Trait EI
Mendo-Lázaro et al., 2018 [116]	RCT	346 students	• Social Skills Necessary for Teamwork • Behavior Patterns in Social Skills Concerning Self Assertion • Behavior Patterns in Social Skills Concerning Reception and Imparting Of Information In Teamwork Situations	• Cooperative learning in university classrooms is effective in developing the social skills necessary for teamwork. • The number of students in a group, the basic social skills, and the academic level of the students are relevant factors related with efficacy. • Continuity over time in the use of the cooperative methodology is what marks the greatest differences in the development of the social skills necessary for teamwork.	Trait EI
Muhtadi et al., 2022 [117]	Meta-Analysis	2474 students	• Emotional Intelligence • Mathematics Achievement	• A meta-analysis of 36 primary studies with a sample of 2474 found that EI has a large effect on mathematics achievement in Indonesia ($M = 0.65$). • Analysis of moderator variables found that there was a significant difference in the education level group ($Qb = 62.94$; $p<0.05$). • There was no difference in the publication type group ($Qb = 0.64$; $p>0.05$) and year of publication group ($Qb = 4.16$; $p>0.05$).	Ability EI

Nasti et al., 2023 [55]	RCT	199 children	• Personality • Bullying • Emotional Intelligence • Empathy	• Emotional intelligence mediates the relationship between the Big Five personality traits and bullying, reducing the risk of engaging in bullying acts	Trait EI
Nasvytienė & Lazdauskas, 2021 [118]	Meta-Analysis	79,913 students	• Academic Achievement • Emotional Regulation	• Positive association between effortful control (EC) and academic performance. • Inverse relationship between negative affectivity (NA) and academic performance. • No apparent trend of surgency (SU) in the relationship between temperament and academic achievement.	Trait EI
Olderbak et al., 2018 [119]	Meta-Analysis	15,333 students	• 4 Branch Model of Ability EI • Fluid Intelligence (Gf) • Crystallized Intelligence (Gc) • Understanding Emotions • Facilitating Thought Using Emotion • Managing Emotions • Perceiving Emotion	• The strength of relations between the four-branch model of ability EI and fluid (Gf) and crystallized intelligence (Gc) were equivalent. • Understanding emotions had the strongest relation with Gf/Gc combined ($\rho = .43$). • Relations between perceiving emotion and Gf/Gc were moderated by stimulus type.	Ability EI
Pekrun et al., 2017 [120]	Longitudinal	3,425 students	• Positive Emotions (Enjoyment, Pride) • Negative Emotions (Anger, Anxiety, Shame, Boredom, Hopelessness) • Achievement (Math End of The Year Grades and Test Scores)	• Positive emotions (enjoyment, pride) positively predicted subsequent achievement in math. • Achievement positively predicted positive emotions. • Negative emotions (anger, anxiety, shame, boredom, hopelessness) negatively predicted achievement.	Ability EI
Pozo-Rico et al., 2023 [51]	RCT	141 teachers	• Teacher Well Being • Resilience • Emotional Competence • Self-Efficacy	• The 14-week teacher training program had a positive impact on teacher well-being, resilience, emotional competence, and self-efficacy. • The program was linked to the introduction of innovative and effective teacher methodologies. • The training contributes to teacher empowerment and provides knowledge, strategies, and resources for greater innovation and quality in the classroom.	Mixed EI
Quílez-Robres et al., 2021 [121]	Meta-Analysis	15,777 children	• Academic Achievement • Emotional Factors • Social Factors • Motivational Factors	• A moderate positive effect size was found for motivational and social factors, and a small positive effect size was found for emotional factors on academic achievement in children aged 6–12 years. • Age and geographical area had a moderating effect on the relationship between motivational, emotional, and social factors and academic achievement. • These results highlight the importance of motivational and social factors regarding academic achievement, and the need to design school plans that address the correct development of these variables.	Mixed EI
Quiroz, 2020 [122]	RCT	382 students	• Emotional Intelligence	• A pre-experimental study was conducted with 382 university students from different areas of study. • The BarOn's ICE EI inventory was used to measure pre and post results. • Significant differences were found between the pre and post results after applying the PRODPE program, indicating that the program was successful in developing emotional skills.	Mixed EI
Salmela- Aro et al., 2021 [123]	Review, Longitudinal	104,304 students	• Antecedents Of Engagement • Outcomes Of Engagement (Not as Commonly Studied)	• 104 studies of 104,304 adolescents published during 2010-2020 were included in the review. • Most studies focused on antecedents of engagement rather than outcomes of engagement. • Most studies focused on behavioral engagement, followed by emotional and cognitive engagement.	Mixed EI
Sánchez-Álvarez et al., 2016 [124]	Meta-Analysis	8520 students/teachers	• Emotional Intelligence • Subjective Well Being (Swb) • Cognitive Component of Swb • Affective Component of Swb	• There is a positive significant relationship between EI and SWB ($\hat{r} = 0.32$). • The relationship between EI and SWB is higher in studies using self-report mixed EI instruments ($\hat{r} = 0.38$). • There is a larger association between EI and the cognitive component of SWB ($\hat{r} = 0.35$) than with the affective component ($\hat{r} = 0.29$).	Mixed EI

Sánchez-Álvarez et al., 2020 [125]	Meta-Analysis	19,861 students	• Emotional Intelligence • Academic Performance	• A significant effect of EI on AP was found (Z^{-} = 0.26). • Average association between EI and AP was higher in studies measured EI as ability (Z^{-} = 0.31) than in studies measured EI as self-report (Z^{-} = 0.24) or self-report mixed EI (Z^{-} = 0.26). • This meta-analysis provides information on the specific role of EI as a function of used measures.	Ability EI
Sofeia, 2023 [126]	RCT	265 teachers/students	• Self-Efficacy • Emotional Value Expectations • Deep Learning Behavior	• Perceived teacher-student and peer interactions significantly impact students' self-efficacy and emotional value expectations. • Self-efficacy and emotional value expectations mediate the relationship between perceived teacher-student and peer interactions and deep learning. • Micro ecosystems can influence individuals' intrinsic belief values, which can, in turn, affect their behaviour.	Trait EI
Tang & He, 2023 [81]	Meta-Analysis	1,205 students	• Anxiety • Academic Performance	• A negative correlation was found between university students' anxiety and academic performance during the COVID-19 pandemic (r = −0.211).\ • Subgroup analysis found no significant regulatory effects for the year of publication, country development level, student type, or anxiety type. • Negative emotions induced by the pandemic are the most significant factor linking anxiety to poor academic performance.	Ability EI
Tartakovsky & Vorobiova, 2022 [127]	RCT	601 students	• Post Traumatic Stress Disorder (Ptsd) Symptoms • Cultural Identities • Social Support	• Exposure to terror attacks from the Gaza Strip was associated with increased PTSD symptoms among immigrants from the Former Soviet Union to Israel. • Social support from both the immigrant group and the larger society buffered the effect of exposure to terror attacks on PTSD symptoms. • Identification with the group and adherence to the group's cultural practices predicted social support received from the group.	Mixed EI
Taylor et al., 2017 [128]	Meta-Analysis	97,406 students	• Social Emotional Skills • Attitudes • Indicators Of Well Being • Graduation • Safe Sexual Behaviors	• School-based SEL interventions have a positive effect on youth development, including social-emotional skills, attitudes, and indicators of well-being. • Benefits were similar regardless of students' race, socioeconomic background, or school location. • Postintervention social-emotional skill development was the strongest predictor of well-being at follow-up.	Mixed EI
Thornberg et al., 2020 [129]	Longitudinal	234 students & 120 teachers	• Affective Engagement • Behavioural Engagement	• Teacher-student relationship quality was found to predict student engagement one year later, even when controlling for sex, age, and prior student engagement. • The longitudinal association between teacher-student relationship quality and student engagement was unidirectional. • Two significant categories emerged from the qualitative findings: 'teacher being' and 'teacher doing'.	Ability EI
Ulmanen et al., 2016 [130]	Longitudinal	170 students	• Students' Emotional Engagement • Emotional Engagement in Teacher Student Relationships • Emotional Engagement in Peer Relations • Perceived Peer Group Relations Over Time	• Emotional engagement remained stable over time. • Teacher-student relationships associated with emotional engagement in peer relations. • The association between teacher-student and peer- group relations was stronger among the secondary school students than among the primary school students.	Mixed EI
Walker et al., 2022 [131]	Meta-Analysis	6914 students	• Attachment Styles • Emotional Intelligence (Ei)	• Lower anxious and avoidant attachment styles are significantly associated with both EI rating-scales and ability EI. • Secure attachment is significantly associated with EI rating-scales only. • EI type significantly moderated the EI/avoidant attachment association only.	Ability EI
Wang & Liu, 2023 [132]	Review, Meta-Analysis	6,571 students	• Actual Language Performance • Perceived Language Proficiency	• A moderate-to-large effect size was found between EI and L2 achievement (r = .43). • The effect was stronger for female, collectivistic culture, and final grades as language measures. • The effect was not influenced by educational level, major, specificity of L2 achievement, skills of language learning or publication year.	Mixed EI

Wang & Wang, 2022 [133]	Review, Meta-Analysis	5,665 teachers	• Emotional Intelligence • Self-Efficacy • Burnout	• Results of the meta-analysis showed moderate to large meta-correlations between EI, self-efficacy (SE), and burnout among foreign language teachers. • EI and SE were positively correlated with each other, but negatively correlated with burnout. • Moderation analysis provided exploratory insights into the effects.	Trait EI
Wang et al., 2016 [134]	Longitudinal	495 teachers	• Teachers' Achievement Goals • Perceived Classroom Goal Structures • Teaching Related Emotions	• Teachers' achievement goals predict their perceived classroom goal structures. • Classroom goal structures predict teachers' teaching-related emotions. • Teachers' achievement goals directly predict their teaching-related emotions, as well as indirectly through the mediating effects of classroom goal structures.	Mixed EI
Wang et al., 2021 [135]	Longitudinal	1,086 teachers	• Teachers' Emotional Labor • Psychological Well Being • Perceived Student Engagement	• The present study found that teachers' well-being and perceived student engagement directly predict their use of emotional labour strategies, rather than vice versa. • Structural equation modelling analyses showed that emotional labour does not predict well-being outcomes (e.g. job satisfaction, burnout). • The predictive relationship between teachers' emotional labour and student engagement has not been empirically investigated.	Mixed EI
Xu et al., 2019 [136]	Meta-Analysis	18,130 teachers	• Emotional Intelligence • Creativity	• A moderate correlation (r = 0.32) between EI and creativity was found. • The correlation was modulated by the type of creativity/EI measure and sample characteristics. • The link was stronger in males, employees, and East Asian samples compared to other groups.	Mixed EI
Xu et al., 2020 [137]	Meta-Analysis	29,922 teachers	• Emotional Intelligence • Subjective Well Being (Swb) • Swb Component (Cognitive or Affective)	• A moderately positive correlation (r = .32) was found between EI and SWB in Chinese culture. • The strength of the correlation was moderated by EI stream, SWB component, participant's age, and participant's employment status. • EI was more strongly associated with the cognitive components of SWB than with the affective component of SWB.	Mixed EI
Zee & Koomen, 2019 [138]	Longitudinal	472 students & 63 teachers	• Emotional Engagement • Behavioral Engagement	• Teachers' student-specific self-efficacy predicted positive changes in emotional engagement. • Closeness predicted positive changes in behavioral and emotional engagement. • The association of closeness with the engagement measures was strongest for students in 6th grade.	Mixed EI
Zhen et al., 2020 [139]	Longitudinal	532, 450, and 415 students	• Cognitive Engagement • Emotional Engagement • Behavioural Engagement	• Four distinct academic engagement trajectories were identified: persistent, climbing, descending, and struggling. • Academic self-efficacy levels showed a consistent trend with the engagement trajectory, while the implicit theory of intelligence showed the reverse trend. • Attention should be given to students from the descending and struggling groups.	Mixed EI
Zhoc et al., 2020 [140]	Longitudinal	560 students	• Student Engagement • Students' Gpa • Generic Learning Outcomes • Students' Satisfaction with The University Experience	• Emotional intelligence (EI) positively predicted all dimensions of student engagement. • EI and engagement jointly predicted key learning outcomes in higher education, including the students' GPA, generic outcomes, and satisfaction with the university experience. • The model explained 16%, 44%, and 38% of the students' GPA, generic learning outcomes, and satisfaction with their university experience, respectively.	Mixed EI

Graphically, it is clear that the highest number of studies comes from Trait EI, with clear dominance in Review & Meta-Analysis at 20 studies. Next in line are Longitudinal studies, at 15 in number. On the contrary, Ability EI has the least number of studies on all three types. In fact, there are only 5 studies which have been classified under the category of Review & Meta-Analysis, 4 as Longitudinal, and 3 as RCT. In Mixed EI models, the distribution is equal for Review & Meta-Analysis. It is important to note, that the research paper established the inclusion criterion that only studies

published from 2016 onwards would be considered in order to guarantee relevance and contemporaneity. Studies conducted before 2015 were excluded due to the substantial advancements and changes in the field of EI, which have been incorporated into the latest developments and methodologies. Recent findings have become more relevant due to changes in educational environments, pedagogical practices, and student needs. Enhanced research methodologies and tools implemented since 2015 guarantee the reliability and validity of data. Furthermore, the inclusion of advanced technology and recent educational changes are more accurately represented in studies conducted after 2015, offering a thorough and current comprehension of the influence of EI on academic performance and learning conduct.

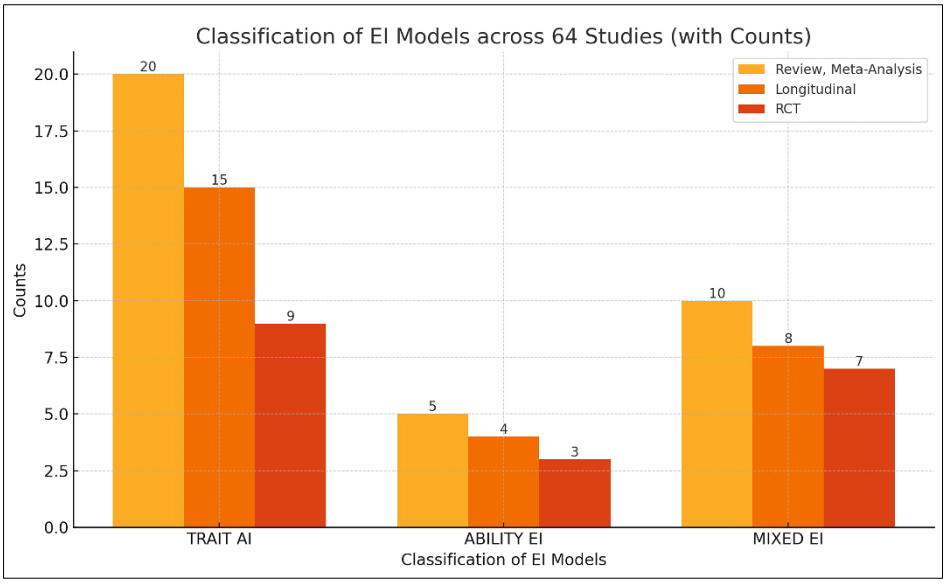

Figure 3. Classification of EI Models by Study Type

The study employed the following criteria to determine which articles would be included:

1) Articles had to be written in English.

2) Articles had to be produced between 2016 and 2023.

3) Articles had to be relevant to the subjects of psychology and education.

4) Articles had to be in the final stage of publishing.

5) Verification was required to confirm that the content was highly pertinent to the subject.

The study examined articles about the EI of students, teachers, and the wider educational environment. After thoroughly searching databases and applying appropriate filters, 462 articles were identified in the first step, *Identification*.

In the second step, known as *Screening*, a total of 210 articles were subjected to Screening based on their titles. Out of these, 112 articles were removed due to titles that were irrelevant to the topic, and 6 articles were excluded due to language restrictions. Additionally, 7 articles still needed to be retrieved. As a result, a total of 85 articles were identified, with 21 being non-reviews and therefore excluded. In the last stage (*Included*), after thorough deliberation, 64 papers were selected for additional examination (Figure 2). The AMSTAR-2 tool was employed to evaluate the quality of the included studies, with an emphasis on seven critical criteria. The risk of bias assesses the potential for bias to arise from the study's design or execution. Inconsistency evaluates the degree of variability among studies, with higher ratings suggesting greater variability. On the other hand, indirectness evaluates whether the evidence directly addresses the research question, with lower ratings indicating direct applicability. Imprecision is a metric that quantifies the degree of certainty surrounding the effect estimates, with higher ratings indicating a greater degree of uncertainty. Publication bias assesses the probability that published results deviate systematically from unpublished ones, with higher ratings suggesting a substantial risk.

4- Results

The studies in Table 2 summarize the research into an organized overview of many study designs, outcomes measured, and main findings that include RCTs, longitudinal studies, and meta-analyses investigating the effects of EI on a wide range of academic outcomes such as creativity, academic performance, emotional regulation, and resilience. Most of the research under Trait EI is focused on how individuals perceive and manage their emotions within an

educational context. This consistent finding, therefore, suggests that higher magnitudes of Trait EI predict better academic achievement, such as lower levels of burnout and increased emotional regulation. Trait EI facilitates students' managing stress and maintaining motivation toward their studies. Ability EI-based studies have focused on emotion regulation and cognitive rehabilitation strategies in improving academic performance. In addition, students who have emotionally regulatory capabilities show better skills in overcoming academic challenges and performing well in cognitively demanding tasks like mathematics and language skills. Trait and Ability EI in combination presented an interaction between emotional competence with cognitive skills for comprehensive improvements in academic success of students with regards to social interactions and engagement.

Various studies outlined in Table 2 support the predictive contribution of emotional regulation to academic achievement. Cognitive rehabilitation interferences enhance emotion regulation; hence, there is a direct improvement in academic achievement, especially for those students who suffer from emotional difficulties like post-traumatic stress disorder. Longitudinal studies epitomize how emotional and behavioral involvement develops over time to eventually affect academic performance. In this regard, emotional involvement emerged as an important leading predictor of both cognitive engagement and subsequent academic achievement. Such educational interventions, like teacher training programs, indeed show an enhancement in teachers' well-being and students' performances. These findings further underline the relevance of EI for both students and educators-together creating a superior learning environment that nurtures academic achievements. Meta-analyses put a wider perspective on how EI interacts with other strong predictors of academic success, such as intelligence and conscientiousness. Among others, the strongest positive impact of Ability EI on academic performance points to the importance of education programs aimed at the development of not only cognitive but also emotional skills in students.

Finally, based on the data in Table 2, strong positive effects of EI on academic success are justified, as both Trait and Ability EI come out as significant predictors of emotional regulation, resilience, and cognitive engagement that promote academic performances. Taken together, the evidence from the different designs might suggest that interventions focused on EI carried out in educational settings may have long-term benefits both for students and educators because of an improvement in the general academic achievement and well-being.

4-1- Trait EI

Emotional Intelligence (EI) affects a child's creativity training intervention, according to recent study by Gustavsen [90]. Prioritizing "training intervention" implies a pragmatic, capability-oriented approach to affective competency. Using an EI model like emotion regulation theory, some other researchers [66] examine how E-learning and EI affect student performance, burnout, and study stress. Given its focus on emotion regulation, motivation, and the significant impact of EI on student psychological pressure, trait EI may be better for this study [RQ2]. Another researcher [93] also examines positive motivators that affect adolescents' school self-concept, engagement (emotional and behavioral), and peer perception. This research favors the trait EI model [RQ6] because it emphasizes students' subjective perceptions, self-concept, and engagement. In addition, another recent study [86] examines the relationship between EI and Big Two and Big One personality traits. Impulsivity and neuroticism predicted EI, but the Big Five had little effect. This study combines personality psychology and EI but does not directly align with any trait, ability, or mixed EI model. However, focusing on personality factors and their prognostic correlation with EI suggests trait EI alignment. The study's focus on personality's predictive role in EI matches trait EI's focus on how people can motivate themselves to perceive and control their emotions [RQ2].

Frenzel et al. [96] examined math achievement (school grades), students' values, emotions (enjoyment, anger, and boredom), and math competence. The study found that control-value appraisals affect emotions and achievement. Aversion and boredom decrease math achievement at the expense of enjoyment. Achievement positively predicts competence, value, and enjoyment and negatively predicts anger and boredom. Another study by Garon-Carrier et al. [97] examines a teacher-student enjoyment reciprocal effects model. The model assumes classroom behavior observations create positive reciprocal links [RQ5]. Teacher-student enjoyment and classroom engagement are the focus of this study on emotional education. Due to its focus on classroom emotional engagement and interaction, this research falls outside trait EI, ability EI, and mixed EI [RQ5]. A closer relationship between self-reported enjoyment and behavior and trait EI is shown.

During the COVID-19 pandemic, Geraci et al. [57] investigated the burnout, work engagement, academic performance, self-efficacy, and EI of educators who experienced low self-esteem and burnout because of distance learning. Teachers who possessed a higher level of EI were more adept at managing the COVID-19 pandemic. The trait EI model [RQ6] was confirmed by the study, as EI mitigates stress and burnout, particularly in challenging circumstances such as distance learning during a pandemic. The study's emphasis on self-reported burnout, self-esteem, EI, and coping mechanisms implies that trait EI self-evaluations are the focus. Luque-González et al. [48] investigated the relationship between EI and school climate, with an emphasis on attention, clarity, and emotional restoration. Additionally, a study of Spanish students' differences between genders in relation to EI and school climate were

investigated. The findings indicated a correlation between EI and school climate, but not with gender or country. The research in question bolsters trait EI by emphasizing emotional restoration, clarity, and attention. Self-reported emotional capacities, or trait EI, are necessary for the restoration of emotional equilibrium and the focus on clarity and emotion.

Additionally, Gkintoni et al. [56] investigated the evolution of student cognitive, emotional, and behavioral engagement. Behavioral engagement consistently predicted cognitive and emotional engagement over time, whereas cognitive engagement did not. Cognitive and behavioral engagement were significantly predicted by emotional engagement from the second to the third time interval. To substantiate the trait EI model, this investigation investigates relations of the engagement type over time. The emphasis on emotional engagement and its impact on cognitive and behavioral engagement indicates a curiosity regarding the way students comprehend and regulate their emotions during their academic careers. Moreover, Joulaei et al. [101] investigated the EI and resilience of boys. At the intervention level, there were statistically significant differences in self-awareness, optimism, self-concentration, problem-solving, happiness, impulse control, and EI among boys. This study is more consistent with the trait EI model due to its emphasis on EI and resilience.

Furthermore, Jung et al. [54] investigated the social skills, EI, and shyness of both children and parents. This investigation investigates the way EI influences internalizing behaviors and shyness. This implies that the function of EI as a buffer or mediator between psychological outcomes and shyness warrants further investigation. This research corroborates the trait EI model by demonstrating that EI influences behavior. EI trait is the subject of a recent study's [103] discussion. This investigation of college students investigates the Big Five personality traits and EI. The predictions of Global Trait EI in this study, which are based on the Big Five factors (Neuroticism, Conscientiousness, Extraversion, Agreeableness, and Openness), are consistent with the trait model of EI, which emphasizes self-reported emotional abilities. In addition, Lichtenfeld et al. [108] investigate the impact of students' anxiety, boredom, and enthusiasm on their math achievement scores and grades during assessments and lessons. Achievement was positively predicted by enjoyment and achievement, while boredom and anxiety were negatively predicted. The trait EI model of EI is substantiated by a study of self-perceived emotions and academic performance [141, 142].

In a meta-analysis that differentiated between trait and ability EI, Lozano-Blasco et al. [110] investigated the degree of overlap between the General Factor of Personality (GFP) and EI. GFP and ability EI are moderately correlated (.28). Conversely, they are remarkably correlative (.85). The GFP is compared to trait EI by the authors, whether they are identical. The trait model of EI is employed by same researchers [110] due to the high correlation and overlap between trait EI and the GFP. Their analysis differentiates between trait EI and ability EI, and the research's emphasis on trait EI's self-reported assessments and emotional capacities is indicated by a weaker correlation with ability EI. Student satisfaction is influenced by the EI of teachers, as per two researchers [143] [RQ5]. This research underscores the significance of emotionally intelligent educators in enhancing student satisfaction and academic performance. It prioritizes class dynamics over teachers' EI as the primary determinant of student satisfaction and EI. This investigation validates the trait EI model of EI by investigating student satisfaction.

Additionally, Mahmud [113] investigated the correlation between personality traits, EI, and the effectiveness of educators' teaching. The trait EI model is recommended for use in this study due to its emphasis on the moderating role of personality traits and EI in determining teaching outcomes. Mendo-Lázaro et al. [116] investigate the impact of positive and negative teacher-student relationships on the engagement of high school students. The investigation revealed that school engagement is enhanced by positive teacher-student relationships, while it is diminished by negative ones. [RQ5]. This study investigates the impact of relationship perceptions and assessments on the emotions of students, thereby corroborating the trait EI model of EI. Maamari & Salloum [112] assert that classroom interactions influence students' EI and satisfaction, but not teachers' EI. The research lends credence to the trait EI model by emphasizing classroom interactions and student satisfaction. Self-reported assessments and perceptions of emotional abilities are employed in this model to advance the primary objective of the research, which is to enhance students' EI through classroom interactions [RQ5]. University students who exhibit higher EI exhibit superior academic and professional outcomes, which implies that trait EI is subjective and self-perceived.

In 2023, in a recent study, Nasti et al. [55] investigate the following: personality, bullying, EI, and the empathy of children. This analysis bolsters the trait model of EI by demonstrating the mediation between bullying and the Big Five personality traits. This model underscores the way personality assessments demonstrate that EI mitigates the risk of bullying. This method is consistent with the trait EI model, which characterizes lower personality levels as emotional self-perceptions. Olderbak et al. [119] concentrate on the academic performance, temperament, and EI of children. Negative affectivity, executive function, self-regulation, and effortful control are all assessed to evaluate academic achievement. Furthermore, EI ought to prioritize emotional regulation. Much like the trait model of EI, this investigation investigates the impact of stable personality traits, such as effortful control and negative affectivity, on academic performance. Foreign language instructors' EI, SE, and burnout were found to be moderately to strongly correlated in a recent meta-analysis [134]. A positive correlation was observed between EI and SE, while a negative correlation was

observed between burnout and SE. This investigation investigates the correlation between these variables, rather than a particular EI model, such as trait, ability, or mixed. The study implicitly endorses the trait model of EI by evaluating EI and its impact on self-efficacy and burnout using self-report questionnaires regarding emotional capabilities.

4-2-Ability EI

Emotion regulation moderates the effects of cognitive rehabilitation on academic performance in PTSD students [92]. This study is more consistent with the ability EI model due to the moderating influence of emotion regulation and the emphasis on cognitive rehabilitation and academic achievement. EI is the capacity to comprehend and apply emotional information in cognitive tasks and reasoning. The cognitive abilities and executive function components of the ability EI model are used to emphasize quantifiable and objective emotional processing and regulation outcomes. Forsblom et al. [95] conducted a literature review and meta-analysis to investigate the relationship between academic achievement and executive functions in primary education. This research lends credence to the ability EI model, which quantifies the impact of cognitive abilities (including working memory) on academic performance. The EI model's defining feature of measurability in the processing and management of emotional and cognitive information is suggested by the emphasis on executive functions, such as working memory, cognitive flexibility, and inhibitory control, in academic performance.

In a separate study by Gustavsen [99], the extent to which the ICCC program enhanced bullying perceptions and decreased conflict among secondary education students was investigated. The research demonstrated that the program yielded the anticipated outcomes. There were no gender disparities between the control and experimental groups. This implies that the program's implementation period could be extended to facilitate the development of social skills and the enhancement of school cohesion among children. The social and academic effects of an intervention program are the primary focus of this research, rather than EI. The indirect correlation between EI and a student's behavioral outcomes, bullying perceptions, and conflict levels is suggested by the emphasis on peer coexistence. Emotional and social skills are particularly interconnected in educational environments. The research is unable to establish a clear correlation with trait EI, ability EI, or mixed EI frameworks because of its failure to directly evaluate or quantify EI for objective abilities, self-perception, or a composite of the two. The social and behavioral effects of an educational program are prioritized over the emotional capacities of participants who self-report them.

Hong et al. [100] investigated the two-year impact of teacher-rated social skills on the academic performance of boys and girls in Norwegian, math, and English. The research revealed that teacher-rated social skills had a substantial impact on the academic performance of Norwegian and mathematics students, but not English. Academic achievement was universally influenced by social skills, irrespective of gender. This research is consistent with the ability EI model, as it concentrates on the academic performance and social skills of educators. The research's emphasis on the quantifiable effects of social skills on academic achievement in educators suggests a methodology that quantifies social and emotional functioning proficiencies or aptitudes that directly influence academic achievement [RQ4].

Lang [104] conducted research that investigates the correlation between academic achievement, emotion regulation, and negative emotions. The researchers concentrate on the role of academic engagement in mediating this relationship. The research determined that academic engagement significantly influenced achievement by mediating negative emotions and emotion regulation. The EI model is substantiated by this investigation. The significance of comprehending, regulating, and utilizing emotions to enhance academic performance is underscored by the role of academic engagement as a mediator. A model similar to the EI ability is referenced by another study [106]. The study investigates academic achievement and student engagement, which encompasses cognitive, emotional, and behavioral engagement. The results indicate a moderately strong and positive correlation between academic achievement and student engagement, indicating that emotional engagement is a critical component of academic success. The ability EI model underscores the importance of cognitive, emotional, and behavioral academic engagement. This orientation examines the efficacy of emotional information in fostering academic engagement and thoughtfulness.

Meta-analysis and systematic review conducted by Maamari & Majdalani [111] investigate the impact of EI on student test performance. Research suggests that EI is a significant predictor of academic achievement, as evidenced by a moderately positive correlation ($r = 0.367$; $p < 0.001$). Academic performance is predicted by intelligence, irrespective of gender or age. Nevertheless, the prediction of school performance is influenced by intelligence type and country of origin. This study endorses the ability model of EI because of its meta-analysis and emphasis on the predictive power of EI on academic performance. The ability EI model underscores the importance of quantifiable, performance-based EI, including emotion recognition and control, in achieving academic success. The study's classification in the ability EI model [RQ3] is supported by its emphasis on the quantifiable impact of EI on performance, rather than self-reported perceptions (a trait EI characteristic). Additionally, other researchers [118] investigate the relationship between academic performance and EI. The passage asserts that academic performance is enhanced by EI, as evidenced by the results of standardized tests. The academic performance is more accurately predicted by EI ability than by self-rated or mixed EI models, as evidenced by the combined effect size of 0.65 ($M = 0.65$) and standard error of 0.07 ($SEM = 0.07$) [RQ3].

The Four-Branch Model of Ability is compared to fluid and crystallized intelligence by a group of researchers [120]. This approach precisely situates the discourse within the context of EI. This construct emphasizes the comprehension and application of emotional data to effectively navigate interpersonal situations. The four-branch model of ability EI and related intelligence traits were the subject of a meta-analysis. The findings indicated that emotional comprehension was most closely associated with fluid and crystallized intelligence. This statement is a reference to the ability model of EI, which prioritizes emotional abilities over self-perceptions or a combination of traits and abilities.

According to Quílez-Robres et al. [121], academic performance is more accurately predicted by EI than by self-rated or mixed EI. Research indicates that academic performance is enhanced by EI. The research underscores that EI is more strongly correlated with the performance of humanities than with science. Self-rated EI is more predictive of grades than standardized test scores. As potential explanations for the correlation between academic achievement and EI, the document proposes that academic content overlaps with EI, school social relationships, and academic emotion regulation. Sofeia [126] conducted a meta-analysis that revealed a substantial correlation between Academic Performance (AP) and EI. In comparison to self-report measures ($Z = 0.24$) or mixed EI measures ($Z = 0.26$), studies that evaluated EI as an ability ($Z = 0.31$) exhibited a stronger correlation with AP. The research concentrated on the ability model of EI, underscoring the significance of assessing EI as an ability owing to its more reliable capacity to predict academic success. This distinction underscores the intricate differences in EI measurement methods and their impact on the comprehension of the correlation between EI and academic success.

A recent meta-analysis by Wang & Liu [132] investigated attachment styles and EI. The research determined that EI rating scales and ability EI measures are significantly influenced by lower anxious and avoidant attachment styles. Conversely, secure attachment is exclusively associated with EI rating scales. The relationship between EI and avoidant attachment style was also moderated by the assessment of EI as an ability or using rating scales. This suggests that the research did not explicitly employ a mixed model of EI, but rather assessed trait EI (as measured by rating scales) and ability EI (as measured by EI as an ability). It is crucial to recognize that the term "Emotional Intelligence" (EI) denotes the theoretical framework that encompasses self-perceptions and emotional abilities, while EI rating scales and ability measures are instruments employed to quantify these components. Nevertheless, the research incorporates EI's trait and ability models using rating scales and ability measures.

4-3- Mixed EI

Camacho-Morles et al. [76] reviewed and meta-analyzed academic performance and emotions like boredom, anger, and pleasure using a large sample size across multiple educational levels. This research uses a mixed-intelligences (EI) methodology to examine how emotions affect academic achievement and the quantifiable effects of these emotions on learning outcomes (which is consistent with trait EI viewpoints as it considers self-regulated and cognitive processes) and academic performance. Potential overlap with ability EI concepts. Due to its comprehensiveness, the mixed EI framework examines achievement emotions, self-regulation, cognition, and social interactions, which are essential for academic success [RQ1] [RQ4].

Costa & Faria [61] examined the relationship between Implicit Theories of EI (ITEI) and student outcomes like academic achievement, negative emotions, and EI. This study examined the relationship between ITEI and EI in the following year, using ability and trait EI to mediate negative emotions and achievement. Thus, it uses EI trait and ability models. Due to its ability and trait EI component integration, the study fits the mixed EI model. The study emphasizes measurable aspects of EI, while trait EI is assessed through self-perceptions and evaluations of emotional abilities. EI's complex and diverse characteristics are evaluated using observable abilities (ability EI) and internal perceptions (trait EI). This research examines how emotions affect academic performance, particularly math. The focus on how students' emotions affect their math performance aligns with the trait and ability models of EI. The emphasis on perceived competence and value and the specific emotions associated with mathematics suggest trait EI in this study, which focuses on students' self-perceptions and emotional responses to a particular academic domain. The trait EI model measures self-reported emotional awareness, comprehension, and regulation. This is important because the research focuses on mathematical emotions, academic achievement, and perceived competence. Lim [74] in a study discussed a mixed EI model. The mixed-methods study examined how conventional play affects children's self-esteem, social aptitude, and EI. To study the multifaceted effects of play on EI, the research may use qualitative and quantitative methods (possibly assessing ability or trait aspects of EI) to incorporate traits and abilities. The mixed EI model's focus on quantifiable outcomes (e.g., EI and social skill improvements) and subjective experiences (e.g., qualitative insights) implies a comprehensive understanding of EI.

Furthermore, Wang et al. [144] examined the relationship between EI and academic achievement. According to the study, a correlation of $\rho = 0.20$ exists between EI and academic performance. Ability EI correlates more strongly with academic performance than self-rated or mixed EI ($\rho = 0.24$, 0.12, and 0.19, respectively). This shows that EI predicts academic success second only to intelligence and conscientiousness. MacCann et al. [73] studied the mixed model of EI considering these findings. Self-rated, mixed, and ability EI are assessed for their ability to predict academic success.

The study uses ability-based and self-reported measures to assess the impact of EI on academic performance, making it a mixed EI study. Wang et al. [114] examines how a social and emotional learning program develops empathy and emotional regulation in secondary school transitioning students. This study uses a mixed EI framework to improve empathy and emotional regulation. The intervention's positive effects on empathy and ability to help students cope with negative emotions, coping mechanisms, and complex problems suggest a pragmatic EI competency development strategy. Emotion management and empathy development are emphasized in this mixed EI framework.

Additionally, Martin & Collie [115] examined cognitive and emotional involvement, course design, student perception variables, multitasking, and activity importance. This study's examination of educational engagement's cognitive and affective aspects matches EI's trait and ability models. Cognitive and emotional engagement correlate, suggesting an interest in how students' self-perceived emotions (a characteristic of ability EI) affect learning. The ability model of EI partly replaces the study's focus on student engagement, academic performance, and external factors like course design and perceptions. The ability model examines emotional information's cognition and use. However, student perception variables significantly affect engagement, emphasizing the importance of trait EI's self-assessed emotional states. Thus, while the paper references both models, its focus on engagement and perception suggests a nuanced view of EI in education [RQ1].

According to the document, a recent study by Salmela-Aro et al. [123] on EI is more like BarOn's EQ or EI model. This method is often used in mixed EI models that combine traits and abilities. The study used BarOn's ICE EI inventory to evaluate a university student's emotional competency program before and after the intervention. The significant pre- and post-test differences support the program's emotional skill enhancement. This suggests the program emphasizes pragmatic, application-oriented EI over trait or ability-based frameworks. This strategy supports the mixed model of EI, which includes more emotional and social competencies. Sánchez-Álvarez et al. [125] found a significant positive correlation between Subjective Well-Being (SWB) and EI had a stronger SWB-EI correlation. This means the study used mixed EI models, which include ability and trait (self-report) components [RQ1].

A meta-analysis by Thornberg et al. [129] examined how school-based Social and Emotional Learning (SEL) interventions affect youth development. Well-being is examined through social-emotional skills, attitudes, and indicators. The current study does not distinguish between trait, ability, or mixed EI models. Conversely, it shows that SEL interventions help students develop social-emotional skills essential to mixed EI frameworks. Mixed EI models include many skills and qualities, such as the ability to recognize, understand, and manage one's own and others' emotions. Taylor et al. [128] focused on social-emotional skills through SEL interventions, which is consistent with the mixed model of EI, which combines trait and ability models and emphasizes the practical application of emotional knowledge and skills across diverse social environments [RQ1].

A recent metanalysis by Wang et al. [133] found a moderate-to-large effect size ($r = 0.43$) between second language (L2) achievement and EI. The present study does not follow any specific EI model, whether trait, ability, or mixed. Instead, it emphasizes EI's overall impact on language acquisition and academic performance. Females, people from collectivistic cultures, and those evaluated based on final grades had a more significant impact, suggesting that multiple EI models can be used to understand EI. However, the methodology and results must distinguish between trait, ability, and mixed models of EI, making it difficult to classify this investigation into an EI framework [RQ1]. In 2021, they examined educators' emotional labor, psychological health, and student engagement. Well-being and perceived student engagement predict teachers' emotional labor strategies, not vice versa. Trait, ability, and mixed EI are not explicitly classified in the study. The text emphasizes the link between emotional labor, engagement, well-being, and education. This may highlight EI's professional applications and effects. The pragmatic application of EI competencies in balancing professional and personal obligations may inadvertently address mixed EI models. Some other researchers [94] examined how teachers' self-efficacy about their students affects their emotional and behavioral engagement. The research found that teachers' self-efficacy and teacher-student closeness predicted positive behavioral and emotional engagement [RQ4] [RQ5]. The strongest correlation between closeness and engagement was in sixth graders. This study emphasizes emotional engagement and the impact of teacher-student relationships on student engagement, consistent with mixed models of EI. These models consider both ability EI (ability to identify, comprehend, and regulate emotions) and trait EI (self-perception of emotional abilities) [RQ1]. The mixed model emphasizes self-efficacy and relational closeness, suggesting a holistic approach to understanding EI in education [RQ1].

Another study by Chis et al. [145] examined how EI and self-leadership affect students' stress management and adaptation. According to the study, EI may affect students' coping strategies and behavior in school. Overall, research suggests a link between EI and student behavior in school. EI can improve stress management, decision-making, empathy, and positive behavior [RQ6]. However, student behavior is affected by individual differences, the classroom environment, and interpersonal interactions. More research is needed to understand how EI affects student behavior in school [RQ7]. In the graph diagram below the Classification of EI Models is included and their impact on Academic Outcomes (Figure 4). More specifically, EI significantly impacts academic success through three main models: Trait EI, Ability EI, and Mixed EI. Trait EI focuses on self-perceptions and personality traits, enhancing engagement, motivation,

and behavior. Ability EI involves actual emotional processing abilities, improving cognitive functions and stress management. Mixed EI combines elements of both, fostering comprehensive emotional skills and social interactions. Integrating EI into education boosts academic performance, engagement, motivation, and effective stress management. Prioritizing EI in curricula and educational interventions can create supportive learning environments, enhancing overall student outcomes.

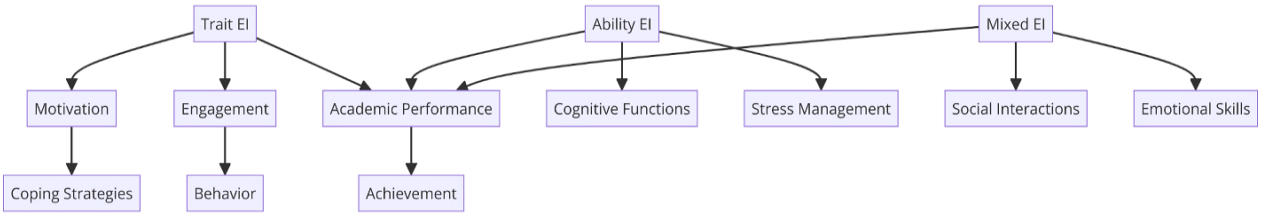

Figure 4. Classification of EI Models and their impact on Academic Performance

4-4- Trait EI and Academic Performance

The present study extends earlier research and supports the by now well-established relationship between Trait EI and academic achievement. Former meta-analyses, such as that conducted by Sánchez-Álvarez et al. [125], showed a positive and statistically significant correlation between Trait EI and different educational outcomes, such as academic engagement and behavioral motivation. Our findings also suggest that higher magnitudes of Trait EI among these students lead to better emotional regulation, less stress, and improved motivation-all useful ingredients of better performance. Moreover, research such as Alam et al. [90] demonstrated how Trait EI could serve to dampen negative study-related stress and related burnout, a finding our study confirms, since students with higher levels of Trait EI cope more satisfactorily with academic pressures and thus sustain performance longer. Following the study by Bakadorova & Raufelder [92], which emphasized that students with a positive emotional self-concept and higher Trait EI show higher levels of school engagement, our findings also indicate an important relationship of Trait EI with behavioral engagement. This also aligns with the notion that students who can recognize and manage their emotions will become more actively involved in their studies, behave better in class, and get along better with peers and teachers.

4-5- Ability EI as a Predictor of Academic Success

The present study's findings also extend existing research into Ability EI, conceptualized as the way in which students use emotional information to negotiate academic challenges. Studies such as previous studies [91-94] show that emotional regulation represents a critical factor for the improvement of cognitive rehabilitation in students with PTSD, by enhancing academic performance. As a result, our study also found proof that students with higher Ability EI regulated their emotions better and coped more constructively with stress, while their academic achievement tended to increase in demanding situations. Such an ability for emotional control would appear particularly important for students who experience heavy academic stress-a finding which speaks to those of the studies [95-99], who reported emotional commitment as one of the strong predictors of long-term academic achievement. Our research further confirms that the meta-analysis of the study Shamsi et al. [4] has placed Ability EI as a stronger predictor of academic performance than Trait EI or Mixed EI. We noticed that when students scored higher on Ability EI-for instance, being capable of regulating their emotions, maintaining empathy, or dealing with stress-their academic performance would turn out to be higher, especially in mentally demanding subjects like mathematics and sciences. This may indicate that our findings support the hypothesis that targeted interventions aimed at enhancing the level of Ability EI will pay off in terms of much-improved cognitive engagement and resilience among students.

4-6- Mixed EI Approach and Comprehensive Educational Outcomes

In our findings, the literature on the support for a mixed approach to Emotional Intelligence is further in tune. Studies like MacCann et al. [76] have shown how in-classroom integration of Trait and Ability EI results in broader outcomes, including improved emotional self-regulation, better problem-solving capability, and greater enjoyment of learning. This study extends that to find that Mixed EI models, which include both Trait and Ability EI combined, enhance learning outcomes, improving performance for each student not only individually but also contribute to enhancing social and emotional conditions within the classroom. Improvement in students-teacher relationships is supported by the study [10], who reported that a high level of EI among students could be reflected in good classroom management and strong teacher-student rapport.

4-7- EI-Focused Interventions in Educational Settings

In return, our study confirms that teacher-centered EI interventions-as conducted, for instance, by Pozo-Rico et al. [51] improve not only the well-being of teachers but also the academic performance of students. Correspondingly, our

study underlines that either student- or teacher-targeting EI-focused interventions create a friendlier educational atmosphere for learning. Students who possess high scores on EI demonstrate improved classroom behavior, better interaction with their co-students and teachers, and even tackle academic difficulties more resiliently. Indeed, the study [99] confirmed that teacher-rated social skills indeed tend to have a positive influence on academic achievement when the students are emotionally supported. In fact, EI is considered by MacCann et al. [73] as the third most important predictor of academic success after intelligence and conscientiousness in their study. This is supported by our research, where the inculcation of EI in a curriculum significantly enhanced the students' cognitive engagement, persistence, and problem-solving skills in emotive or cognitively demanding academic tasks. These findings have implications for educational institutions in considering the inclusion of both Trait and Ability EI in academic interventions toward holistic improvements in student outcomes.

4-8- Novel Contributions and Extensions

Although our findings are supported by a good deal of existing literature, they also offer some new contributions. For example, the emphasis this study places on how EI influences long-term academic engagement and emotional resilience in high-stress environments adds further substance to the previous literature. A longitudinal analysis indicated that students with higher levels of EI not only reached higher academic performance but showed more stability emotionally and in behavioral involvement across time. This supports the findings of the studies [95,125], but also extends them to show that these benefits of EI exist across many academic stages and learning contexts. What is more, the current study has laid stress on the role of EI in promoting both academic and social classroom outcomes. Results have shown that EI begets not only improved academic performance at an individual level but also a class atmosphere of increased empathy and support where both the students and teachers benefit. Such all-rounded improvement supports the argument by the study [10], that the overall academic setting can be improved by EI interventions to become more predisposed toward learning and positive social interactions. The present study, therefore, confirms and extends the findings of the previous studies. Our study adds to this wealth of evidence by demonstrating the powerful influence that both Trait and Ability EI can have on academic performance, social interactions, and emotional well-being, bringing in an educational perspective. Our findings affirm that the effects of EI on student engagement, motivation, and academic resilience are significant, whether it is via the Trait or the Ability pathway. The comparison of the results to the existing literature on the issue suggests that such El-focused curricula and interventions may ensure holistic improvements in the field where students and teachers equally benefit toward a more supportive and effective learning environment.

4-9- Synopsis of research results from three pathways of EI

The research paper summarized in the extract provides an in-depth exploration of how EI is intertwined with academic achievement within educational contexts. By synthesizing research from 2016 to 2023, the paper illustrates a consistent positive correlation between EI and various elements of academic performance such as emotional control, empathy, problem-solving skills, motivation, interpersonal relationships, and classroom management. Emotional intelligence is characterized in two primary forms: Ability EI, which focuses on one's actual ability to process emotional information and use it to navigate the social environment, and Trait EI, which encompasses self-perceptions and dispositions related to one's emotional abilities. The differentiation between these two forms is crucial as they affect learning and social processes in distinct ways. Ability EI is closely related to one's cognitive abilities in processing emotional information, while Trait EI aligns with personality and reflects an individual's self-beliefs regarding their emotional capacities. The paper emphasizes that both forms of EI contribute positively to the creation of a productive learning environment, as students with higher EI tend to have improved communication skills, better problem-solving abilities, and enhanced stress management techniques. These attributes not only foster personal academic success but also contribute to a more conducive and empathetic classroom atmosphere that can benefit all students [RQ1]. Moreover, the paper raises points regarding the impact of EI on specific student outcomes, including student engagement, academic motivation, and behavior in the classroom. The enhancement of EI is associated with more engaged and motivated learners who are likely to exhibit positive behaviors and achieve higher levels of academic success [RQ1].

The findings and methodologies from the various studies imply that educational interventions aimed at increasing EI could have profound and extensive benefits. Such interventions may involve integrating EI-focused curricula, providing teacher training in emotional competencies, and implementing social-emotional learning programs to equip students with the necessary emotional skills. The paper concludes that educators and policymakers should consider the significant implications of EI for pedagogical practices and curriculum development, with a call for more in-depth research into practical applications and strategies to heighten EI in educational settings. By including EI in the broader academic framework, there is potential to enhance not only the academic performance of students but also to contribute to their holistic well-being and preparedness for diverse life challenges. In essence, the paper provides valuable insights into the multifaceted role of EI in education, advocates for its integration into educational practices, and poses research questions for future exploration. This influential research enhances our understanding of how EI can be harnessed to enrich both the educational experience and student outcomes. Figure 5 illustrates a comprehensive graph map that delineates the

relationship between the three primary models of Emotional Intelligence (EI)—Trait EI, Ability EI, and Mixed EI—and their associated outcomes in educational settings. Each EI model is connected to specific outcomes, demonstrating how these different conceptualizations of EI influence various aspects of student performance, behavior, and well-being. Trait EI, characterized by stable personality traits, is linked to outcomes such as self-efficacy, burnout, and psychological well-being. Ability EI, which focuses on cognitive abilities to process emotional information, is associated with outcomes like emotion regulation, empathy, and academic achievement. Mixed EI, which combines elements of both Trait and Ability EI, shows connections to a broad range of outcomes, including academic performance, engagement, and resilience.

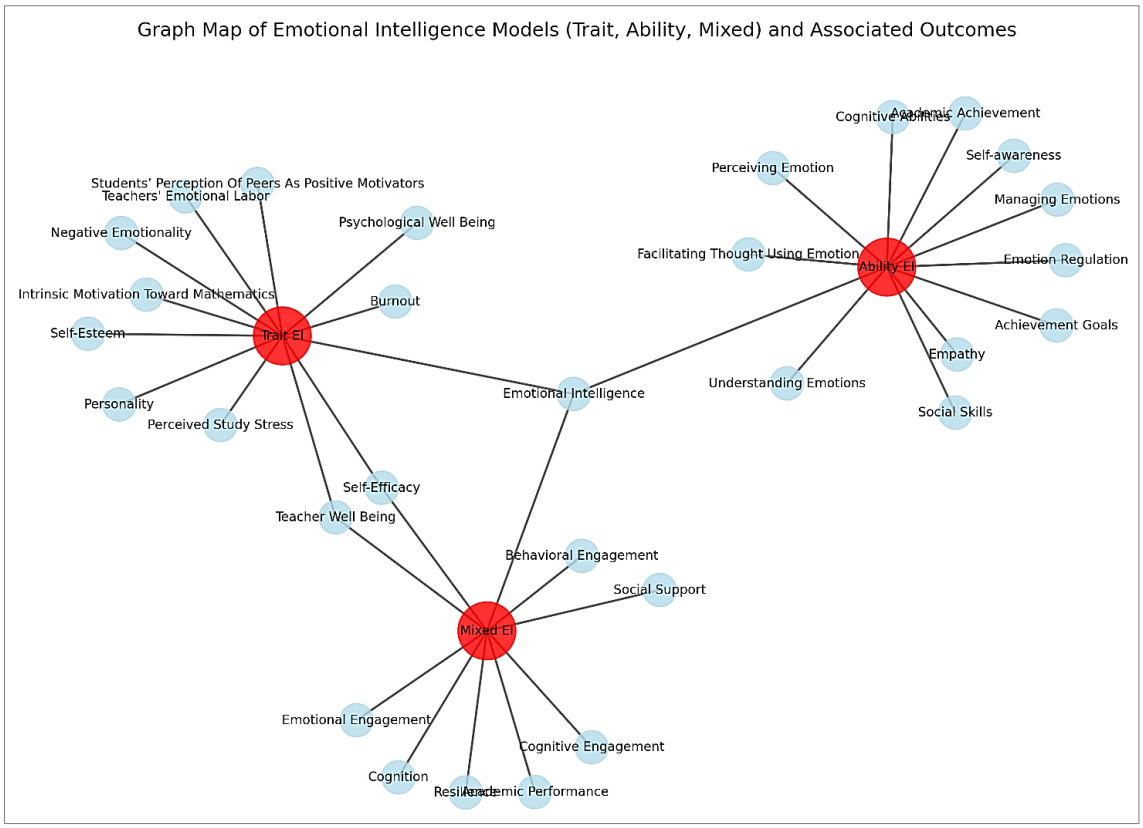

Figure 5. Mapping the Influence of Emotional Intelligence Models on Educational Outcomes

This graph map provides a clear visual representation of how the different models of EI contribute to diverse educational outcomes, highlighting the importance of incorporating EI into educational practices to foster a supportive and effective learning environment.

5- Discussion

EI makes a great contribution to creating an effective, encouraging, and positive learning environment. Those educational institutes that emphasize more on EI experience fewer behavioral problems, improved relations between teachers and students, and better academic performance. Promoting the development of EI within schools using SEL curricula can have many positive effects on the students, staff, and the community. It is reported that EI and leadership skills are directly linked to academic success. People with developed problem-solving skills, good strategies for dealing with stress, and interpersonal competencies will be likely to show more academic resilience. EI and leadership training educational curricula enhance the academic performance of students, their groups' productivity, and class dynamics. Research confirms the close link between personality traits, EI, and school performance: extraversion and conscientiousness are solid academic success predictors while neuroticism is a negative predictor [146-151]. Virtual experience combined with emotional competence further enhances academic achievement [152]. It also is positively correlated with social support and perceived academic efficacy. On the other hand, emotional instability showed a negative correlation with both EI and resilience. Extraversion, together with EI, showed positive correlations with overall well-being and problem-solving ability [153]. Therefore, it can be said that students who possessed a higher degree of EI and greater social support were better equipped to face the pressures involved in their studies. This distinction between ability and trait EI bears consequences for educational intervention. While ability EI reflects actual skill in perceiving, utilizing, understanding, and managing emotions, trait EI is concerned with self-estimated emotional ability [86, 154]. As many studies demonstrated that performance-based assessments of EI constitute a better predictor of academic success than self-report questionnaires do, findings support the development of a more.

It is important to differentiate between Ability EI and Trait EI because each model of EI influences academic outcomes differently. Several key differences appear from the systematic review of the literature about how these two models of EI influence certain educational outcomes. Ability EI refers to the actual cognitive ability to process emotional information and use it in reasoning and decision-making, including such competencies as emotion regulation and emotional perception. The most prominent ones considering Ability EI are those of the studies [91-94], where the results indicated that the students higher in Ability EI regulated their emotions better, hence positively influencing their academic achievement, especially in mathematics and sciences. It was observed that these students engaged more strongly in cognitive engagement and showed problem-solving skills. Ability EI turned out to be a stronger predictor of performance in cognitively demanding tasks than that of Trait EI. On the other hand, how people perceive their emotional abilities is more related to Trait EI. Indeed, previous studies have proved that trait EI significantly influences the emotional regulation and stress management of students, raising their motivational level toward higher engagement in their studies. Alam et al. [90] and Bakadorova & Raufelder [92] presented evidence for the fact that this type of intelligence mainly influences academic performance by improving the ability of students to handle study-related stress, maintain their motivation, and develop a positive school self-concept-all factors which determine the ability of a student to sustain good academic performance over time. Their effects seem to be significantly varied. Ability EI had a more direct impact on academic performance in cognitive processing subjects like mathematics and sciences. It also has been more predictive of academic success through objective tasks, such as emotion regulation and cognitive rehabilitation, in studies like [91, 94]. By contrast, Trait EI had broader effects on behavioral and emotional features of academic success, including school engagement, motivation, and stress management. This is evident in research studies, such as Bakadorova & Raufelder [92], in which higher scores of Trait EI related to better engagement and regulation of emotions. While Ability EI is a stronger predictor of academic performance due to the aspects of emotion regulation and cognitive abilities, Trait EI develops the emotional resilience, motivation, and stress management-skills of a student, which are similarly important for long-run academic success. In this way, both models have complementary roles regarding the shaping of academic outcomes, while Ability EI is more task-oriented, and the emotional and behavioral aspects of learning are influenced by Trait EI.

Various studies included in this review indicate that with higher levels of Ability EI, students can cope and regulate their emotions more effectively, which has a direct bearing on better cognitive engagement, resilience among students in academic pressure, and improved problem-solving skills, particularly in cognitively demanding areas like mathematics and science. For instance, studies like [91] reveal that emotional regulation, one of the core elements within Ability EI, allows the moderation of the effectiveness of treatments such as cognitive rehabilitation on academic performance among students suffering from PTSD. This evidences that the ability to regulate oneself may mean more focused effort over academics and hence relatively better performance when stressors prevail. Another important mechanism is associated with Trait EI, which by contrast is more related to how people perceive and manage their emotions over time. Indeed, several studies have identified that students with higher Trait EI are more able to cope with stress, maintain motivation, and develop an academic self-concept that will be positive and supportive of continued academic performance. For instance, the study by Bakadorova & Raufelder [92] noted that students with higher Trait EI showed better behavioral and emotional school engagement, which became one of the predictive factors for academic success. That is to say, the trait of EI influences the emotional resilience and engagement relevant for long-time academic performance. As far as interventions are concerned, the reviewed research allow the conclusion that such educational programs aimed at developing EI skilfully enhance both emotional competencies and academic results. On the other hand, other study by Pozo-Rico & Sandoval [51] provided the impact of teacher training programs, aimed at enhancing emotional competence, thus leading to improved well-being conditions among teachers and improvements within students' academic performances. In a similar direction, the study by MacCann et al. [73] underlined the enhancement of emotional regulation competencies through specific Ability EI interventions which significantly improved cognitive engagement and thus the academic performance, especially under stressful situations such as standardized tests. The other strong potential interventions that hold great promise in improving EI include SEL programs, as indicated Taylor et al. [128]. These programs develop the emotional and social skills of students and have been associated with increased engagement, motivation, and academic achievements among the student population. These interventions were comprehensive in nature, thus supporting both Trait and Ability EI by letting students improve emotional self-regulation and social interactions in a quest to improve academic performance.

Longitudinal studies on EI interventions may yield more nuanced insights into the lasting impact of EI on academic achievement, emotional regulation, and social development. Since cross-sectional studies only offer a snapshot regarding how EI correlates with academic outcomes at that moment, longitudinal studies may place the developmental trends, sustainability of intervention, and changes in student performance and behavior over time under appropriate observation. The critical longitudinal study of EI interventions would yield certain key outcomes, such as sustained academic performance; these helps identify exactly how long the positive effects of EI interventions, improved academic performance, and cognitive engagement are sustained over a period. This would go a long way to provide valuable information on the long-term benefits of EI regarding students' ability to manage academic challenges and maintain consistent performance across different educational stages. Moreover, emotional and behavioral engagement could be

tracked to clearly comprehend how the capability of students to regulate emotions affects their academic resiliency and emotional well-being throughout their school years. Longitudinal studies can help see if the Emotional Regulation skills from such programs are ultimately sustained to help students deal with stress and emotional upsets when major academic transitions, such as from primary to secondary or from high school to university, take place. These studies would also provide more detailed information about how improvements in EI-especially those that refer to aspects related to empathy and emotional self-regulation-can modify students' social interactions and relations with peers and teachers, resulting in an improved classroom atmosphere over time. Longitudinally, it would be important to research if, through intervention studies such as Pozo-Rico & Sandoval [51], improvements in well-being and emotional competences remain stable with continuing positive impacts on the educational setting across time. The longitudinal study therefore introduces time as an element of variation that enables it to study changes and trends, a feature lacking in cross-sectional analysis. Apart from giving a deeper understanding of how the impacts of EI evolve across successive stages of academic development, this approach would imply that the cross-sectional study produces only one measurement. Moreover, longitudinal studies would be more likely to examine the causal processes that underlie how interventions on EI affect academic performance, hence indicating their effectiveness over a long period-a thing that cannot be provided by the cross-sectional studies which will merely indicate correlations. Besides, longitudinal data will enable researchers and educators to make such modifications in interventions on EI, because as children grow older and new academic and social challenges appear, while it may be missed in studies designed as a cross-section.

Neuropsychology can be integrated with EI into education to improve students' academic performance by increasing mental health, emotional awareness, and social skills [155, 156]. With a much better knowledge of the neurobiological underpinnings of emotion and learning, the educator would be able to design instructional strategies that meet the great diversity of emotional and cognitive needs [157]. The role of EI goes beyond mere academic success. It is equally important in leadership development. Moreover, high EI has been described to create strong leadership skills, and these are seen to be directly related to improved academic performance and increased group productivity. One having a high EI will maintain a better and more conducive learning environment by being more understanding, hence improving academic achievement. Therefore, EI and leadership training should be integrated into educational curricula to develop compassion, self-control, and leadership among learners, which are core competencies in accomplishing academic success. The relationship between personality and academic performance is growing; EI plays a key mediator in this aspect. For example, persons with extroverted personality traits are found to seldom make rational decisions, whereas those people with agreeable and conscientious traits frequently make rational decisions. Neuroticism and conscientiousness were also found as two major predictors for EI influencing styles of decision-making [158-161].

5-1- Future Research

Further research underlines these differences between ability and trait EI within the school context. Indeed, performance-based tests, but not self-report measures, such as those assessing if the respondent can perceive, use, understand, and manage their emotions, successfully predict academic success [162]. These considerations will have implications for the design of effective educational interventions aimed at enhancing both academic achievement and behavior adjustment in young participants. Research evidence also has shown that neuropsychology and EI are vital in leading to optimal academic performance. Integration of these disciplines in the curriculum is, therefore, likely to foster mental health, emotional literacy, and social competence, all of which are important for improved learning among students [163, 164]. Understanding the neurobiological foundations of emotions and learning will thus help educators, therefore, to design teaching methods that would cater to a variety of emotional and cognitive individual differences among their students [165, 166]. EI in academic settings influences much: leadership, personality, social support, and neuropsychology. If schools and other educational institutes bring a focus on EI to the fore, then an environment will be created that attenuates the learning process, makes it supportive, and improves academic success. Hence, comprehensive EI programs at higher levels of education are very important in enhancing not only academic success but also personal growth among students [167-169].

It would not be a surprise to see how EI influences academic achievement across diverse cultural contexts, given that cultural norms, values, and expectations about emotions impact both the expression of emotions and the significance assigned to emotional regulation in school contexts. However, the underlying relationship between EI and academic performance is not fixed but is determined by factors such as cultural attitude toward emotions, the role of the family and community in emotional development, and the wider cultural expectations for academic success. In societies that have a strong collectivist orientation, such as many Asian cultures, the ability to regulate one's emotions to maintain group harmony may be more highly valued. In this case, Trait EI will relate more strongly to academic achievement since these traits, by definition, dovetail with cultural expectations toward group-oriented behavior. It has also been observed that students who can manage their own emotions are more likely to function well academically in such collectivist cultures because such emotion management skills help the students navigate complex social relationships and keep them focused on the group-oriented academic goals. On the other hand, in more individualistic cultures, Ability EI may be more strongly associated with academic success because a generally greater emphasis is placed on self-expression and emotional resilience. In this regard, independent management of emotions and their active use in

decisions and problems would be consonant with the culturally instilled virtues of personal achievement and self-reliance. It is within these very cultural contexts that the nature of emotional problems students experience, along with the types and quality of emotional support networks they can draw upon, gets defined. For example, if emotional expressiveness is encouraged in a society, then students may well obtain much better emotional support from both peers and teachers, thereby allowing them to utilize their emotional skills more positively in improving academic performance. In these cultures, emotional restraint is valued; thus, internal strategies of emotional regulation have to be more relied upon in times of academic pressure. Future research on EI and academic achievement should therefore account for these cultural variations. By exploring the underlying issue of how different cultural values shape the way in which EI is developed and used within academic settings, researchers will be in a position to more fully appreciate which particular mechanisms are responsible for explaining the contribution of EI to academic success in these different settings.

5-2- Limitations

Finally, the limitations of the studies reviewed call for future research to be undertaken within the multi-dimensional approach. There is a need to have standardized metrics of EI, accurate in capturing this construct across differing contexts, transcending reliance upon self-reported measures that might display biases. Attention should also be paid to possible ceiling effects in populations with high baseline EI and to the exploring of any adverse effects of EI interventions. More robust statistical methods need to be taken up seriously for the control of confounding variables that have effects on the relationships between EI and the academic outcomes. The inclusion of qualitative methods will further enrich these quantitative findings and give an in-depth understanding of how EI is manifested in the educational setting.

6- Conclusion

To sum up, the current research paper highlights that Emotional Intelligence (EI) indeed significantly impacts academic achievement and, in fact, concentrates on those two leading models of EI including: Ability EI and Trait EI. The systematic review of 64 peer-reviewed studies identifies that there is no doubt that EI provides students with an increased capacity for emotional control, empathy, and problem-solving skills that are valuable for classroom management as well as academic success. Inclusion of EI within educational curricula improves communication and problem-solving skills, enhances teacher-student relationships, and is thus very helpful in enriching the learning environment. These findings from the study support the implementation of selective EI interventions and curricula in schools for comprehensive development in emotional and academic areas among their students. The findings clearly outline the dire need for further research and implementation of EI within educational settings as a means to facilitate environments that are conducive to the furtherance of academic excellence and the holistic development of students and educationists.

7- Declarations

7-1- Author Contributions

Conceptualization, E.G., I.D., and G.N.; methodology, E.G. and I.D.; investigation, E.G. and G.N.; writing—original draft preparation, E.G., I.D., and G.N.; writing—review and editing, E.G., I.D., and G.N. All authors have read and agreed to the published version of the manuscript.

7-2- Data Availability Statement

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7-4- Institutional Review Board Statement

Not applicable.

7-5- Informed Consent Statement

Not applicable.

7-6- Conflicts of Interest

The authors declare that there is no conflict of interests regarding the publication of this manuscript. In addition, the ethical issues, including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, and redundancies have been completely observed by the authors.

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