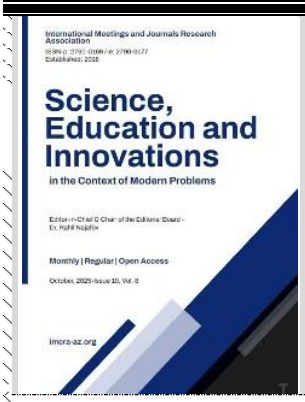

Science, Education and Innovations in the Context of Modern Problems
Issue 12, Vol. 8, 2025

Title of research article

The Influence of Emotions on Students' Decision-Making and Reasoning During Learning: A Cognitive–Affective Interaction Perspective

Belakabe Raouf
Dr.
University of Blida 2
Algeria
E-mail: raouf.81@hotmail.fr

Karrab Abbes
Dr.
University of Sétif 2
Algeria
Email: Abbes_ka@yahoo.fr

Issue web link https://imcra-az.org/archive/387-science-education-and-innovations-in-the-context-of-modern-problems-issue-12-vol-8-2025.html

Keywords Emotions; Decision-making; Reasoning; Cognitive biases; Emotional intelligence; Learning psychology; Affective cognition; Educational neuroscience.

Abstract

This research investigates the multifaceted influence of emotions on students' decision-making and reasoning processes within educational contexts. Moving beyond purely cognitive explanations of learning, it examines the integrative mechanisms through which affective states modulate attention, memory, and rational judgment. Drawing from Kahneman's dual-system theory, Damasio's somatic marker hypothesis, and Goleman's emotional intelligence model, the study conceptualizes how emotional signals guide and sometimes bias students' academic choices. Employing a qualitative–analytical approach, it interprets existing neuropsychological and pedagogical data to explain how emotions—both positive (e.g., enthusiasm, curiosity, pride) and negative (e.g., anxiety, frustration, fear)—shape cognitive efficiency, decision accuracy, and learning persistence. Findings highlight that emotions serve both as facilitators and inhibitors of rationality: while positive emotions enhance motivation, attention span, and flexible reasoning, negative emotions tend to narrow perception, increase cognitive load, and provoke maladaptive decision heuristics. Pedagogically, the study advocates for integrating emotional intelligence development and emotion-regulation strategies into curricula to strengthen students' self-awareness and cognitive adaptability. This research underscores that fostering emotionally supportive learning environments is essential for optimizing both intellectual performance and holistic well-being.

Citation. Belakabe R; Karrab A. (2025). The Influence of Emotions on Students' Decision-Making and Reasoning During Learning: A Cognitive–Affective Interaction Perspective. *Science, Education and Innovations in the Context of Modern Problems*, 8(12), 390–398. https://doi.org/10.56334/sei/8.12.33

Received: 23.03.2025 | Accepted: 21.07.2025 | Published: 05.10.2025 (available online)

Introduction

The importance of cognitive development has long been emphasized in education, with a focus on intellectual skills such as memory, attention, and reasoning. However, in recent decades, a multitude of interdisciplinary studies have highlighted the crucial role of emotions in structuring cognitive processes, particularly in learning situations. Far from being simple contextual elements, emotions play a decisive role in how students understand, analyze, and respond to information. They frequently condition the depth of their understanding and the

effectiveness of their decision-making strategies. Whether emotions are perceived as fleeting states or persistent emotional tendencies, they interact with cognition, both consciously and unconsciously, significantly influencing students' educational behavior. This article explores the complex relationship between emotion, decision-making, and reasoning in the context of student learning. This study highlights the importance of understanding that emotional states—such as anxiety, joy, frustration, or pride—are not inactive experiences. They play an active role in cognitive processing. For example, emotional sensitization can improve focus on crucial cues, promote memory strengthening, and boost engagement. Conversely, powerful negative emotions can limit the scope of attention, cause cognitive distortions, and disrupt rational reasoning. These impacts are particularly pronounced in highly critical academic contexts, where choices regarding performance, effort, or persistence are routinely made and frequently under duress. We explore various aspects of this question. We begin by defining emotions from a psychological and neurocognitive perspective, highlighting their diverse impacts on attention, memory, and judgment. Subsequently, we review major theories, such as Kahneman's binary system theory, Damasio's somatic marker hypothesis, and Goleman's emotional intelligence model, which provide essential insights into the interrelationship between affective and cognitive systems. We then investigate the distinctive effect of positive and negative emotions on academic decision-making, as well as how emotionally biased judgment can hamper students' ability to think critically and adaptively. Finally, we discuss the pedagogical implications of these findings, highlighting the critical importance of educators in establishing emotion-friendly environments, providing instruction on emotion management, and incorporating emotional intelligence into academic progression. Ultimately, understanding the emotion-cognition interface goes beyond a theoretical framework and becomes a practical necessity for educators and policymakers. In a context where academic success and emotional well-being are increasingly linked, it is crucial to adopt emotional intelligence-based pedagogical methods to help students make wise choices, think effectively, and develop both intellectually and personally.

1. Understanding Emotions and Their Cognitive Functions

1.1 Defining Emotions

Emotions represent sophisticated psychological states that involve an interaction between physiological arousal, expressive manifestations, and conscious perception. They generally involve vivid and succinct reactions to stimuli that carry personal meaning. Paul Ekman (1992), a leading figure in the study of emotions, suggested that emotions consist of three key elements: physiological reactions (such as changes in pulse rate or hormone levels), behavioral responses (such as facial expressions or gestures), and cognitive judgments (interpretations or appraisals of events). Emotions are generally divided into two categories: primary emotions, which are universal and biologically rooted—such as joy, anger, fear, and sadness—and secondary emotions, which are more sophisticated and influenced by personal experiences and cultural norms. Secondary emotions encompass feelings such as shame, guilt, and pride, which typically require advanced cognitive processing and social learning. This classification emphasizes the multidimensional nature of emotional experiences and underscores their evolutionary and societal importance (Paul Ekman, 1992, pp. 170–172).

1.2 The Impact of Emotions on Cognition

Emotions are essential in shaping and directing cognitive mechanisms. Far from being merely responses to external events, emotions play a crucial role in how we perceive, decipher, and respond to information in our environment. According to the work of Tyng et al. (2017), it has been shown that emotions can influence various cognitive functions, such as attention, memory, planning, reasoning, and judgment. For example, emotionally charged stimuli tend to attract attention more quickly compared to neutral stimuli, suggesting that emotional salience can prioritize the allocation of cognitive resources. Furthermore, emotional states can influence memory in either a positive or negative way; positive emotions tend to broaden the cognitive spectrum and encourage creativity in problem-solving, while negative emotions can focus attention and promote analytical reasoning, sometimes at the expense of flexibility. Furthermore, emotions play a role in decision-making by influencing outcome evaluation and shaping risk assessment. They function as internal indicators that guide behavior, especially in complex or ambiguous contexts. Therefore, the cognitive influence of emotions is not only consistent but also significant, proving that intellectual achievement is not only the result of logic and reasoning, but is closely associated with emotional experience (Tyng et al, 2017, p2-3).

2. Decision Making and Reasoning: Fundamental Concepts

2.1 Decision Making

Decision making is an essential cognitive process that allows individuals to navigate complex environments by selecting among various action options. Essentially, the decision-making process involves identifying alternatives, examining their potential consequences, and ultimately selecting the most appropriate or desired one based on available information and individual or situational goals. In his groundbreaking book "Thinking, Fast and Slow" (2011), Daniel Kahneman highlights that the decision-making process relies on two different cognitive mechanisms: System 1, which is fast, instinctive, and frequently influenced by emotions; and System 2, which is characterized by slower thinking, more in-depth reflection, and an analytical approach. Although System 1 facilitates prompt and efficient decisions in familiar or time-consuming situations, it is not exempt from biases and heuristics that can lead to recurring errors. System 2, on the other hand, promotes more sophisticated thinking, although it requires greater cognitive effort and is restricted by limitations in attention and short-term memory. Many elements influence the ability to make effective decisions, including emotional state, past experience, risk assessment, and social or environmental constraints. Emotions, specifically, play a crucial role in indicating the value of different alternatives and highlighting potential risks or benefits. However, over-reliance on emotions could compromise objectivity, leading to impulsive or suboptimal decisions. Conversely, choices made solely on the basis of rational analysis, without emotional consideration, may lack urgency or individual relevance. Therefore, it is more appropriate to understand decision-making as a dynamic exchange between affective and cognitive mechanisms, with emotions having both positive and negative influence depending on the situation (Daniel Kahneman, 2011, p. 19-20).

2.2 Reasoning

Reasoning is the intellectual ability that allows individuals to understand information, make connections between elements, and formulate relevant inferences. It supports problem-solving, critical reasoning, and the development of logical arguments. Reasoning can generally be classified into two categories: deductive reasoning and inductive reasoning. Deductive reasoning aims to deduce specific conclusions from general principles or assumptions, thus ensuring logical certainty as long as these premises remain true. One can deduce "Socrates is mortal" from the premises "All humans are mortal" and "Socrates is human." This type of reasoning is frequently used in mathematics, logic, and the formal sciences. Induction, on the other hand, seeks to deduce general principles or patterns from specific observations. While it does not guarantee the certainty of conclusions, it is essential in hypothesis development and empirical investigation. For example, observing that the sun rises every morning can lead to the shared belief that it will continue to do so. According to Stanovich and West (2000), both types of reasoning are essential for grasping the complexities of everyday life, but they operate at varying degrees of certainty and are driven by distinct cognitive processes. Reasoning processes are not error-free. Cognitive distortions, such as confirmation bias or the availability heuristic, can distort the thought process by favoring data that aligns with pre-existing beliefs or is easiest to remember. Furthermore, reasoning is influenced by factors such as cognitive load, engagement, and emotional context. Under stress or emotional arousal, individuals may reason differently, indicating that rationality is not based solely on logic but is also influenced by internal psychological states and external environmental circumstances. Therefore, it is essential to examine both formal structures and concrete contexts to understand reasoning (Stanovich & West, 2000, pp. 653–654).

3. Theoretical Models of Emotion-Cognition Interaction

The interaction between emotions and cognitive processes has been the subject of numerous theoretical models. These models seek to demonstrate how emotions influence thought processes, judgment, and decision-making, frequently highlighting the reciprocal nature of the interaction between emotion and cognition. Kahneman's two-sided system theory, Damasio's somatic marker hypothesis, and Goleman's emotional intelligence framework are among the most significant. Each perspective provides distinct insights into how emotions influence, guide, or impede cognitive processes.

3.1 Kahneman's Dual System Theory Daniel

The Dual System Theory, proposed by Kahneman in 2011, serves as an explanatory model for understanding the processes that govern thinking and decision-making in humans. According to this model, cognition occurs via two distinct systems. System 1 operates quickly and automatically, being primarily driven by intuition and emotions. It is based on heuristics, is easy to use, and frequently operates unconsciously. System 2, on the other hand, is distinguished by its slowness, deliberation, and analytical approach. It is called upon when deliberate thought, strict discernment, and rational analysis are required to accomplish tasks. Emotions have a crucial impact on the activation of System 1, frequently pushing people to make rash judgments or choices based on instinct rather than careful analysis. Although System 1 can be efficient and adaptable, especially in familiar or tense contexts, it is not exempt from biases and errors. For example, emotions such as fear or anger can lead to impulsive and highly

emotional decisions that escape more logical evaluation. System 2, which offers greater precision and reasoning, requires more cognitive resources and is more susceptible to disruptions due to stress, exhaustion, or emotional overload. Kahneman's model demonstrates how emotional states can affect not only the speed but also the excellence of cognitive processing, frequently defining the intuitive or reflective aspect of a decision (Kahneman, 2011, p. 44-45).

3.2 Somatic Marker Hypothesis

The somatic marker theory, put forward by Antonio Damasio in 1994, provides a neurobiological perspective on the relationship between emotion and decision-making. According to this theory, emotional experiences are linked to distinct bodily reactions, called somatic indicators, which are memorized and later retrieved when formulating future choices. These physiological cues act as intuitive compasses, allowing individuals to estimate possible outcomes based on their past emotional experiences. For example, someone who experienced anxiety following an unfortunate investment decision may experience profound discomfort when faced with a similar option, leading them to either act cautiously or avoid it altogether. Damasio's theory emphasizes that emotions are not unreasonable forces that disrupt rationality, but rather indispensable instruments that optimize the decision-making process, especially in complex or ambiguous circumstances. In this view, somatic indicators act as abbreviations that circumvent the need for a complete cognitive study, facilitating faster and often more adaptive decisions. It is worth noting that individuals with damage to the areas of the brain responsible for managing emotions, such as the ventromedial prefrontal cortex, generally experience difficulty making relevant decisions, even if their logical reasoning capacity remains intact. This information supports the hypothesis that emotion is not simply a complement to cognition, but that it constitutes an essential component of intelligent behavior (Antonio Damasio, 1994, p. 173-174).

3.3 Emotional Intelligence Model

Daniel Goleman popularized the emotional intelligence (EI) model in 1995, which offers a broader view of how emotions and cognition interact to influence behavior. Emotional intelligence refers to the ability to detect, grasp, manage, and effectively harness emotions, both personal and in others. As Goleman indicates, emotional intelligence includes several essential components: self-awareness, self-control, motivation, empathy, and social skills. These skills help individuals control their emotional responses, resolve disagreements, and make thoughtful decisions, particularly in social and organizational environments. Emotional intelligence helps improve cognitive control, giving individuals the ability to control impulsive reactions and practice reflective thinking. For example, a person with a high emotional IQ is more likely to recognize when their anger is influencing their judgment and to seek self-control before making a decision. Thus, they favor the more logical processes of System 2 instead of relying solely on the emotional impulses of System 1. Furthermore, emotional intelligence strengthens interpersonal reasoning by developing empathy and communication, which facilitates collaborative problem-solving and fosters leadership. According to Goleman, intellectual competence alone does not guarantee success; the ability to perceive and regulate emotions is equally crucial for achieving personal and professional goals (Goleman, 1995).

4. The Impact of Emotions on Academic Decision-Making

In academic settings, students often make decisions influenced by their emotions. These decisions include subject selection, developing learning strategies, seeking assistance, participating in collaborative projects, and choosing to continue studying a complex discipline. Affective states can either enhance or disrupt cognitive abilities fundamental to academic performance, such as concentration, information recall, and executive control. In high-stakes educational contexts, where decision-making occurs under pressure, the interaction between emotions and cognition takes on particular importance. Studies have shown that emotional experiences, whether positive or negative, have a significant impact on how students process information and make educational decisions.

4.1 Effects of Negative Emotions

Negative emotions such as anxiety, stress, frustration, and fear of failure have been shown to consistently impair cognitive performance and jeopardize the quality of academic decisions. According to Owens et al. (2012), increased anxiety can limit the ability to concentrate, leading students to focus on perceived threats (such as failing an exam or not meeting expectations) at the expense of relevant information or alternative solutions. This focusing bias reduces cognitive flexibility and limits the learner's ability to think creatively or imagine new approaches. Stress and anxiety can also impair working memory, the cognitive system responsible for storing and processing information over a short period of time. When overwhelmed by emotions, students may have difficulty focusing,

remembering main ideas, or effectively judging alternatives. In these circumstances, educational choices may become overly conservative or reactive: students may opt for simpler tasks to minimize risks or refrain from asking questions for fear of being judged. Emotional discomfort increases receptivity to negative criticism, deterring exploration and engagement with complicated topics. Thus, the goal of the learning process is more to reduce failure than to optimize progress (Owens et al, 2012, p. 344-445).

4.2 Effects of Positive Emotions

However, emotions such as joy, pride, interest, and hope have been shown to promote learning and optimize decision-making processes in the academic context. The broaden-and-build hypothesis, formulated by Fredrickson in 2001, argues that positive emotions broaden the range of behaviors and thoughts, encouraging individuals to discover new perspectives, be intellectually daring, and develop more adaptive approaches to problem-solving. In an educational context, students who experience positive emotions are more likely to engage in complex topics, seek feedback, and persevere despite setbacks. Positive affect also boosts self-efficacy (the belief in one's own ability to succeed), which promotes more strategic decision-making. Students who feel confident and emotionally secure are more likely to set achievable goals, effectively organize their study habits, and critically assess their progress. They are also more receptive to cooperation and constructive feedback, perceiving these exchanges as opportunities for growth rather than as threats to their self-esteem. Moreover, pride in academic achievement can act as a motivating factor, stimulating constructive behaviors and promoting the pursuit of long-term goals. As a result, positive emotions not only boost cognitive performance in the short term, but also encourage lasting dispositions that support lifelong learning (Fredrickson, 2001, p. 218-219).

5. Emotionally Biased Reasoning

Emotions, despite their importance for adaptive decision-making, can also generate significant distortions in cognitive mechanisms. In an educational context, emotionally charged reasoning can distort students' vision, disrupt their critical thinking, and lead to consistently incorrect assessments. This occurs when emotional responses, whether conscious or not, overwhelm objective assessment, leading students to distort information or selectively focus on emotionally salient aspects. The origin of this distortion lies primarily in two mechanisms: emotional cognitive biases and attentional narrowing, both of which can compromise sound reasoning and robust academic performance.

5.1 Emotional Cognitive Biases

Emotions have the ability to significantly influence individuals' information processing, often generating cognitive distortions that consolidate existing beliefs or emotional situations. One of the most widely studied cases is confirmation bias, in which people tend to disproportionately seek out, interpret, and remember information that supports their preexisting hypotheses or opinions. According to Evans and Stanovich (2013), this bias does not stem solely from flawed logic but is frequently influenced by emotions. When students have strong beliefs about their abilities, academic interests, or sensitive topics, they may unconsciously sort evidence to align with these beliefs, even if contradictory evidence is more credible or numerous. This affective bias can significantly distort critical thinking, which requires the impartial examination of different viewpoints and evidence. For example, a learner who fears failure might focus excessively on previous negative feedback and overlook signs of improvement, thus perpetuating self-defeating rhetoric. Furthermore, students who have a strong attachment to a specific theory or solution may discount alternative explanations, thereby limiting their ability to engage in constructive argument or unbiased knowledge-seeking. In these situations, emotions not only support the thought process: they dynamically shape and, on occasion, distort it, jeopardizing the quality of academic choices and problem-solving (Evans & Stanovich, 2013, pp. 233-234).

5.2 Attentional Narrowing Effect

Another process through which emotion influences reasoning is the attentional narrowing effect, a phenomenon where intense emotional stimulation, whether positive or negative, limits the scope of attention. According to Pessoa (2009), when emotional intensity increases, cognitive resources are focused on salient emotional stimuli, generally at the expense of broader contextual awareness. This selective focus can be beneficial in situations of immediate danger (e.g., by focusing on the threat), but in an academic setting, it can minimize the student's ability to adopt a broad or strategic perspective. For example, a student experiencing test anxiety may focus on certain questions they consider complex or stressful, to the detriment of simpler questions or the overall strategy of the test. Thus, frustration with unsolved problems can lead students to focus on a specific method or solution, neglecting other potentially more powerful approaches. This limited scope reduces cognitive flexibility, a key

aspect of creative and analytical thinking. As a result, students may have difficulty spotting patterns, assimilating diverse sources of information, or revising their logic based on new information. Furthermore, the interaction between the attentional narrowing effect and cognitive biases is common, increasing their influence. Emotional arousal draws attention to confirmatory evidence while obscuring contradictory cues, reinforcing incorrect conclusions. Therefore, emotionally influenced reasoning is not solely the result of faulty logic but stems from a complex interplay between emotion, attention, and cognition. Understanding this interaction is crucial for educators who wish to encourage deeper reflection and resilience in their students (Pessoa, 2009, p184).

6. Pedagogical Implications and the Teacher's Role

Given the significant impact of emotions on cognitive abilities, decision-making, and thought processes, it is crucial that educational environments intentionally address the emotional aspects of learning. Teachers play a crucial role in shaping students' emotional experiences through their interpersonal interactions and the overall classroom atmosphere. The emotional tone of an educational environment, far from negligible, can directly influence students' engagement, resilience, enthusiasm, and academic success. This section examines three key areas where educators can leverage emotional sensitivity to support education: fostering a positive emotional environment, cultivating students' emotional intelligence, and promoting emotion management through metacognitive tactics.

6.1.Foster a Positive Emotional Climate

A positive emotional classroom environment is essential for effective learning. When students feel psychologically safe, respected, and valued, they tend to take more intellectual risks, persevere through adversity, and engage fully with the content. Instructors can foster such an environment by recognizing student work rather than emphasizing performance alone, praising personal progress, and offering constructive rather than punitive feedback. These methods help reduce performance anxiety and fear of failure, which are known to disrupt cognitive processes and hinder decision-making. Furthermore, promoting student initiative and independence contributes to a sense of ownership over their learning. When students have the opportunity to make decisions, share their thoughts, and explore topics they are passionate about, their intrinsic motivation increases, often accompanied by positive emotions such as curiosity and pride. An emotionally enriching environment not only helps improve academic performance, it also promotes students' emotional development, thus reinforcing a positive feedback loop between the affective and the cognitive (Brackett and Rivers, 2014, p371-372).

6.2 Developing Students' Emotional Intelligence

Another crucial pedagogical concept is the importance of teaching emotional intelligence (EI)—the ability to identify, understand, and manage one's own emotions as well as those of others. According to Brackett and Rivers (2014), integrating social-emotional learning (SEL) programs into the school curriculum systematically enables students to develop these skills. Social-emotional education (SEE) teaches students to recognize their feelings, communicate them constructively, and manage their responses in challenging circumstances. These skills are crucial for making wise choices, managing disagreements, and working cooperatively effectively—all key aspects of academic and personal success. Incorporating SEL into classroom education improves students' ability to analyze their emotional experiences rather than being overwhelmed by them. For example, a student who can identify signs of growing frustration with a complex math task is more likely to pause, take a breath, and seek assistance, rather than withdraw or react impulsively. By incorporating emotional literacy into everyday educational activities, educators provide students with the means to build emotional resilience, thereby more effectively preparing them for the intellectual challenges of school life (Brackett & Rivers, 2014, p. 378).

6.3 Emotion Regulation and Metacognition

The link between emotion management and emotional intelligence is very strong. It refers to the ability to manage emotional reactions in a way that promotes rather than disrupts goal-directed behavior. According to Gross (2015), effective regulation methods such as reappraisal, mindfulness, and goal setting can support students by helping them maintain attention, reduce stress, and persist despite academic challenges. When students successfully manage their emotional responses, they are better able to effectively mobilize their cognitive abilities, maintain sustained focus, and recover from disappointments. Emotional regulation also enhances metacognitive awareness, the ability to monitor and control one's own cognitive mechanisms. Students who are able to step back and analyze not only their thoughts but also their emotions are better equipped to modify their strategies and remain focused on their educational goals. For example, a student preparing for an exam may realize that their anxiety is leading to ineffective study methods, motivating them to implement relaxation strategies or reorganize their study schedule. Teachers can foster this change by establishing reflective methods, promoting emotional appraisals, and specifically

instructing tactics for managing stress and frustration. In summary, by focusing on the emotional foundations of education, educators have the opportunity to greatly improve students' academic achievement, well-being, and lifelong learning skills. Emotions are not separate from cognition; they are an essential component of it. Thus, the teacher's mission goes beyond simply imparting knowledge; it also encompasses developing the emotional competencies necessary for deep and lasting assimilation (Gross, 2015, pp. 136-137).

Conclusion

The interaction between emotions, decision-making, and reasoning in educational situations is both profound and complex. This article illustrates that emotions are not simply peripheral responses to educational activities: they are firmly embedded in the cognitive structure that determines how students manage information, construct assessments, and participate in problem-solving. Whether emotions amplify attention and memory or induce cognitive distortions and biases, they directly shape the conditions for learning. Understanding this dynamic is crucial for developing more effective pedagogical strategies and educational policies that consider the learner as a whole, not just their intellectual output. We first analyzed the intrinsic nature of emotions, characterizing them as multidimensional reactions encompassing physiological, behavioral, and cognitive aspects. Drawing on work in cognitive neuroscience and educational psychology, we have demonstrated that emotions have a significant impact on essential cognitive processes such as attention, memory, and judgment. The cognitive consequences of emotions are not systematically positive or negative; rather, they vary depending on the valence, intensity, and context of the emotional state. While negative feelings such as worry and terror can limit our concentration and hamper our thinking, positive feelings such as happiness and pride can expand our cognitive abilities and encourage strategic decision-making. We examined Kahneman's dual-system theory, which outlines how the emotional processes of System 1 frequently tend to dominate the more analytical reasoning of System 2, and scrutinized theoretical models explaining these interactions. Damasio's somatic marker theory also emphasized the importance of embodied feeling in guiding decisions, especially in contexts where rational evaluation is inadequate or difficult to achieve. Goleman's model of emotional intelligence highlighted the importance of capturing and managing emotions to optimize cognitive control, social interaction, and academic performance. Taken together, these models highlight that emotion and cognition are not separate domains but intricately intertwined systems operating in an ongoing dialogue. In academic settings, these concepts have particularly significant implications. Students' emotional states can often negatively or positively affect their reasoning abilities and decision-making processes. Cognitive biases associated with emotions, such as confirmation bias, can limit students' receptivity to new information or perspectives. Furthermore, the attention-contracting effect caused by emotional stress can lead to inflexible or simplistic problem-solving approaches. Identifying these patterns is essential for educators seeking to support not only academic excellence but also the development of metacognitive and emotional skills that support lifelong learning. Most crucially, this article has highlighted the didactic consequences of the emotion-cognition interaction. Teachers are in a unique position to shape the emotional climate of their classrooms. By promoting a safe, supportive, and enriching learning environment, they can help reduce the negative impacts of unfavorable emotions while accentuating the benefits of beneficial ones. Incorporating social-emotional education into the curriculum provides students with the means to decipher, manage, and harness their emotions, thereby strengthening their attention, resilience, and relational performance. Furthermore, incorporating emotion management strategies into metacognitive instruction could help students reflect more deeply on their cognitive mechanisms and affective reactions, leading to more informed and adaptive decisions.

In conclusion, integrating the emotional and cognitive dimensions of learning is imperative; it is not an option. For teachers to prepare students not only for academic excellence but also for thoughtful engagement in a constantly complex world, they must acknowledge and heed the emotional truths of education. Future education must bridge the gap between cognitive skill development and emotional awareness by cultivating spaces where students are encouraged to think clearly, make sound decisions, and develop holistically. Identifying emotions as a fundamental aspect of decision-making and reflection offers a more subtle and humane educational perspective, aligned with the ultimate aspirations of personal growth, critical thinking, and intellectual development.

. Methodology

This study adopts a qualitative and integrative methodology based on theoretical analysis and synthesis of empirical studies in cognitive psychology, neuroscience, and educational sciences. The method combines:

- Literature review and conceptual synthesis: Examination of classical and contemporary models (Kahneman, Damasio, Goleman) explaining emotion–cognition interactions.
- Comparative framework: Mapping of emotional effects across distinct cognitive domains—attention, memory, and

reasoning.
- Interpretive approach: Hermeneutic interpretation of empirical results to derive pedagogical implications.

Sources included peer-reviewed journal articles, experimental findings, and pedagogical models published between 1990 and 2024 in databases such as ScienceDirect, SpringerLink, and ERIC. No primary data collection involving human participants was conducted.

3. Findings and Discussion

3.1 Emotions as Catalysts and Constraints

The analysis demonstrates that positive emotions (interest, enthusiasm, hope) amplify cognitive flexibility and problem-solving efficiency by activating dopaminergic pathways linked to reward systems. They facilitate memory consolidation and broaden attentional scope. Conversely, negative emotions, particularly anxiety and stress, reduce working memory capacity and promote impulsive or avoidance-based decision-making.

3.2 Emotional Markers in Decision Processes

Damasio's somatic marker hypothesis elucidates that physiological signals accompanying emotions act as shortcuts in complex reasoning tasks, guiding adaptive responses. However, when these markers are distorted by persistent fear or frustration, they can bias logical evaluation and produce irrational academic decisions (e.g., avoidance of challenging tasks).

3.3 Dual-System Processing and Affective Bias

Kahneman's System 1 (fast, intuitive) and System 2 (slow, analytical) framework reveals how emotional arousal often activates intuitive reasoning, sometimes at the expense of deliberate thought. Students under stress are more likely to rely on heuristic shortcuts, misjudging risks and benefits in academic choices.

3.4 Pedagogical Implications

The findings indicate that emotional literacy should be considered an integral component of learning design. Strategies such as mindfulness, self-regulation training, and feedback moderation can stabilize students' affective states, improving their metacognitive awareness and rational reasoning. Educators should cultivate environments where students can express and regulate emotions constructively, thereby aligning emotional energy with cognitive objectives.

4. Ethical Considerations

This research adheres to the ethical standards of academic integrity and intellectual honesty. As a theoretical and secondary data–based study, it does not involve direct experimentation or human participants. All cited works are properly referenced, and no copyrighted material has been reproduced without permission. The study aligns with the COPE (Committee on Publication Ethics) principles for responsible academic conduct.

5. Acknowledgments

The authors express sincere gratitude to the Department of Psychology and Education at University of Blida 2 and University of Sétif 2 for their institutional support. Special thanks to colleagues and students who contributed insights during the preliminary discussions that shaped this work.

6. Funding

This study received no specific grant from any public, commercial, or not-for-profit funding agency. It was conducted as part of the authors' academic research initiatives within their respective universities.

7. Conflict of Interest

The authors declare no conflicts of interest related to this research. They have no financial or personal relationships that could have influenced the work reported in this paper.

Bibliography

1. Brackett, M. A., and Rivers, S. E. (2014). Transforming Students' Lives through Social and Emotional Learning. In R. Pekrun and L. Linnenbrink-Garcia (eds.), International Handbook of Emotions in Education. Routledge.
2. Damasio, A. R. (1994). Descartes' Error: Emotion, Reason, and the Human Brain. New York: G.P. Putnam.
3. Asadov, A. (2023). The Role of World Literature in the Formation of Students' Planetary Thinking. *Науково-теоретичний альманах Грані*, Grani Journal.
4. Ekman, P. (1992). An Argument for Basic Emotions. Cognition and Emotion.
5. Evans, J. S. B. T., and Stanovich, K. E. (2013). Dual Theories of Higher Cognition: Advancing the Debate. Perspectives on Psychological Science. https://doi.org/10.1177/1745691612460685
6. Fredrickson, B. L. (2001). The Role of Positive Emotions in Positive Psychology: The Broaden-and-Build Theory of Positive Emotions. American Psychologist. https://doi.org/10.1037/0003-066X.56.3.218
7. Goleman, D. (1995). Emotional Intelligence: Why It May Be More Important Than IQ. New York: Bantam Books.
8. Gross, J. J. (2015). Emotion Regulation: Current Status and Future Prospects. Psychological Inquiry. https://doi.org/10.1080/1047840X.2014.940781
9. Kahneman, D. (2011). Thinking, Fast and Slow. New York: Farrar, Straus and Giroux.
10. Owens, M., Stevenson, J., Hadwin, J. A., & Norgate, R. (2012). Anxiety and depression in academic performance: An exploration of the mediating factors of worry and working memory. School Psychology International. https://doi.org/10.1177/0143034311427433
11. Pessoa, L. (2009). How do emotion and motivation direct executive control? Trends in Cognitive Sciences. https://doi.org/10.1016/j.tics.2009.01.006
12. Stanovich, K. E., & West, R. F. (2000). Individual differences in reasoning: Implications for the rationality debate? Behavioral and Brain Science.