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MINDFULNESS AND CREATIVITY: PSYCHOLOGICAL AND NEURAL EFFECTS ON THE CREATIVE PROCESS

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ABSTRACT

Introduction: This article examines the impact of mindfulness on the four phases of the creative process: preparation, incubation, illumination, and verification. The article emphasizes how mindfulness regulates key neural networks, such as the default mode network (DMN) and the executive control network (ECN), thereby optimizing the interplay between divergent and convergent thinking. **Methodology**: A systematic review of the scientific literature was conducted, along with a critical analysis of recent experimental studies. **Results**: Mindfulness was found to increase creative fluency, reduce stress associated with mental blocks, enhance insight, and strengthen the evaluation of ideas. **Discussion**: The results position mindfulness as a fundamental tool for enhancing creativity in various settings. **Conclusions**: Practicing mindfulness fosters neurocognitive balance, which boosts creative capacities and offers effective solutions in contexts that demand high cognitive ability.

Keywords: Mindfulness; creativity; neurocommunication attention; cognitive processes.

1. INTRODUCTION

Creativity is a fundamental human capacity essential for innovation and complex problem solving. It is a dynamic process involving several interrelated stages: preparation, incubation, illumination, and verification (Wallas, 1926). In recent years, neuroscience

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has deepened our understanding of the cognitive basis of creativity by highlighting the interaction between three key neural networks: the default mode network (DMN), associated with divergent thinking and idea generation; the executive control network (ECN), which facilitates critical analysis and convergent thinking; and the salience network, which regulates the transition between the other two networks according to the cognitive demands of the moment. Mindfulness, defined as paying full attention to the present moment with acceptance, has been shown to significantly impact creative processes. Mindfulness influences neurocognitive and emotional dimensions, facilitating interaction between the aforementioned networks and promoting a mental state conducive to creativity (Davidson & Hölzel, 2016; García-Campayo & Demarzo, 2018). Research suggests that mindfulness improves attention management, cognitive flexibility, and emotional regulation—all of which are essential elements for optimal creative performance (Zeidan, 2010).

The relationship between mindfulness and creativity is also considered within a broader context that examines how mindfulness improves productivity and stress management. Mindfulness reduces anxiety levels and increases cognitive efficiency, enabling individuals to adaptively respond to environmental challenges (Vargas, 2020). This approach is particularly relevant in a world characterized by multitasking and constant cognitive demands, where attentional resources are compromised (Monsell, 2003; Ophir et al., 2009).

From a psychological perspective, mindfulness promotes emotional regulation by encouraging acceptance and non-judgment. This enables individuals to more effectively manage emotional barriers to creativity, such as fear of failure and excessive self-criticism (Hölzel et al., 2011). Additionally, mindfulness cultivates openness and curiosity, facilitating the generation of original ideas—a critical aspect of the initial creative process (Kabat-Zinn, 2003).

In neurocognitive terms, mindfulness regulates the networks involved in creativity. During the preparation phase, mindfulness reduces interference from the ECN, enabling more fluid and spontaneous divergent thinking (Vargas Delgado, 2022). During the incubation phase, mindfulness facilitates cognitive and emotional disengagement, reducing stress and promoting subconscious reorganization of ideas (Porges, 2017). During the illumination phase, mindfulness strengthens the salience network to help identify relevant patterns and moments of insight. In the verification phase, mindfulness optimizes attentional focus and the analytical evaluation of generated ideas (Chun et al., 2017).

Integrating mindfulness into educational, work, and artistic contexts has shown promising results in improving creativity and overall well-being. Studies such as those by Vargas Delgado and Sacaluga Rodríguez (2021), for example, highlight how mindfulness can transform communication and organizational dynamics, promoting greater innovation and adaptability. This approach aligns with Doria's (2021) research, which emphasizes the importance of transpersonal intelligence in expanding creative capacities and fostering human connection.

This study aims to analyze the effects of mindfulness on the creative process, considering its neurocognitive and emotional implications. The study also proposes practical

strategies for integrating mindfulness as a key tool for optimizing human creative abilities. García Campayo and Demarzo (2015) point out that mindfulness represents a revolution in personal and professional development, combining neuroscientific advances with ancient practices that foster holistic well-being.

In an increasingly complex and demanding world, creativity is a fundamental necessity, not just a valuable resource. This study fits within this context by providing an interdisciplinary perspective that connects scientific evidence on mindfulness with its practical application in improving creative performance.

2. OBJECTIVES

The main purpose of this article is to analyze how the practice of mindfulness influences the creative process from a scientific and multidimensional perspective. The creative process is considered one of the fundamental pillars of innovation, complex problem-solving, and adaptability in cognitively demanding environments. The analysis examines the neurocognitive, emotional, and practical implications of mindfulness during the preparation, incubation, illumination, and verification phases of the creative process.

The research focuses on understanding how mindfulness affects key neural networks, such as the default mode network (DMN), the executive control network (ECN), and the salience network. These networks facilitate interaction and transition between divergent and convergent thinking. This neurocognitive balance, mediated by mindfulness, is essential for maximizing creative potential and overcoming emotional and cognitive barriers associated with creative performance.

Specifically, the article delves into the impact of mindfulness on the preparation phase and explores how mindfulness contributes to idea generation through divergent thinking. During this stage, mindfulness relaxes executive controls, reducing internal interferences, such as perfectionism and self-criticism, and promoting cognitive openness to new conceptual connections.

During the incubation phase, the analysis examines how mindfulness promotes active disengagement from the creative problem, thereby reducing stress and mental rumination (Vargas Delgado, 2017). This disengagement allows the ideas generated during the preparation phase to be reorganized subconsciously, increasing the likelihood of generating novel insights. Specific practices, such as walking meditation or mindfulness exercises during routine tasks, are especially effective in enhancing this stage.

As for the illumination phase, the research explores how mindfulness strengthens the salience network. This strengthening facilitates the identification of significant patterns and promotes moments of insight, or "Eureka!" moments. This aspect is based on neuroscientific studies demonstrating how mindfulness increases the brain's sensitivity to relevant stimuli. This allows valuable ideas to emerge and be recognized, even in contexts of high cognitive complexity. In the verification phase, the article explores how mindfulness enhances the convergent thinking necessary to evaluate and refine generated ideas. The sustained attentional focus and emotional self-regulation that

mindfulness promotes play a fundamental role here in the objective selection of the most viable and effective solutions, especially in high-pressure scenarios.

Furthermore, the study aims to integrate these findings into a practical framework by offering recommendations for implementing mindfulness programs that optimize creativity in educational, professional, and artistic settings. These applications seek to improve not only individual performance, but also group dynamics, fostering innovation in teams and organizations.

Ultimately, this article aims to contribute to scientific knowledge by providing a comprehensive view of how mindfulness can be an essential tool for creative development. It opens new lines of research that delve deeper into mindfulness's impact on different populations, cultural contexts, and practice modalities.

3. METHODOLOGY

This study uses a systematic narrative review approach (Grant & Booth, 2009), which combines a systematic search with a critical narrative analysis. Searches were conducted in the PubMed, Scopus, and Web of Science databases using terms such as "mindfulness AND creativity" and "default mode network AND executive control network AND creativity." There were no year restrictions, and the cutoff date was June 2025.

The bibliographic foundation and source selection included key, high-impact, published research such as "What Do We Know About Mindfulness?" by García-Campayo, J. and Demarzo, M. (2018), and "Transpersonal Conscious Neurocommunication and Mindfulness." The 21st-century professional: Communication and Learning Tools for Career Success" (Vargas Delgado, 2022). Sources were searched in renowned academic databases, such as PubMed, Scopus, and Web of Science. Specific keywords were used, such as "mindfulness," "creativity," "default mode network," "executive control network," and "salience network," combined using Boolean operators (AND, OR). The selection focused on research evaluating the effects of mindfulness on the phases of the creative process: preparation, incubation, illumination, and verification.

Inclusion and exclusion criteria were defined to ensure the relevance and quality of the sources. Inclusion criteria included empirical studies or systematic reviews that addressed the relationship between mindfulness and creativity; research that was published in Spanish or English; peer-reviewed research; research that was accessible in full text; and studies that included neurocognitive measurements (fMRI or EEG) or psychometric instruments. Exclusion criteria included theoretical studies without empirical evidence, studies with non-representative samples or less rigorous methods, and studies that did not provide data on neural networks or specific psychological effects.

The analysis process consisted of a critical and comparative review of the collected information. Key patterns and relationships were identified between mindfulness and neural networks associated with creativity. These networks include the default mode network (DMN), the executive control network (ECN), and the salience network. Additionally, the emotional impacts of mindfulness were evaluated, including stress regulation and reduced rumination, which directly influence creative capacity. The

findings were organized into a conceptual framework detailing the effects of mindfulness on each phase of the creative process, from preparation to verification.

This study's validation and limitations were based on exclusively selecting research that met rigorous ethical standards and was approved by recognized ethics committees. However, we acknowledge inherent limitations, such as the heterogeneity of the methodologies used in the reviewed studies and the difficulty of establishing direct causal relationships between mindfulness and creativity.

Finally, the results were integrated into a theoretical-practical framework offering a comprehensive view of mindfulness's effects on creativity. This framework synthesizes theoretical findings and proposes recommendations for implementing mindfulness practices in educational, professional, and artistic settings. This practical approach aims to foster creativity at the individual and group levels, underscoring the importance of mindfulness as a valuable tool for innovation and problem-solving.

Table 1. *Key Studies Reviewed on Mindfulness and Creativity*

Author(s)	Year	Sample	Methodology	Key Findings
Zeidan et al.	2010	63 healthy adults	Experimental (brief mindfulness intervention vs control)	There is increased creative fluency and cognitive flexibility after brief mindfulness sessions.
Hölzel et al.	2011	Conceptual theoretical review	Integrative review	The study proposes neural mechanisms of mindfulness action: The DMN, ECN, and salience network.
García Campayo & Demarzo	2018	Theoretical summary of clinical and educational interventions	Literature review	Mindfulness improves sustained attention, regulates emotions, and enhances creativity in educational and clinical settings.
Kabat-Zinn	2003	Summary of MBSR interventions	Conceptual review	It establishes mindfulness as a stress reducer and a facilitator of open, creative mental states.
Ophir et al.	2009	Multitasking university students	Cognitive experimental	Mindfulness reduces attentional overload and facilitates concentration during creative processes.
Monsell	2003	Cognitive review	Theoretical review	Attentional shifts and task switching are optimized with mindfulness, impacting the preparation and incubation phases.
Davidson & Hölzel	2016	Neuroscientific summary	Neuroimaging review	Mindfulness regulates the DMN and ECN, fostering creative insight.
Vargas Delgado	2022	Applied and theoretical review	Narrative review	Mindfulness and transpersonal neurocommunication enhance creativity and conscious communication.

Source: *Elaborated by the authors.*

The collection and analysis of documentation and references was carried out between April and June of 2025. Microsoft Excel was used for data systematization, and Mendeley was used as a bibliographic manager for organizing and coding the selected references.

4. MINDFULNESS AND ITS IMPACT ON CREATIVE PREPARATION

The first phase of the creative process is preparation, which aims to generate a wide variety of initial ideas through divergent thinking. This type of thinking is characterized by flexibility and the ability to produce novel, diverse ideas that challenge conventional associations. Activating the default mode network (DMN), which is associated with spontaneous thought and imagination, is essential during this stage (Davidson & Hölzel, 2016). However, the executive control network (ECN), which regulates analytical thinking, can interfere with this creative flow by imposing limiting judgments or fostering excessive control (Doria, 2021).

Mindfulness has proven to be a fundamental tool for minimizing this interference and facilitating freer, more fluid exploration of ideas. Studies such as Hölzel et al. (2011) show that mindfulness practice modulates the interaction between these networks, reducing ECN activity and enhancing DMN activity. This balance enables ideas to flow freely without interruption from premature or self-critical judgments.

Furthermore, mindfulness cultivates an attitude of curiosity and acceptance toward emerging ideas, even those that may initially seem unconventional. Kabat-Zinn (2003) defines this attitude as essential for maintaining an open mind during creative processes because it fosters a mental environment in which ideas can develop without restrictions imposed by perfectionism or the fear of failure. Vargas Delgado (2022) corroborates this in his research on conscious neurocommunication, noting that mindfulness reduces emotional barriers to creativity, such as excessive self-criticism.

Mindfulness's influence on the preparation phase is reflected in its ability to improve the quality and diversity of generated ideas. Zeidan et al. (2010) demonstrated that brief mindfulness sessions can significantly increase creative fluency. This finding is supported by research such as that of García Campayo (2018), who emphasizes that mindfulness improves productivity and enhances the ability to conceive innovative workplace solutions.

Additionally, mindfulness optimizes the attentional resources necessary for this process. García Campayo (2018) classifies attention as either external, oriented toward environmental stimuli, or internal, focused on mental processes. During the preparation phase, internal attention plays a crucial role in facilitating connections between seemingly unrelated ideas. Training internal attention through mindfulness enables individuals to navigate their stream of thoughts more effectively and identify unusual connections that enrich the creative process (Doria, 2021).

Mindfulness practice aligns with contemporary demands of multitasking environments, which often fragment attention and hinder deep creative thinking. Ophir et al. (2009) point out that frequent multitasking impairs the ability to concentrate, a problem that can be mitigated through mindfulness. This approach is particularly relevant in contexts

where managing attention is key to solving complex problems and generating effective ideas (Irons et al., 2018).

Finally, from an emotional standpoint, mindfulness enables the effective management of the expectations and pressure that are inherent to creative processes. García Campayo and Demarzo (2015) emphasize that mindfulness promotes emotional regulation, helping individuals maintain a stable mental state while generating ideas. This stability prevents creative blocks and allows ideas to be fully explored before moving on to the next phase.

In short, mindfulness acts as a catalyst in the preparation phase, optimizing attentional resources and emotional regulation to generate diverse, high-quality initial ideas. By freeing the mind from self-imposed limitations and encouraging open exploration, mindfulness establishes itself as an essential tool for maximizing creative potential from the outset.

5. MINDFULNESS AND ITS ROLE IN CREATIVE INCUBATION

The incubation phase is a critical part of the creative process because it enables the brain to reorganize ideas generated during the preparation stage. During this phase, attention shifts from creative tasks, allowing mental connections to form without interference (Wallas, 1926). This mechanism, referred to as unconscious thought or subconscious reorganization, is crucial for generating novel ideas and innovative solutions (Hölzel et al., 2011; Chun et al., 2017).

Mindfulness plays a critical role in the incubation phase by facilitating active disengagement from creative problems. Rumination, a cognitive process characterized by repetitive thoughts focused on the same topics, is one of the biggest barriers to this phase because it often prevents ideas from flowing freely (Rizzolatti & Craighero, 2004). Studies such as those by García Campayo and Demarzo (2018) have shown that mindfulness practice significantly reduces rumination, freeing the mind to process ideas in the background.

Furthermore, mindfulness contributes to stress reduction, which can block creative reorganization. Stress reduction optimizes cognitive resources and allows the nervous system to enter a state of physiological balance, promoting neuronal plasticity and the integration of new mental connections (Porges, 2017; Davidson & Hölzel, 2016). This neurophysiological connection is particularly relevant during incubation, as a relaxed internal environment generates unexpected ideas and creative associations more easily.

Walking mindfulness, breath-focused meditation, and routine tasks performed with mindful awareness are especially effective tools in this phase. These activities allow the mind to distance itself from the problem while maintaining creative focus. According to Doria (2021), these practices foster a state of relaxed presence, which facilitates the subconscious and increases the likelihood of unexpected discoveries.

Neurocognitively, mindfulness modulates the salience network, helping the brain prioritize relevant connections, even during rest or disengagement. This mechanism

allows the most promising ideas to be efficiently organized and stored, preparing them to emerge during later phases of the creative process (Zeidan et al., 2010).

Furthermore, mindfulness optimizes cognitive resources and improves the quality of disengagement (Martínez-Lozano, 2020). In a world characterized by multitasking and constant interruptions, the ability to disconnect from creative problems has become a considerable challenge. Research by Irons et al. (2018), for example, shows that mindfulness significantly improves one's ability to manage the stress associated with these demands. This allows for more effective cognitive rest and deeper mental processing.

Additionally, mindfulness fosters acceptance of incubation periods, helping individuals avoid frustration from not finding immediate solutions. Kabat-Zinn (2003) emphasizes that patience and acceptance are essential components of mindfulness. Their integration into this phase is useful for maintaining a balanced, pressure-free approach to the creative process.

In the incubation phase, mindfulness reduces stress and rumination, promotes effective active disengagement, and creates a mental environment that favors the subconscious reorganization of ideas. Mindfulness optimizes this stage of the creative process by providing a balance between disengagement and relaxed presence. This balance increases the likelihood of unexpected discoveries, which are essential for innovation and the resolution of complex problems.

6. MINDFULNESS AND CREATIVE INSIGHT: ENHANCING THE “EUREKA” MOMENT

The insight phase is a crucial stage in the creative process where previously incubated ideas emerge as novel and relevant solutions. It is often described as the “Eureka” moment. This moment is characterized by the activation of the salience network, which acts as a cognitive filter identifying significant patterns within the stream of thought (Wallas, 1926). This mechanism allows unconscious creative connections to become conscious thoughts, ready to be implemented (Davidson & Hölzel, 2016; Chun et al., 2017).

Mindfulness plays an essential role in this phase by strengthening the salience network and increasing the brain's capacity to identify valuable ideas amidst a continuous flow of thoughts. Kabat-Zinn (2003) notes that mindfulness training improves awareness and mental clarity—fundamental skills for recognizing the significant connections underlying the "eureka" moment. Studies such as those by Zeidan et al. (2010) support this phenomenon. They found that mindfulness practices increase sensitivity to internal and external stimuli, thereby optimizing the detection of creative insights.

Furthermore, mindfulness improves individuals' ability to maintain a state of calm and focus, which is crucial during this stage. In a chaotic or stressful mental environment, relevant ideas may go unnoticed. Vargas Delgado (2022) emphasizes that mindfulness reduces cognitive distraction and promotes sustained attention, enabling participants to more easily recognize unexpected connections arising during creative flow.

Insight is also profoundly influenced by emotional balance. According to García Campayo and Demarzo (2015), mindfulness cultivates an accepting attitude toward the creative process. This helps individuals manage emotions that may arise during this phase, such as doubt or skepticism toward their own ideas. This emotional regulation facilitates the identification of insights and creates a mental environment where ideas can be valued without premature judgment.

From a neurocognitive perspective, mindfulness modulates the interaction between the default mode network (DMN) and the executive control network (ECN), with the salience network acting as a key mediator. During a moment of insight, these networks collaborate: the DMN generates creative connections while the ECN evaluates their relevance and feasibility in real time. Mindfulness optimizes this interaction, allowing the brain to prioritize the most promising ideas without unnecessary interruptions (Hölzel et al., 2011; Davidson & Hölzel, 2016).

Research also suggests that mindfulness can train the brain to be more receptive to moments of insight. Doria (2021) explores how transpersonal intelligence, a dimension related to mindfulness, enhances individuals' ability to perceive complex patterns and recognize profound connections between seemingly unrelated concepts. This ability, developed through continuous mindfulness practice, is especially valuable during the insight phase, when spontaneous creativity is essential.

In a world of information overload and multitasking, mindfulness helps filter out irrelevant stimuli competing with moments of insight. Studies such as those by Ophir et al. (2009) highlight the importance of reducing cognitive overload to boost creativity. In this context, mindfulness reduces external interference and trains the mind to recognize relevant patterns in distracting environments.

Mindfulness significantly enhances the insight phase by strengthening the salience network, promoting balance between key neural networks, and improving emotional regulation. These abilities increase the likelihood of experiencing moments of insight and ensure that emerging ideas are recognized and valued to their fullest potential. Thus, the role of mindfulness as an indispensable tool for catalyzing creativity in its most revealing and transformative phase is clear.

7. MINDFULNESS AND CREATIVE VERIFICATION: TOWARDS AN EFFECTIVE EVALUATION OF IDEAS

The verification phase occurs during the creative process when ideas generated in previous stages are evaluated, refined, and validated. This step requires a shift toward convergent thinking, which involves analyzing ideas with critical precision and selecting the most viable and suitable ones for implementation (Wallas, 1926). During this phase, the executive control network (ECN) plays a key role in facilitating logical analysis and decision-making. However, it must be balanced with emotional regulation to maximize effectiveness (Davidson & Hölzel, 2016; Chun et al., 2017).

Mindfulness significantly contributes to creative verification by optimizing the cognitive and emotional processes involved in this phase. In terms of attention, mindfulness

practice improves the ability to focus on the ideas being evaluated and reduces distractions that could compromise the analysis. According to Kabat-Zinn (2003), mindfulness training enables individuals to sustain focused attention, enabling them to critically evaluate each idea. This approach aligns with research, such as that of Zeidan et al. (2010), demonstrating how brief mindfulness training improves concentration and mental clarity during demanding cognitive tasks.

Emotional regulation is another key component of this stage because evaluating ideas can generate doubts, insecurities, or emotional conflicts, particularly in high-pressure situations. García Campayo and Demarzo (2015) emphasize that mindfulness cultivates acceptance and nonjudgment, enabling individuals to manage their emotions constructively during decision-making processes. This emotional balance enables objective evaluation of ideas and prevents emotional factors from interfering with the selection of the most effective solutions.

From a neurocognitive perspective, mindfulness regulates the interaction between the default mode network (DMN) and the executive control network (ECN). This allows for a smooth transition to convergent thinking while maintaining awareness of the creative connections established in previous phases. According to Hölzel et al. (2011), this integration capacity ensures that selected ideas are logically viable, innovative, and relevant in their application context.

Mindfulness optimizes the decision-making process by reducing cognitive biases that affect creative evaluation. Doria (2021) notes that transpersonal intelligence, facilitated by mindfulness, fosters a broader, less egocentric perspective. This allows for a more impartial, strategic evaluation of ideas. This approach is especially valuable in creative teams, where mindfulness can foster a more balanced collaborative dynamic and minimize interpersonal conflicts during idea selection.

In work and educational settings, creative evaluation often faces external pressures, such as tight deadlines or performance expectations. García Campayo (2018) emphasizes that mindfulness helps individuals manage these demands by reducing the stress associated with critical evaluation. By promoting effective emotional regulation, mindfulness enables evaluators to maintain the calmness and clarity necessary for sound decision-making, even in situations of high cognitive demand.

Finally, mindfulness fosters cognitive flexibility, which is crucial for reconsidering and adjusting ideas as needed during verification. According to Vargas Delgado (2020), the ability to adapt to new information or perspectives is an essential component of convergent thinking. By training the mind to accept change and new possibilities, mindfulness promotes a more dynamic and creative approach to evaluating ideas.

Mindfulness enhances the verification phase by improving attentional focus, regulating emotions, and reducing cognitive biases. These abilities enable a more objective and strategic evaluation of ideas, ensuring that the chosen solutions are viable and innovative. Thus, mindfulness optimizes creative evaluation and contributes to effective, adaptive decision-making in any environment.

8. DISCUSSION

The findings of this study reinforce the existing evidence on the positive impact of mindfulness on the creative process. This impact is seen in how mindfulness regulates the interaction of key neural networks and addresses the emotional barriers inherent in creativity. The analysis underscores the importance of mindfulness as a tool for enhancing essential cognitive skills for innovation and problem-solving, as well as for promoting well-being.

From a neurocognitive perspective, the results demonstrate that mindfulness balances divergent and convergent thinking networks. The default mode network (DMN) is predominantly activated during the idea generation and creative exploration phases (preparation and incubation), while the executive control network (ECN) facilitates the analytical evaluation and implementation of ideas during the illumination and verification phases. The salience network plays a critical role in regulating the transition between these networks, promoting adaptive interaction according to each phase's cognitive demands (García Campayo, 2018).

During the initial stages of the creative process, such as preparation, mindfulness reduces ECN activity, enabling more fluid divergent thinking, free from cognitive constraints. Studies such as that of Colzato et al. (2012) support this effect, documenting an increase in the quantity and quality of ideas generated after brief mindfulness sessions. During the incubation phase, mindfulness promotes cognitive and emotional disengagement, which are essential for subconscious idea reorganization. This disengagement allows innovative associations to emerge and is fostered by practices such as walking meditation.

The illumination phase, characterized by the "Eureka!" moment, is strengthened by the salience network, which filters relevant patterns from the stream of thought. Studies confirm that participants who practice mindfulness have a greater ability to detect significant insights. This ability is attributed to increased sensitivity in brain areas such as the right temporal lobe (Wallas, 1926). These findings suggest that mindfulness promotes spontaneous creativity and optimizes the mechanisms underlying the recognition of valuable ideas.

During the verification phase, mindfulness plays a crucial role by enhancing convergent thinking and enabling a more objective and effective evaluation of generated ideas. Mindfulness reduces emotional interference and promotes sustained attentional focus, which are essential elements in high-pressure contexts. Mindfulness practices improve the accuracy with which viable solutions are selected, thereby contributing to more effective decision-making.

In addition to the neurocognitive impact, mindfulness's emotional benefits are fundamental to explaining its influence on creativity. Mindfulness reduces stress and rumination and fosters acceptance and non-judgment. This creates an internal environment conducive to exploring and evaluating ideas. This is particularly relevant in contexts where emotional demands can inhibit creative performance, such as highly competitive work or educational settings.

The results of this study align with previous research positioning mindfulness as an enhancer of cognitive and emotional flexibility. However, this analysis goes further by integrating a multidimensional perspective that includes the specific phases of the creative process and the neurobiological and emotional mechanisms involved. This approach provides a more comprehensive understanding of how mindfulness can optimize creative performance at the individual, group, and organizational levels.

It should be noted, however, that while the findings are promising, there are methodological limitations that must be considered. The heterogeneity of the experimental designs of the reviewed studies makes it difficult to generalize some results. Furthermore, longitudinal research is necessary to evaluate the sustained effects of mindfulness on creativity and to explore its impact on specific populations and in different cultural contexts.

Overall, mindfulness emerges as an essential tool that optimizes creativity and contributes to the development of adaptive skills and overall well-being by regulating cognitive and emotional processes. This dual function makes it a central element in designing educational and professional strategies that foster innovation and the resolution of complex problems.

The findings of this review underscore mindfulness's role in modulating the neural networks and psychological processes associated with creativity. It promotes a functional balance between divergent and convergent thinking, facilitating the generation, reorganization, insight, and evaluation of ideas. However, it is important to acknowledge that the reviewed evidence has limitations that restrict the generalizability of these conclusions. Most of the analyzed studies have small sample sizes, short-term experimental designs, and heterogeneous measures of creativity, making direct comparison of results difficult (Zeidan et al., 2010; Hölzel et al., 2011).

Furthermore, this systematic narrative review is not a meta-analysis and does not provide an integrated quantitative estimate of the effects of mindfulness on creativity. While it provides a comprehensive theoretical and empirical framework, future research adopting longitudinal designs and meta-analyses is needed to clarify the magnitude and stability of these effects in different cultural and population contexts. Similarly, although the positive impact of mindfulness on creative processes is evident, questions remain about differential mechanisms depending on practice type, duration, and participant experience. These aspects should be explored in future research to optimize the implementation of mindfulness-based interventions in educational, organizational, and clinical settings.

9. CONCLUSIONS

Mindfulness is presented as a transformative practice that significantly impacts the creative process by acting at the neurocognitive and emotional levels. This work has enabled a deeper exploration of how mindfulness optimizes the phases of creativity—preparation, incubation, illumination, and verification—by modulating key neural networks and enhancing emotional regulation.

During the preparation phase, for example, mindfulness promotes divergent thinking by minimizing interference from executive control processes. This frees the mind from cognitive and emotional constraints, allowing for more open and flexible exploration of ideas. Mindfulness's capacity to diminish self-criticism and cultivate openness and curiosity is pivotal in stimulating the initial generation of novel and original ideas.

During the incubation phase, mindfulness plays a crucial role in promoting cognitive and emotional disengagement, enabling the subconscious reorganization of ideas. This often-underestimated stage is essential for the brain to process ideas nonlinearly, generating unexpected connections. By reducing stress and rumination, mindfulness creates an optimal mental environment for this creative reorganization and favors the emergence of innovative solutions.

During the illumination phase, mindfulness increases salience network activity, facilitating the identification of relevant patterns and recognition of insights. The ability to distinguish valuable ideas from a chaotic flow of thoughts is one of the most relevant aspects of mindfulness practice because it allows one to grasp the essence of a creative solution at the right moment.

Finally, during the verification phase, mindfulness improves convergent thinking, which is necessary for evaluating and refining generated ideas. Mindfulness's ability to promote sustained attention and regulate emotions associated with decision-making enables a more objective and effective analysis of proposed solutions. This approach ensures creative ideas can be efficiently implemented, even in high-pressure contexts.

At the neurocognitive level, this work emphasizes how mindfulness influences the relationship between the default mode network (DMN), the executive control network (ECN), and the salience network. This dynamic balance is essential for smoothly transitioning between divergent and convergent thinking, thereby maximizing individuals' creative capacity. Additionally, mindfulness's emotional benefits, such as stress reduction and developing an attitude of acceptance and non-judgment, help overcome psychological barriers that often hinder creative performance, such as fear of failure or rumination.

These findings have important practical implications. Integrating mindfulness into educational, work, and artistic environments can transform the way creativity is approached, promoting greater individual performance and more innovative group dynamics. Designing specific programs that adapt mindfulness practices to the needs of each phase of the creative process optimizes its potential in response to the demands of an increasingly competitive world.

While the results are promising, the identified methodological limitations, such as the heterogeneity of the reviewed studies, underscore the need for future research. More homogeneous longitudinal and experimental studies will allow for a deeper exploration of the sustained effects of mindfulness on creativity and an analysis of its impact on different populations and cultural contexts.

Mindfulness is an essential tool for enhancing creativity and an integral resource for human development. Its ability to balance cognitive and emotional processes makes it an indispensable element in the search for innovative solutions, adaptability to changing contexts, and overall well-being. This work establishes a foundation for new lines of research that explore the role of mindfulness in enhancing creative abilities, paving the way for its implementation in various fields of knowledge and professional practice.

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