Transactions on Comparative Education (2025)
Clausius Scientific Press, Canada

DOI: 10.23977/trance.2025.070216
ISSN 2523-5818 Vol. 7 Num. 2

The Role of Meditation in Enhancing Creativity across Educational Levels

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Keywords: Meditation, Creativity, Across Educational Levels

Abstract: This report critically examines the effects of meditation on creativity across primary, secondary, and higher education contexts. Drawing on literature and empirical studies, it explores how different meditation styles—such as movement-based Quadrato Motor Training (QMT) and sitting practices like One Minute Meditation (OMM)—impact creative development in age-specific ways. Findings suggest that meditation enhances creativity by improving cognitive focus, emotional regulation, and mental clarity. Younger children respond more positively to movement-based meditation, while adolescents and university students benefit more from introspective practices that support metacognitive awareness and abstract thinking. However, existing research lacks conceptual clarity, consistent methodology, and age-specific analysis. This report highlights the need for developmentally appropriate meditation programs in educational settings and calls for further longitudinal and neuroscientific studies to better understand the mechanisms linking meditation and creativity. By tailoring meditation practices to learners' cognitive and emotional capacities, educators can more effectively support creative potential across developmental stages.

1. Introduction

As one of the twenty-first-century skills, creativity is the capacity to create something new, which is both apt and valuable. In the education context, creativity is commonly described as a critical ability for learning and teaching and even needs to be infused into the education curriculum. In school, providing an appropriate environment for students to do creative activities could be important. To be specific, the students need a free atmosphere to share their own opinions and thoughts without pressure, even if making mistakes. In addition, the students would be more creative when they have enough opportunity to communicate with peers and experts.

Meditation is commonly regarded as a form of mental training that helps regulate emotional reactivity, reduce stress and anxiety, and enhance core cognitive abilities such as attention control and self-awareness. Horan identified neuropsychological links between meditation and creativity, classifying meditation into two main types: mindfulness meditation (MM) and concentrative meditation (CM). MM promotes creative thinking by enhancing sensitivity to external stimuli, increasing cognitive flexibility, and encouraging novelty-seeking. In contrast, CM fosters sustained focus and deep absorption—abilities essential for tackling complex creative tasks.

In educational settings, students often struggle with fragmented thoughts and emotional

distractions that hinder creative learning. Meditation can help cultivate a state of relaxed attention, which supports both focus and reflection—key components of effective learning. Recent studies advocate incorporating meditation into school curricula as a means to create conditions conducive to creative thinking. Importantly, the effects of meditation vary by age: younger children tend to benefit more from movement-based practices, while older students respond better to stillness-based techniques [1]. This highlights the need for age-appropriate meditation approaches to effectively support creativity in education.

This report aims to critically explore and compare the implications of meditation on creativity in primary, secondary, and higher education and try to find the age-appropriate meditation styles for each level of education. The main body of this report is divided into three parts, corresponding to different education levels, and the analysis and evaluation of real cases and literature are carried out accordingly. Finally, the implications of meditation on creativity at different levels of education will be critically discussed.

2. The Literature on the Effects of Meditation on Creativity

The selected studies by Zabelina, White [1], Justo, Mañas [2], and Ding, Tang [3] offer a multifaceted view of how meditation may influence creativity across different age groups and educational contexts. Together, they provide supportive evidence for the general positive effects of meditation on creativity, yet each study also raises methodological and theoretical considerations that are worth unpacking.

2.1. Emphasis on Age-General Effects

Zabelina, White [1] proposed that meditation may enhance creative and expressive capacity in both children and adults, regardless of variations in practice duration or instructional style. This suggests a universal baseline benefit of meditation for creativity, highlighting its broad applicability. However, the lack of differentiation in outcomes across age groups could also indicate that the measurement tools used were not sensitive enough to capture age-specific nuances. Thus, while the study supports the generalizability of meditation's benefits, it also underscores the importance of fine-tuned assessment tools and the need to match meditation styles to developmental needs.

2.2. School-Based Program Implementation

This study [3] is valuable for demonstrating the practical feasibility and effectiveness of delivering meditation in a school setting. The use of the Torrance Test of Creative Thinking (TTCT), a well-established instrument in creativity research, lends credibility to the findings. The significant improvement in creativity among adolescents after an after-school meditation program suggests that such interventions can be integrated into educational practice without major curricular disruption. However, the study does not explore which specific components of the meditation practice contributed most to the improvement, nor does it address long-term effects. Future studies could benefit from comparing in-class versus after-school delivery and examining retention over time.

2.3. Mechanisms Linking Mindfulness and Creativity

Ding and Tang [4] move beyond outcome evaluation and delve into the psychological mechanisms that may explain why meditation fosters creativity. Their finding that meditation enhances divergent thinking and emotional regulation aligns with theories that view creativity as both a cognitive and affective process. However, they also note the complexity of this relationship, which reflects the

broader literature's inconsistency in defining and measuring "mindfulness." This calls for more conceptual clarity and methodological consistency in future research. Their work also supports the potential of targeted mindfulness training to shape "habits of mind" conducive to creative performance—a valuable insight for instructional design.

The meditation holds promise as a cognitive-emotional enhancer of creativity across educational levels. They collectively support the idea that meditation:

- Can be flexibly adapted across age groups.
- Is feasible in formal and informal educational settings.
- Works through modifiable psychological pathways like attention and emotional regulation.

However, none of these studies thoroughly examine how meditation should be tailored to different developmental stages—a gap this study addresses. By comparing primary, secondary, and higher education contexts, and proposing age-appropriate meditation types, this study offers a needed developmental perspective that complements these prior works.

3. The Research on the Effects of Meditation on Creativity

3.1. In Primary and Secondary Education

Quadrato Motor Training (QMT) and One Minute Meditation (OMM) were two types of meditation-based training that students did in this research [4]. QMT is a 5-minute sensorimotor exercise where participants move across a square based on vocal instructions, with occasional teacher feedback. OMM is a brief, guided sitting meditation focusing on breath and internal sensations, also lasting 5 minutes. Both were group-based and led by a professional instructor. Creativity and spatial cognition were assessed using the Alternative Uses Test (AUT) and the Hidden Figure Test (HFT), respectively. AUT measured divergent thinking as an indicator of creativity.

3.1.1. Supporting Creativity in Primary and Secondary Students Through QMT and OMM Meditation (Result 1)

Meditation can help people detach from their regular interaction with space, and hence from their habitual self and thought patterns. So, after meditation training, the participants are thinking more smoothly and doing some things in a creative way rather than the original way.

QMT is a movement-based meditation, which means that it engages the motor system to activate and focus attention on the physical body. In this study, QMT improved students' internal and external spatial ability ($d = 0.48$) and creativity ($d = 1.21$ for fluency; $d = 1.08$ for flexibility) [4]. Also, it could implicate and improve cognitive and emotional functioning. Concentration and regular emotion will both contribute to the development of creativity.

The OMM is a sitting meditation practice in which practitioners are taught to divide their focus between their current physical state. Without movement, OMM is more about internal spatial representation and imagination. According to this study, all students improved their visuospatial abilities, which implies creativity.

3.1.2. Differential Effects of QMT and OMM: Primary Students Benefit More from QMT, Secondary Students from OMM (Result 2)

In terms of the association between OMM and creativity, secondary students benefited more than primary students because they have more developed abstract thinking, which is closely connected to creativity. OMM is more focused on the internal ability linked to abstract thinking, so the primary student can't gain all the benefits of OMM with less spatial skills. In this study, after OMM session, secondary students improved more than primary students in two creativity indexes ($d = 0.62$ for

fluency; d = 0.81 for flexibility) [4], which is in line with the literature.

QMT is more efficient in improving creativity for primary students. Although Lejeune, Catale [5] indicated that children around 10 years old could fully develop the executive functions that perceptuomotor learning, in this study [4], the primary student did well in QMT, which requires understanding and conducting meditative sensorimotor. The reason might be that primary students' performance is more challenging than secondary students, resulting in increased engagement in encouraging QMT sessions for primary students.

3.2. In Higher Education

This qualitative study investigated 20 undergraduates from a university's school of arts and design who were enrolled in the unit "Creative Environments" [6]. A qualified tutor guided weekly meditations, starting with awareness-of-breath and later introducing techniques like loving-kindness, body awareness, and open-awareness meditation. Students were encouraged to practice independently and keep a meditation diary. Qualitative data was gathered through student reflections on three questions: (1) What did you learn about yourself from meditating? (2) Has meditation affected your creative process? (3) Have you noticed positive or negative effects?

3.2.1. Dealing with Anxieties and Stress (Result 3)

Managed feelings, emotions, and anxieties, students frequently felt relieved of internal negativity, which allowed them to unleash their creative potential. According to the answer [6], Khan found meditation might lower his stress, and Kate noted negative stress plagued and limited her creativity. Also, Taylor realised meditation's effects as an indirect help for creativity by reducing mental barriers to creativity. This makes sense, considering that anxiety and stress may limit students' ability to think creatively, reduce risk-taking, and close their minds to creative ideas. To be specific, stress and anxiety might lead to negative emotions, which would hinder Creativity. Similarly, Fisher claims that meditation can assist students to be more creative by improving their well-being and relieving emotional barriers. So, meditation provides a better emotional environment to develop creativity.

3.2.2. Clarity of Mind (Result 4)

Clarity of mind and concentration could contribute to the development of creativity. In this research [6], Amy noted that she embraced meditation as a routine of mind to concentrate attention on her art tasks. Kelsey [6] also talked about how meditation helped to clarify her mind, allowing her to observe daily inspirations and creative ideas, which improved her creative process on art tasks. Distraction is a critical block to Bethany's creativity, which can make it difficult to progress with a project and make intelligent, creative decisions. Morgan agreed that meditation assisted in the removal of some creative blockages by focusing attention on creative aims rather than on the everyday distractions. These points support that creativity entails more than just coming up with new ideas; it also necessitates focusing the mind on putting those ideas into action.

3.2.3. Managing the "Voice of Judgment (VOJ)" (Result 5)

Meditation assisted students in identifying their "VOJ" and detaching from it, which improved their creativity. Based on this study [6], students agreed that internal narration impedes creativity via the awareness that can hold a person back. Additionally, Hassan realised that meditation was effective not just for removing unnecessary thoughts, but also for observing and managing the mind, which allowed him to be more creative. The above opinions support the findings of Nelson and Stolterman that negative internal narratives may impede the creativity of art and design. Meditation could build

a safe environment for students to do creative activities without judgment.

4. Discussion

4.1. Meditation as a Supportive Environment for Creativity: Positive and Promising Associations

Research evidence indicates that meditation improves concentration, reduces anxiety of being judged, and increases open-minded thinking while diminishing unpleasant self-conscious thinking. These points connect to essential characteristics of creativity, such as relaxation and concentration, risk-taking and less judgment, and curiosity. According to *results 3, 4 and 5*, meditation seems to clean, manage, and protect the mind to support the creative process.

4.2. The Meditation–Creativity Link: Promising but Contested

Lebuda, Zabelina conducted a multilevel meta-analysis of 89 correlations collected from 20 samples in research published between 1977 and 2015 to investigate the association between meditation and creativity. They found a statistically significant, but rather weak correlation (r =.22) between these two categories. Meditation training could avoid mind-wandering and improve imagination and shifting attention, which support creativity. Therefore, meditation can't develop creativity directly.

The evidence for a relationship between meditation and creativity is uncertain, and it might differ depending on the sort of meditation used. To be specific, Focused Attention meditation (FA) and Open Monitoring Meditation (OM) may induce two thinking patterns. FA could develop convergent thinking, while OM may support divergent thinking. Whether either of these thinking patterns would enhance creativity is ambiguous. However, inconsistent classifications of meditation in different studies make it difficult to compare which type of meditation is better.

4.3. Theoretical Analysis: Meditation, the Default Mode Network, and Creative Cognition

Recent neuroscientific research has highlighted the role of the Default Mode Network (DMN) in supporting creative ideation, particularly in tasks that involve divergent thinking, imagination, and internal simulation. Meditation, especially open-monitoring and mindfulness practices, has been shown to modulate the activity of the DMN, potentially leading to enhanced associative thinking and novel idea generation. By downregulating habitual cognitive interference and fostering cognitive flexibility, meditation may allow for freer access to unconscious or latent ideas that underpin creative insight.

Additionally, meditation contributes to improved emotional regulation and metacognitive awareness, both of which are foundational for what is often termed an "open-minded cognitive style." This mode of thinking allows individuals to tolerate ambiguity, manage frustration during ideation, and sustain attention during exploration of multiple perspectives—all of which are essential attributes of creativity. Thus, while the exact mechanisms remain under investigation, it is increasingly plausible that meditation serves as both a cognitive enhancer and affective stabilizer, creating internal conditions conducive to creative performance.

4.4. Age-Sensitive Meditation Practices: Aligning Developmental Needs with Educational Design

The relationship between meditation and creativity is shaped by developmental differences,

making it crucial for educators to design age-appropriate meditation programs that reflect students' cognitive maturity, emotional regulation, and attentional control. Research highlights that younger children benefit more from embodied, movement-based practices such as QMT, which supports sensorimotor integration and enhances creative fluency. These practices cater to the needs of early learners who may struggle with abstract, stillness-based techniques due to limited executive functioning and sustained attention.

In contrast, adolescents and university students—equipped with greater cognitive capacity and self-regulation—respond better to traditional mindfulness or open-monitoring meditation. These modalities support more sophisticated creative processes, such as insight generation, problem restructuring, and conceptual expansion, by fostering metacognitive awareness and nonjudgmental observation.

Effective implementation requires aligning meditative practices with students' developmental readiness. Cognitive Load Theory offers a valuable lens for this alignment, emphasizing the need to balance instructional complexity with working memory limits. For younger learners, brief, multisensory sessions with clear structure can reduce extraneous load and sustain engagement. For older students, longer and more introspective practices may deepen reflective thinking and emotional resilience—both essential for creativity.

Ultimately, meditation should be integrated into a broader pedagogical framework rather than treated as an isolated wellness tool. Tailoring interventions by age not only enhances cognitive receptivity but also addresses the emotional and motivational dimensions of creative performance. Longitudinal research is needed to explore how these tailored practices influence creativity across developmental stages and educational contexts.

5. Conclusion

This report assessed the implications of meditation on student creativity across different educational stages. While current literature on the meditation-creativity link remains limited and lacks a unified theoretical framework, findings consistently suggest that meditation enhances creativity by supporting cognitive clarity, emotional regulation, and focused attention. However, age-related differences in effectiveness—particularly between primary, secondary, and higher education—require further empirical validation.

Importantly, this study underscores the need for educators to consider developmental readiness and emotional maturity when integrating meditation practices. Future research should employ mixed-method approaches, including neurocognitive measures, to better understand how various forms of meditation foster divergent thinking, emotional resilience, and creative confidence. Establishing age-appropriate meditation strategies and instructional models could significantly enrich educational practices and learner outcomes.

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