

# Mindfulness and Nature: Impacts with Elementary Children in a Montessori School

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## Background & Literature Review

Humanity is confronting intensifying health, social, and environmental problems, and the wellness of individuals, communities, nations, and ultimately the Earth are all suffering. Children's and teens' lives have also become more stressful, scheduled and busy, more dominated by electronic media, with correspondingly less time spent outdoors in nature (Bannirchelvam, Bell, & Costello, 2017; Kabat-Zinn, 2013; Kellert, 2018; Khan, 2015; Louv, 2016; Sampson, 2015; Selhub & Logan, 2012; Willard, 2016; Williams, 2017). Simultaneously, research is verifying the abundant health benefits of mindfulness, nature, and in limited studies the combination of the two, especially for children.

*"Mindfulness is awareness, cultivated by paying attention in a sustained and particular way: on purpose, in the present moment, and nonjudgmentally."* (Kabat-Zinn, 2012, p. 1)

Some of the notable benefits of mindfulness include improvements in "students' working memory, attention, academic skills, social skills, emotional regulation, self-esteem, and mood" (Kielty, Gilligan, Staton, & Curtis, 2017, p. 317); as well as promoting a growth mindset in students, decreasing stress, and improving student behavior (Bannirchelvam et al., 2017; Cheek, Abrams, Lipschitz, Vago, & Nakamura, 2017; Harpin, Rossi, Kim, & Swanson, 2016).

*"Nature presents the young with something so much greater than they are; it offers an environment where they can easily contemplate infinity and eternity. . . Immersion in the natural environment cuts to the chase, exposes the young directly and immediately to the very elements from which humans evolved: earth, water, air, and other living kin, large and small."* (Louv, 2008, p. 97)

Numerous scientific studies reveal similar positive impacts of nature on "our perception of stress, our mental state, our immunity, our happiness, and our resiliency" (Louv, 2008; Selhub & Logan, 2012, p. 33; Williams, 2017). They report decreases in blood pressure and the stress hormone cortisol, increases in attention levels and other executive functions, and even lower levels of disease and death from proximity to and walks in natural spaces (Williams, 2017).



Two different creek settings used for MBLAs



## Research Questions

The goal of my study was to explore more explicitly the qualitative impacts of the physical environment or setting of mindfulness-based activities, identified as an important factor in both students' "experiences and engagement" in and successful implementation of a mindfulness-based program (Cheek et al., 2017, p.2568; Dariotis et al., 2017). Specifically, my research attempted to answer these questions:

- 1) What are the impacts of mindfulness-based lessons and activities (MBLAs) conducted in an outdoor natural setting with elementary school children?
- 2) How do the MBLAs change classroom behaviors, affect the overall classroom community or culture, individual students' self-regulation and prosocial behaviors?
- 3) How do the MBLAs conducted in an outdoor natural setting affect children's environmental ethics and relationship to nature?



Two larger areas used for mindful games and movements



## Methods

This research was a qualitative case study which sought to gather information from the perspectives of students and teachers to understand more about the context of the MBLAs, an outdoor natural environment, as well as impacts or consequences of combining mindfulness and nature.

### Participants

This research study was conducted with two elementary classes at a private Montessori school in the south-central United States. There were three teacher participants. Class 1 had 22 participants in 2<sup>nd</sup> & 3<sup>rd</sup> grades (7-9 years old), with six target students chosen by the teacher. Class 2 had six participants in 4<sup>th</sup>-6<sup>th</sup> grades (9-12 years old), with three target students.

### Mindfulness-based Program

The curriculum for the MBLAs used consisted of 17 lessons with activities, divided into four units: *Getting Focused, Sharpening Your Senses, Perspective and Attitude, & Taking Action Mindfully*. All mindfulness sessions were conducted outside in natural settings, offered typically twice a week, during regular class time, in 30-minute to hour-long sessions, over the course of nine weeks (spanning 4 months), with one follow-up booster session.

### Data Collection

Triangulation of Data (Rossman & Rallis, 2017):

- Combination of Quantitative and Qualitative data: Student & teacher pre- & post-project questionnaires
- Qualitative data: Student journals, Teacher interviews, Whole class ethnographic interviews, Researcher's journal

### Data Analysis

The constant comparative method was used to analyze all data (Glaser & Strauss, 1967). This interdisciplinary study required interpretation through a multifarious theoretical framework; hence the pairing of Montessori and systems-based wellness theory, which both view humans as integrated, multidimensional, & full of potential.

### Montessori Education (Lillard, 2011; Montessori, 2007)

- Appreciation for: educating the whole child & "the human potential," *Cosmic Education*, & connecting with nature
- Encourages children's tendencies for empathy & compassion (*Grace & Courtesy*)
- Other mindfulness-like elements: Peace education, silence games, *Walking the Line*, prolonged concentration, & community meetings

### Systems-based Wellness Theory (Albrecht, 2014; Roscoe, 2009)

- "An integrated method of functioning which is oriented toward maximizing the potential of which the individual is capable. . . It also involves the integration of the whole being of the person—his body, mind, and his spirit . . ." (Dunn, as cited in Albrecht, 2014, p. 23)
- Acknowledges six dimensions: physical, emotional, social, cognitive, spiritual, & environmental
- Dimensions are not functionally independent—each affect others & complete wellness depends on interaction & balance

### Validity

Several recommended strategies of credible qualitative research were used to help ensure the validity of this research project: triangulation of sources of information; consultation with a critical advisor, community of practice of MED students, as well as others; researcher reflexivity; and member checking (repeating back main ideas from the researcher and teachers and asking clarifying questions if needed).

## Findings & Discussion

The impacts of doing MBLAs in a natural setting with elementary children were predominantly positive, though they affected individuals and the classes in diverse ways and to varying degrees.

Major themes from data analysis:

- *Changing the Conversation* (a change in not just the vocabulary used and subjects discussed, but also the structure of speaking and listening)
- *Raising Awareness, Cultivating Consciousness* (increased knowledge, understanding, concern, interest, or collective thoughts and feelings—Dictionary.com, 2019)
- *Taking Mindful Action—Nurturing Peaceful Relationships* (changes in awareness, understanding, and an expanded toolbox of strategies lead to observed changes in experiences and behaviors)

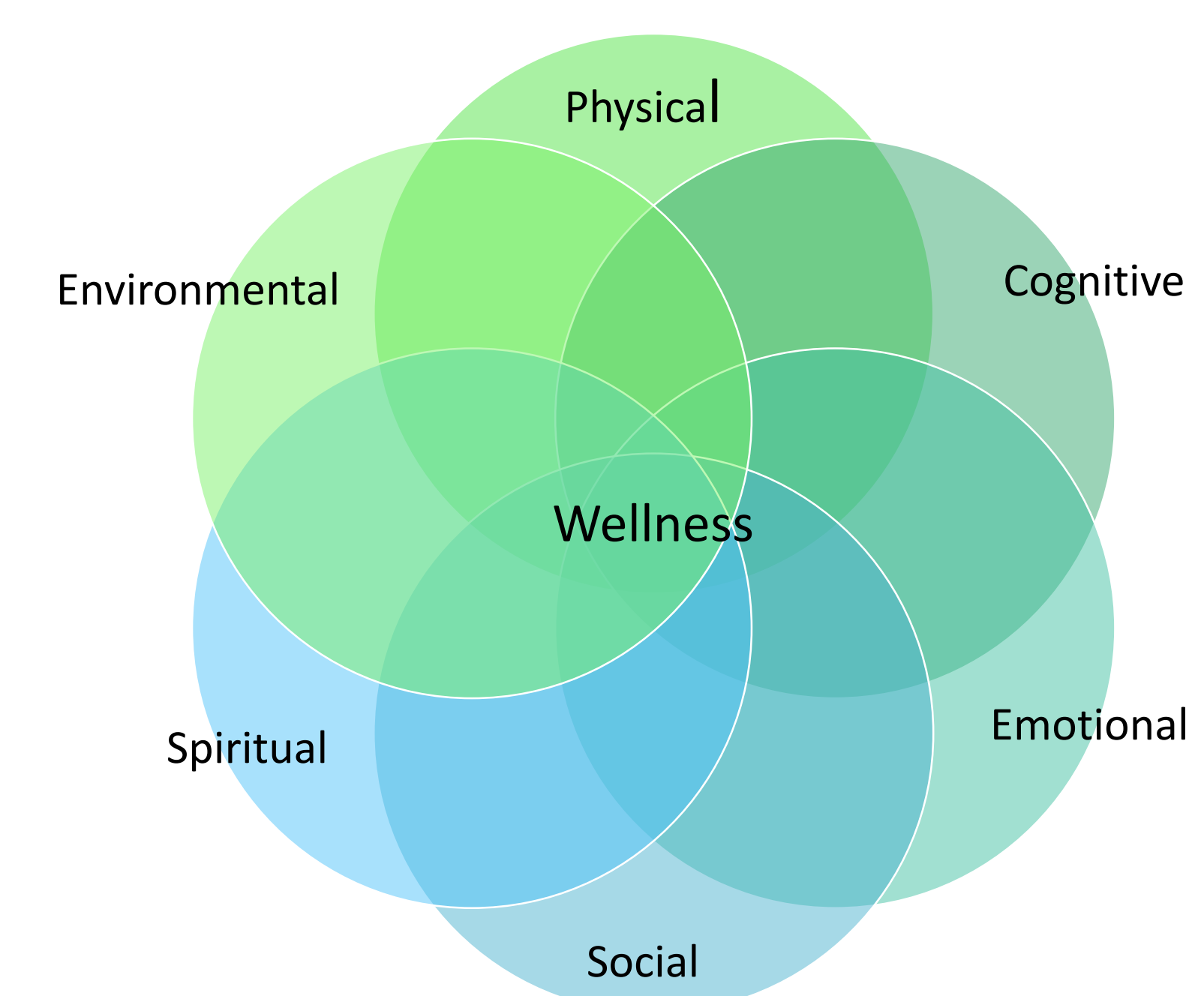
Participation in MBLAs affected levels of self, others, and nature:

- Individual benefits included increased positive feelings & awareness of own bodies (how their brains function & how thoughts, emotions, breathing, & movements can affect them)
- Both classes described improved sense of community (nicer, less conflicts, & people being more mindful)
- Data also verified changes in relationships with, treatment of, & experiences of nature

MBLAs built on foundations (personal self-care, social skills, and appreciation and care for the environment) that most students already had from coming up in the Montessori school.

### Limitations

There are several limitations to this study. This study took place at a private Montessori school in the south-central U.S., with a small sample size from only two classrooms of elementary students, ages seven to twelve, in mixed age-group classes. In addition, there were multiple staff changes in both classrooms over the duration of this research project. Thus, the findings from this study may not be generalized to other age groups, nor to traditional classroom settings (or even to other Montessori classrooms, as there is a wide variety of Montessori schools).



The six dimensions of a systems-based Wellness Theory



Samples of Student Journal Entries

## Implications

To solve the growing list of problems in our modern world, we need to work on the root causes—the thought patterns, emotions, and values that influence our behaviors and actions towards ourselves, others, and the environment.

This research reinforced that mindfulness and nature both affect those root causes in positive ways, increasing wellness in all six dimensions.

There is thus impetus for further research and implementation of mindfulness-based programs combined with nature outdoors in a variety of schools (traditional public, additional Montessori, & other private schools) with children of a diverse range of ages and prior environmental ethics levels. Based on the relevance of this type of research to systems-based wellness theory, I urge future researchers to incorporate the best available methods, qualitative and quantitative, to measure all six dimensions of wellness, as well as possibly a holistic total wellness score, in their studies.

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### Contact:

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