

# INVESTIGATING THE RELATION BETWEEN EMOTIONAL AND ECOLOGICAL INTELLIGENCE BY CONSTRUCTION OF RELATED QUESTIONNAIRES ADAPTED IN PRESCHOOL-AGED CHILDREN

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**Abstract:** This paper examines the relationship between emotional and ecological intelligence in preschool-aged children. The study investigates their interrelation and the influence of factors like age and gender. Utilizing tailored questionnaires data were analyzed using SPSS software. Results revealed that girls exhibited higher empathy and ecological sensitivity, with a positive correlation between the two types of intelligence. The findings emphasize the importance of early education in nurturing emotional and ecological skills and suggest designing programs for holistic development and sustainable behaviours.

**Key words:** emotional intelligence, ecological intelligence, preschool-aged children, education, gender

## 1. INTRODUCTION

The concept of intelligence has evolved through theoretical approaches. Early definitions by Binet introduced IQ as a measure of intelligence, while Gardner expanded the framework to include interpersonal and naturalistic intelligences. Emotional intelligence (EI) focuses on the perception, understanding, and management of emotions, whereas ecological intelligence (EcoI) considers awareness and sensitivity towards environmental impacts [1].

This study emphasizes the role of preschool education in fostering both emotional and ecological intelligence, highlighting early childhood as a critical period for embedding values and skills that promote emotional understanding and environmental awareness. Building on the interconnection between these intelligences, the research investigates their development and mutual reinforcement, providing a basis for sustainable and socially responsible behaviours in later life.

## 2. SECTION

### 2.1. Emotional Intelligence

Emotional intelligence involves the ability to perceive, understand, and regulate emotions effectively. Salovey and Mayer's foundational model outlined four components: perception of emotions, emotional facilitation, understanding emotions, and emotional management. Daniel Goleman expanded this concept by integrating social skills and practical applications, categorizing emotional intelligence into five dimensions: self-awareness, self-regulation, motivation, empathy, and social skills. These components are crucial for effective communication, conflict resolution, and leadership [2].

#### 2.1.1. Ecological Intelligence

Ecological intelligence pertains to the cognitive, behavioral, and systemic understanding of human-environment interactions. Daniel Goleman [3] proposed three dimensions of ecological intelligence: cognitive awareness of environmental impact, empathetic engagement with natural systems, and behavioral adaptation for sustainability. This intelligence is not solely individual but

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collective, requiring cooperation to address global environmental challenges effectively. Integrating ecological intelligence into early education can cultivate habits such as conservation, recycling, and mindfulness towards nature [4].

### **3. INTER-RELATIONSHIP BETWEEN EMOTIONAL AND ECOLOGICAL INTELLIGENCE**

Emotional and ecological intelligences share empathy as a core component. Empathy enables individuals to connect emotionally with others and extend this understanding to the environment. Research indicates that individuals with higher emotional intelligence are more likely to exhibit ecological sensitivity, adopting behaviors that reduce environmental harm [5]. This study supports the hypothesis that fostering emotional intelligence in early childhood can enhance ecological intelligence, creating a foundation for sustainable living. For instance, emotionally intelligent children may be more inclined to understand the consequences of pollution and adapt behaviors that align with environmental conservation [6].

### **4. GENDER AND AGE DIFFERENCES**

#### **4.1. Gender**

Studies have consistently shown gender differences in emotional and ecological intelligence. Girls tend to score higher in empathy and emotional regulation, which correlate with ecological sensitivity [7]. Socialization patterns often encourage girls to engage in nurturing and caring roles, fostering a deeper connection with their surroundings. Boys, while typically more focused on problem-solving, may approach environmental issues through technical or analytical perspectives, such as exploring innovative solutions to sustainability challenges [8].

#### **4.1.1. Age**

The developmental trajectory of both emotional and ecological intelligence, reveals that age plays a pivotal role. Preschool-aged children begin to demonstrate fundamental emotional and ecological awareness through observation and interaction. As cognitive abilities mature, their capacity for abstract thinking and empathy grows, enabling more sophisticated understandings of complex environmental systems and social relationships. Educational programs tailored to these developmental stages can significantly enhance their emotional and ecological intelligence. [9].

### **5. METHODOLOGY**

This study adopted a quantitative approach to investigate the relationship between emotional and ecological intelligence in preschool-aged children. A custom-designed questionnaire was employed, capturing dimensions of emotional and ecological intelligence, through age-appropriate items. The questionnaires developed by the researchers for this study was specifically designed to assess emotional and ecological intelligence in preschool-aged children. It featured a narrative approach, offering five response options for each question. Unlike traditional scales that rely solely on agreement or disagreement, this format captured specific reactions, behaviors, and thoughts, emphasizing the qualitative dimension of responses. This made the tool particularly suited for studying emotional and environmental intelligence, where the depth of understanding and expression is crucial. Each question was paired with a corresponding image to help children associate the query with a visual context, ensuring clarity and engagement. Concerning emotional intelligence, eight questions aimed to highlight or exclude a particular stance, focusing on dimensions such as self-awareness, self-

management, motivation, empathy, and social skills. The remaining eight questions targeted the dimensions of ecological intelligence—cognitive, behavioral, social, and technological—evaluating environmental sensitivities with queries about resource conservation and environmental care. Each response reflected levels of environmental responsibility and critical thinking. The tool underwent a pilot phase to confirm its validity and was structured to include thematic sections targeting empathy, emotional regulation, environmental awareness, and sustainable behaviors, enabling a holistic analysis of the collected data. Concerning the participants, the sample of this study consists of preschool-aged children—4 and 6 years old—who attend kindergartens in Thessaloniki. The total number of children was 60, of whom 29 were boys and 31 were girls. The participants were selected through purposive sampling, ensuring gender balance. Data collection occurred in a controlled environment to ensure the comfort and engagement of participants. Responses were scored and analyzed using SPSS software, employing descriptive statistics, t-tests, and correlation analyses to explore patterns and relationships. Ethical considerations were paramount, with informed consent obtained from parents and guardians [5].

## 6. RESULTS AND CONCLUSIONS

The analysis revealed a statistically significant positive correlation between emotional and ecological intelligence ( $r = 0.72$ ,  $p < 0.01$ ). Girls consistently scored higher in both emotional and ecological intelligence dimensions, particularly in empathy and ecological sensitivity. Age was another significant factor; older preschoolers (ages 4–6) demonstrated greater cognitive and emotional capacities, aligning with higher EcoI scores ( $t=2.003$ ,  $p<0.05$ ). The findings indicate that children exposed to structured educational interventions displayed enhanced ecological awareness and emotional skills compared to their peers.

Moreover, the data suggested that children's active engagement in hands-on activities, such as gardening or recycling projects, positively impacted their understanding of environmental issues. Similarly, storytelling sessions that emphasized empathy and community responsibility enhanced emotional and ecological intelligence. These interventions underscore the role of experiential learning in fostering holistic development [3], [5].

The study underscores the interdependence of emotional and ecological intelligences, advocating for integrative educational frameworks in preschool settings. Early interventions that incorporate storytelling, role-playing, and hands-on environmental activities can effectively nurture these intelligences.

The results suggest that fostering emotional intelligence not only enhances interpersonal relationships but also promotes sustainable behaviors, highlighting the role of empathy in bridging social and environmental consciousness. Programs emphasizing collaboration, emotional literacy, and ecological awareness can prepare children to navigate complex social and environmental challenges in the future. This highlights the necessity of embedding these practices in curricula worldwide to ensure that children develop both emotional resilience and a strong commitment to sustainability [6].

## 7. FUTURE RESEARCH

Further research could explore the intercultural dimensions of emotional and ecological intelligence examining how cultural norms and educational practices influence their development. This perspective

could provide insights into how different societies value and promote these intelligences [7]. Longitudinal studies could investigate the long-term impact of early interventions on children's sustainable behaviours. By tracking development over time, such research could identify effective strategies for fostering lifelong ecological and emotional awareness. Expanding the scope to include diverse populations and educational settings would offer a more comprehensive understanding of these intelligences. Research involving children from various socioeconomic and cultural backgrounds could reveal the influence of context on their development [10]. The integrating technology, such as AI tools, in educational programs to enhance both EI and EcoI presents an innovative avenue. Exploring how digital resources can support personalized and engaging learning experiences for children would be valuable [8]. Finally, the most important thing is that from two originals questionnaires created by the researchers we had important findings. This give us the impetus to use them in a larger sample to see their reliability but also to reinforce the idea that there are tools that examine these two dimensions of intelligence in the scientific field.

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