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SEASONS OF LEARNING: DESIGNING A CLIMATE-RESPONSIVE, EMOTION-AWARE SYLLABUS FOR SECONDARY AND HIGHER EDUCATION

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Abstract
The rising impact of climate change is affecting our physical health and disrupting emotional and mental well-being, especially among the younger generation. Despite our growing awareness of environmental concerns, including heat waves, extreme weather, and seasonal changes, we frequently seek short-term rather than long-term solutions because of our hectic lives. Students today deal with particular seasonal difficulties. Education must change to equip kids with emotional resilience and environmental knowledge as these climate-related stressors increase. The dynamic model in this research is called "Seasons of Learning: Designing a Climate-Responsive, Emotion-Aware Syllabus for Secondary and Higher Education." The curriculum incorporates emotional literacy, mental health, climate change awareness, and eco-consciousness into weekly classroom activities. It aligns with South India's four main seasons: summer, monsoon, autumn, and winter. Every season emphasises a different emotional topic and provides education on mental well-being. Tools like music therapy, yoga, Field games in the summer, and technology-based support systems in the monsoon are incorporated to match seasonal moods and stress levels, including well-being surveys all year long. When used carefully, this strategy can produce emotionally intelligent, climate-aware students who develop into responsible, environmentally conscious adults. This syllabus may help ensure that everyone has a healthier and more sustainable future by fostering minds that are in tune with the rhythm of nature.
Keywords: Climate Change, Summer, Autumn, Monsoon, Winter, Emotional well-being

INTRODUCTION

Students' mental and emotional well-being has emerged as a central concern in 21st-century education, particularly in regions where climatic, cultural, and academic pressures converge. Students in South India deal with the psychological effects of seasonal changes and academic stress, which have an impact on motivation, mood, and focus. Even though these aspects are becoming more widely acknowledged, traditional curricula hardly ever take into account children' emotional rhythms or incorporate environmental awareness into their design. This study introduces the concept of a "Seasons of Learning: Climate-Responsive, Emotion-Aware Syllabus", a pedagogical innovation that aligns educational delivery with seasonal emotional patterns. The framework operates on the principle that students' mental

states vary with seasonal changes restlessness in summer, introspection in winter, emotional fluidity during monsoon, and goal-setting reflection in autumn and these variations demand responsive, adaptable teaching methods. Each seasonal module within the syllabus is built around customised games, classroom activities, and digital interventions that support emotional regulation, resilience, and social connection. For example, gratitude-based activities promote peace and introspection in the winter, while active outdoor games relieve energy and lessen academic burnout in the summer. While the fall module promotes goal-setting and identity creation through journaling and leadership exercises, the monsoon phase has eco-projects and art-based mood trackers. To evaluate the impact of this course, 200 students from South Indian secondary and university institutions participated in a mixed-method experimental design study. Focus groups, reflective journals, and seasonal mood trackers are used to get qualitative data, while emotional intelligence tests and well-being indices are used to gather quantitative data. Participants are divided into four phases of the seasonal intervention. The study also incorporates environmental data (rainfall, temperature) and investigates how it relates to students' self-reported moods. The data will be analysed using thematic coding of qualitative narratives to extract emotional themes, correlation analysis to link climate factors with mood patterns, and ANOVA to compare well-being between seasons. This study aims to reinterpret well-being education as an essential, responsive aspect of daily learning rather than a stand-alone element by coordinating emotional growth with seasonal awareness. The goal is to create climate-responsive classrooms where students learn academic content and develop emotional intelligence, adaptability, and mental resilience across changing seasons.

OBJECTIVES

- To design a dynamic model syllabus called "Seasons of Learning," that incorporates emotional literacy, mental health, climate change awareness, and eco-consciousness into weekly classroom activities
- To align the curriculum with South India's four main seasons (summer, monsoon, autumn, and winter), ensuring each season emphasises a different climate awareness topic and provides mental well-being education.
- To equip students with emotional resilience and environmental knowledge to address increasing climate-related stressors
- To cultivate students' minds that are in tune with the cycle of nature to contribute to a healthier and more sustainable future.

HYPOTHESIS

The "Seasons of Learning" approach, which incorporates tools like music therapy, yoga, sports and technology-based support along with climate responsiveness and emotional awareness into a curriculum that is in line with seasonal changes, will result in emotionally intelligent and climate-aware students who grow up to be responsible, environmentally conscious adults and help create a healthier, more sustainable future.

RESEARCH QUESTIONS

- How does integrating emotional literacy, mental health, climate change awareness, and eco-consciousness into weekly classroom activities affect students' overall well-being and climate awareness?

- How effectively does the "Seasons of Learning" syllabus equip students with emotional resilience and environmental knowledge in the face of climate-related stressors?
- Can fostering minds that are "in tune with the rhythm of nature" through this syllabus effectively promote a healthier and more sustainable future for individuals and the environment?

REVIEW OF LITERATURE

Hedonic, physical health, and generic happiness are the four main components of well-being that Zhang et al. (2024) identified through a thorough scoping analysis of 69 well-being scales from 107 studies completed between 2003 and 2022. Their '4 + N' approach, which takes into account context-specific elements like sexual, economical, or spiritual well-being, adds flexibility. They did point out, nevertheless, that current scales frequently include conceptual ambiguity and validation bias that is Western-centric. This demonstrates the urgent need for frameworks that are both culturally sensitive and environmentally sensitive, reflecting a range of emotional experiences. This requirement is closely related to the objectives of the "Seasons of Learning: Climate-Responsive, Emotion-Aware Syllabus." Building on the call for emotional inclusivity, Ji and Kadri (2025) systematically reviewed 35 studies between 2020 and 2024, focusing on emotional awareness as a key factor in resilience and coping. They identified the importance of emotional regulation, especially in trauma, caregiving, and among marginalised communities, further pointing out the underrepresentation of non-Western, secondary populations and the absence of longitudinal data. Their findings underscore the importance of emotion-aware and culturally adapted educational interventions—further validating the integrative and seasonal approach of the Seasons of Learning syllabus, which prioritises sustained emotional education across diverse student groups. Further complementing this perspective, Ramos-Monsivais et al. (2024) reviewed the effects of mindfulness on university students' mental health, academic performance, and prosocial traits. They reported benefits such as improved emotional regulation, creativity, resilience, and academic outcomes. However, inconsistencies in mindfulness methodologies, unclear intervention durations, and limited geographical scope remain as gaps. The Climate-Responsive, Emotion-Aware Syllabus addresses these limitations by embedding structured, long-term mindfulness strategies into climate-conscious education, making emotional training more coherent and context-specific. Nazari et al. (2023) examined web-based mental health literacy (MHL) interventions among youth through a systematic review and meta-analysis. While factual knowledge improved, deeper attitude shifts and behavioural intentions like stigma reduction or help-seeking remained stagnant. These interventions often lacked developmental, cultural, and geographic tailoring—shortcomings that the Seasons of Learning syllabus directly overcomes by integrating emotionally nuanced and age-appropriate content into educational cycles, thus fostering more profound emotional growth over time. In parallel, Moreira-Choez et al. (2024) stressed the role of emotional education and emotional intelligence (EI) in graduate student well-being. Their findings link EI with better stress management and interpersonal relationships. However, research in this domain lacks longitudinal depth and gender-based analysis. The Climate-Responsive, Emotion-Aware Syllabus meets these challenges by offering tailored, adaptive emotional training embedded within academic contexts, enabling longitudinal EI development across various disciplines and demographics. Echoing similar gaps, Takaoka and Sharma (2024) examined mental health research in computing education and revealed a significant dearth of theory-driven and inclusive interventions. High levels of anxiety, impostor syndrome, and isolation were prevalent among CS students, while most

studies lacked standardised frameworks and longitudinal tracking. The Seasons of Learning syllabus, with its embedded, theory-informed modules, offers a sustainable solution by integrating emotional well-being directly into computing curricula, ensuring emotional resilience alongside technical training. Cao et al. (2021) further highlighted the growing concern for international students' mental health through a bibliometric review of MHIS research from 1957 to 2020. Barriers such as stigma, cultural misunderstanding, and under-utilisation of mental health services persist due to a lack of pedagogically grounded interventions. The Climate-Responsive, Emotion-Aware Syllabus addresses this by embedding emotional education into culturally inclusive curricula, reducing stigma, and supporting international students through sustained, linguistically sensitive engagement. Finally, Baghian et al. (2019) systematically reviewed global school-based mental and social health promotion programmes. Their tripartite evaluation framework—structure, process, and outcomes—provides a useful lens but is limited to children and excludes university-level applications. The Learning Seasons: Emotion-Aware and Climate-Responsive By integrating process-based implementation, outcome evaluation using a seasonal, cyclical model, and structural planning, Syllabus builds upon this framework and adapts it for higher education. This method guarantees that social well-being, climate responsiveness, and emotional literacy are fundamental components of contemporary education.

METHODOLOGY

RESEARCH DESIGN

This study follows a mixed-method experimental design to explore students' emotional and mental well-being across seasonal shifts. It employs a seasonal intervention approach structured into four distinct modules: summer, monsoon, autumn, and winter. A total of fifty students will participate, with 200 students assigned to each seasonal phase. Participants would be selected from South Indian secondary and university educational institutes. Both quantitative measurements and personal comments across emotional and climatic conditions are made possible by the design.

DATA COLLECTION TOOL

Data will be collected using quantitative and qualitative tools to ensure a holistic understanding of student well-being. Pre- and post-intervention surveys will be used to collect quantitative data using validated instruments as a Well-Being Index and the Emotional Intelligence Scale. Seasonal mood monitors, reflective notebooks, and focus group interviews will all be used to gather qualitative insights. In order to record peer relationships, participation levels, and behavioral patterns, researchers will also observe classes. This multi-method approach enhances the understanding of seasonal emotional fluctuations and facilitates triangulation.

ANALYTICS TOOL

This study uses thematic coding to analyse qualitative data from reflective journals and interviews by identifying recurring emotional themes across seasons. ANOVA (Analysis of Variance) will be applied to quantitatively compare students' well-being scores across the four seasonal groups to determine if any seasonal differences are statistically significant. Correlation analysis will be performed to look at relationships between temperature, rainfall, and students' mood indices in order to investigate the relationship between environment and emotion. These techniques enable quantifiable comparison as well as in-depth emotional analysis. When combined, they guarantee a fair comprehension of how climate affects mental health. Well-being in educational settings.

SEASONAL SYLLABUS FRAMEWORK

WINTER

Students tend to exhibit introspective, low-energy, and emotionally reserved behaviour during the winter season, particularly in regions with cooler climates or reduced daylight (such as parts of South India experiencing mild winters). The cooler environment may bring a natural slowing down of activities and cognitive functions. This seasonal rhythm can lead to a mindset that is reflective but also prone to lethargy, loneliness, or mild sadness—symptoms associated with Seasonal Affective Disorder (SAD), a phenomenon recognised even in subtropical settings due to shorter daylight and reduced physical activity (Rosenthal et al., 1984). Students may become more introverted, seek warmth and comfort, and show reduced enthusiasm in traditional high-energy tasks. This makes winter an ideal season to focus on nurturing inner calm, emotional self-awareness, and peer bonding through structured, slow-paced, emotionally enriching activities. To support mental well-being during winter, educators should introduce warm, low-stimulation games and group activities that promote reflection, empathy, and connection. Gratitude Circle: Students pass a token and share one positive thought or appreciation, cultivating warmth and emotional closeness. Board Games (e.g., Chess, Scrabble, Snakes & Ladders). Encourage concentration and collaboration without overstimulation. Story Chain: One student starts a calm winter-themed story, and others continue. This develops creativity and narrative empathy. Calm Quest" Game: A custom classroom role-play game where students complete emotional-regulation missions (e.g., breathe deeply, compliment a peer). Mindful arts and crafts (e.g., origami, mandala colouring), soft instrumental background music, and tea-time storytelling corners can create psychologically warm spaces. Group journaling or visual diary sharing allows quiet students to express emotions safely. These activities align with findings from educational psychology, which show that low-pressure, creative expression and cooperative games during colder seasons reduce anxiety and improve class cohesion (Tian & Huebner, 2015).

SUMMER

Summer, marked by high temperatures and longer daylight hours, tends to influence students with increased physical restlessness, agitation, and a reduced attention span due to heat-related discomfort and dehydration. In many Indian regions, this season coincides with exam pressure or the end of the academic year, often resulting in heightened stress and emotional sensitivity. Students may feel easily irritable, distracted, and fatigued, impacting their academic performance and interpersonal behaviour. Research by Parsons et al. (2013) confirms that heat stress can reduce cognitive efficiency, especially in adolescents, leading to reduced focus and increased frustration levels. However, summer is also a time when outdoor activity is culturally embedded, especially in the early mornings and late afternoons. Students show a strong inclination toward movement, competition, and expression. Channelling this natural energy into structured sports and physical games not only helps in emotional regulation but also improves their physical stamina, teamwork, and resilience. Activities like relay races, obstacle courses, dodgeball, water-carry relays, and traditional games like Kabaddi and Kho-Kho are ideal for early mornings. Indoor movement games like Zumba for kids can be offered during hotter hours. Crucially, these summer sports and cooperative games can be designed as part of a performance-based eligibility system for the next academic year. For example, students who complete their "Summer Resilience Challenge", which includes participation in 10 physical tasks, sportsmanship reflection, and teamwork badges, can earn points contributing to leadership roles or club memberships in

the upcoming term. This gamified model motivates emotional regulation through physical expression and builds self-confidence and anticipation for the Next Academic Year.

MONSOON

The monsoon season, with its overcast skies, rhythmic rains, and fluctuating weather, often brings about a mixed emotional response among students. Some may feel relaxed and introspective due to the calming ambience, while others experience mood dips, lethargy, or even mild anxiety due to reduced sunlight and restricted outdoor mobility. Studies have shown that weather-induced affective changes, including lower mood and reduced motivation, are common during monsoons (Denissen et al., 2008). Students may appear withdrawn or contemplative, making this a suitable time for creative, expressive, emotionally introspective, and technology-supported learning activities. Story Cubes (Monsoon Tales): Using story dice or cards, students collaboratively build rainy-season narratives, enhancing creativity and emotional communication. Indoor Nature Scavenger Hunt: Using collected leaves or natural elements, students match items to emotions (e.g., a dry leaf for tiredness), enhancing metaphorical thinking. Tech-Integrated & Online

Activities (For Rainy Days at Home): Digital Journaling Platforms (like Penzu or Google Docs): Students maintain emotion-tracking journals, adding daily reflections linked to weather patterns and moods. Rainy Day Kahoots or Quizzes: Interactive quizzes themed around nature, emotional health, or monsoon facts to keep engagement high while learning from home. Eco-Awareness Web Projects: Students research and create mini digital presentations or videos on rainwater harvesting, the importance of wetlands, or monsoon crops.Zoom "Feel-Share Circles": A short video session where students describe how the rain makes them feel and exchange calming strategies with peers. These activities not only prevent academic disengagement during school closures due to weather but also maintain emotional connection among classmates. Teachers can tie these digital tasks to internal assessments—awarding points for participation, creativity, and reflection. Additionally, incorporating such flexible modules into the syllabus promotes adaptive learning environments and ensures continuity of emotional education, even during seasonal interruptions.

AUTUMN

Autumn—often occurring between October and November in the South Indian academic calendar—is marked by transitional weather, harvest festivals, and preparation for new academic goals. Psychologically, this season tends to foster a balanced, reflective mindset in students. As it follows the monsoon and precedes year-end evaluations, students display improved focus, emotional maturity, and readiness for structured tasks. Researchers suggest that transitional periods like autumn support identity consolidation and long-term goal planning in adolescents (Eccles & Roeser, 2009). Emotionally, students in this period are more stable and open to collaboration, purpose-driven learning, and deeper interpersonal connections. Ideal games and activities for this season are those that promote identity expression, team-building, and gratitude: Peer Appreciation Circle: A gratitude-based game where students write anonymous compliments for classmates. Heritage Festival Role Play: Students act out folk tales, harvest celebrations, or family traditions to understand cultural roots. Values Bingo: Bingo-style game using value statements (e.g., "I helped someone," "I made someone laugh today") to promote self-awareness. This season is ideal for introducing leadership-building tasks and mentorship roles. For instance, students can be grouped into small teams and asked to co-plan a class celebration or community service project. Their participation, responsibility, and reflection can contribute to eligibility for leadership badges

or extra credit, creating a sense of purpose and identity integration. Autumn thus becomes a powerful season for developing emotional intelligence, gratitude, and self-awareness before student's transition into the winter introspection phase again

CONCLUSION

The Seasons of Learning model represents a transformative shift in how emotional well-being and environmental factors are addressed within education. By weaving together climate responsiveness and emotion-aware pedagogy, it goes beyond isolated, one-time interventions to create a continuous, seasonally attuned learning experience. This approach recognises that student emotions fluctuate with changes in weather, academic demands, and cultural rhythms—especially in diverse regions like South India. Through reflective practices, mood tracking, nature-based learning, and adaptive activities, students learn to identify, manage, and express their emotions in healthy ways. Moreover, the model fosters a deeper connection with nature, encouraging students to become not just emotionally resilient but also ecologically conscious citizens. It bridges the persistent gap between theory and practice in emotional education by integrating it directly into classroom life across the academic year. The long-term goal is not just to improve mental health in the short term but to equip students with lifelong emotional skills that align with environmental realities. Ultimately, this model promotes well-being, empathy, and adaptability, shaping a generation prepared to thrive in both academic and climate-challenged futures.

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